



Sierrita Operations
Environment, Land & Water Department
6200 West Duval Mine Road
PO Box 527
Green Valley, Arizona 85622-0527

October 4, 2010

Via Certified Mail # 7009 3410 0002 3634 4507
Return Receipt Requested

Ms. Cynthia S. Campbell
Arizona Department of Environmental Quality
Water Quality Compliance Section
1100 West Washington Street
Phoenix, Arizona 85007-2935

**Re: Semiannual Groundwater Monitoring Report for Samples
 Collected During the Second and Third Quarters 2010
 Mitigation Order on Consent Docket No. P-50-06**

Dear Ms. Campbell:

Attached please find three (3) hard copies and one (1) disc of the *Semiannual Groundwater Monitoring Report for Samples Collected During the Second and Third Quarters 2010*, prepared by Clear Creek Associates, P.L.C. for Freeport-McMoRan Sierrita Inc. (Sierrita). This document provides results of groundwater monitoring conducted during the second and third quarter of 2010, as agreed upon and described on letter from ADEQ to Sierrita dated April 17, 2009.

Please do not hesitate to contact me at (520) 393-4435.

Sincerely,


Martha G. Mottley
Chief Environmental Engineer
Freeport-McMoRan Sierrita Inc.

MGM:ms
Attachments
20101004_003

xc: Henry Darwin, Arizona Department of Environmental Quality
John Broderick, Sierrita
Chad Fretz, Sierrita
Ned Hall, FCX
Stuart Brown, FCX
Jim Norris, Clear Creek Associates

**SEMIANNUAL GROUNDWATER MONITORING REPORT
FOR SAMPLES COLLECTED DURING THE SECOND AND
THIRD QUARTERS 2010**

**MITIGATION ORDER ON CONSENT DOCKET NO. P-50-06
PIMA COUNTY, ARIZONA**

Prepared for:

FREEPORT-MCMORAN SIERRITA INC.
6200 West Duval Mine Road
Green Valley, Arizona 85614

Prepared by:

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October 1, 2010

**SEMIANNUAL GROUNDWATER MONITORING REPORT
FOR SAMPLES COLLECTED DURING THE SECOND AND
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Prepared for:

FREEPORT-MCMORAN SIERRITA INC.

6200 West Duval Mine Road
Green Valley, Arizona 85614

Approved by:

James R. Norris
Arizona Registered Geologist No. 30842

October 1, 2010

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1. INTRODUCTION

This report provides the results of groundwater monitoring conducted in the second and third quarters 2010 in the vicinity of the Freeport-McMoRan Sierrita Inc. (Sierrita) Tailing Impoundment (STI). Monitoring was conducted by Sierrita to characterize groundwater sulfate concentrations and groundwater elevations in the vicinity of the STI. This semiannual groundwater monitoring report was prepared by Clear Creek Associates (CCA) on behalf of Sierrita.

1.1 Scope of Groundwater Monitoring

Quarterly groundwater monitoring pursuant to the Mitigation Order on Consent Docket No. P-50-06 has been conducted since the fourth quarter 2006 according to the specifications of the Work Plan (HGC, 2006a) submitted to and approved by Arizona Department of Environmental Quality (ADEQ). The purpose of the groundwater monitoring under the Work Plan was to document sulfate concentrations and water levels to determine the lateral and vertical extent of the sulfate plume and provide data for the development of conceptual and numerical models of the plume. Submittal of the Aquifer Characterization Report (HGC, 2009a), Feasibility Study (HGC, 2008) and Mitigation Plan (HGC, 2009b) fulfilled the objectives of monitoring recommended by the Work Plan.

In 2009, the groundwater monitoring requirements were revised in collaboration with ADEQ. The objectives of the revised groundwater monitoring plan are to track the location of the plume edge and monitor drinking water supply wells near the plume prior to implementation of the additional mitigation measures recommended in the Feasibility Study.

The details of the pre-implementation groundwater monitoring are outlined in letters from Sierrita to ADEQ on May 15, 2009 (Sierrita, 2009a) and June 12, 2009 (Sierrita, 2009b). Wells identified for annual, quarterly, and semiannual monitoring for pre-implementation groundwater monitoring are shown in Table 1 and Figure 1.

Groundwater sampling and analysis methods followed by Sierrita are described in the Quality Assurance Project Plan (QAPP) contained in Appendix E of the Work Plan (HGC, 2006a). Results of groundwater monitoring are presented in Section 2.1.

2. GROUNDWATER MONITORING

2.1 Monitoring Results

Analytical results and groundwater elevation data for the second and third quarters 2010 are tabulated in Table 2 and Table 3, respectively. Figure 2 shows the concentrations of dissolved sulfate in the wells sampled in the second quarter 2010. Figure 3 shows the dissolved sulfate concentrations in drinking water supply wells in the vicinity of the plume and their corresponding sentinel wells in the third quarter 2010. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Groundwater elevations in the second and third quarters 2010 are presented on Figures 4 and 5, respectively. Groundwater elevations were calculated using the depth to water measurements taken under non-pumping conditions whenever possible. Groundwater elevations calculated from depth to water measurements taken during pumping are presented but not used for groundwater contouring.

2.2 Quality Assurance/Quality Control Review

Pursuant to Section 6.4 of the QAPP, a data verification report was prepared for quality assurance and quality control purposes. The data verification report reviews groundwater data collected by Sierrita during the second and third quarters 2010, and is included as Appendix A. Analytical laboratory reports for samples collected in the second and third quarters 2010 are provided in portable document format on the compact diskette in Appendix B. As determined by the analytical data verification review, all data are of acceptable quality for use in the groundwater monitoring program conducted pursuant to the Mitigation Order.

3. FINDINGS

This semiannual data report provides the results of groundwater monitoring conducted in the vicinity of the STI for the second and third quarters 2010 (Table 1). Groundwater samples and depth to water measurements were collected from 88 plume area wells during the second quarter 2010. In the third quarter 2010 groundwater samples and depth to water measurements were collected from 14 plume area wells.

All wells were sampled according to the schedule presented in the pre-implementation groundwater monitoring plan except well I-10 which was scheduled to be sampled in the second quarter. I-10 was not sampled due to safety concerns with the generator used at the well. Sierrita personnel are addressing the problem with the generator.

- Sulfate concentration data indicate that the sulfate plume from the STI (as defined by the 250 mg/L sulfate concentration contour) extends northeast from the southeastern corner of the tailing impoundment to the vicinity of co-located wells CW-3/MO-2007-5. The plume then extends north from wells CW-3/MO-2007-5 to the west of wells NP-2/MO-2007-3 and to Duval Mine Road, just north of the MO-2007-1 wells (Figures 2 and 3). Comparison of the second and third quarters 2010 sulfate concentration data with those collected in previous quarters indicates that there has not been any significant change to the plume geometry.
- Appendix C presents time series graphs of sulfate concentrations for drinking water supply wells in the vicinity of the edge of the plume, sentinel wells between the plume and the drinking supply wells, and other monitoring wells that document the edge of the plume. The time series graphs for water supply wells CW-6, CW-9, CW-10, GVDWID-GV-01, and GVDWID-GV-02 indicate that sulfate concentrations are steady over time and less than the interim action trigger level of 135 mg/L (HGC, 2006b).
- Sulfate concentrations reported for groundwater samples collected from sentinel wells NP-2, MO-2007-3B, MO-2007-4A, MO-2007-4B, MO-2007-4C, MO-2007-6A, and MO-2009-1 are steady over time and below 135 mg/L, which is the trigger level for more frequent monitoring at sentinel wells (Sierrita, 2009a). Sulfate concentrations at sentinel wells MO-2007-3C and MO-2007-6B are below 135 mg/L and decrease over time but are variable.
- Data presented in the time series graphs indicate that sulfate concentrations in wells along the edge of the plume are relatively steady or decline over time except at MO-2009-1, MO-2007-1B, MO-2007-1C, and ESP-1. The limited data available at MO-2009-1 are insufficient to determine the long term trend. Sulfate concentrations increased at MO-2007-1B and MO-2007-1C which are positioned at the leading edge of the plume. The sulfate concentrations in BMO-2007-1B and BMO-2007-1C are expected to increase until the mitigation measures identified by the Feasibility Study and Mitigation Plan are

implemented. Sulfate concentrations at ESP-1 are variable over time but have increased since 2008.

- Appendix D presents time series graphs of groundwater elevation at the sentinel wells. The time series graphs show that water levels at these wells are relatively steady over time. Groundwater elevations for the sentinel wells generally increased through the first and second quarters and decreased through the third and fourth quarters.

4. REFERENCES

- Hydro Geo Chem, Inc. (HGC). 2006a. Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Phelps Dodge Sierrita Tailing Impoundment, Pima County, Arizona. August 11, 2006, revised October 31, 2006.
- HGC. 2006b. Interim Action Identification, Technical Memorandum for Mitigation Order on Consent Docket No. P-50-06, Pima County, Arizona. December 22, 2006.
- HGC. 2008. Feasibility Study for Mitigation of Sulfate in the Vicinity of the Freeport-McMoRan Sierrita Inc. Tailing Impoundment, Mitigation Order on Consent Docket No. P-50-06. October 22, 2008.
- HGC. 2009a. Revision 1, Aquifer Characterization Report, Task 5 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. Pima County, Arizona. January 30, 2009.
- HGC. 2009b. Mitigation Plan for Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Freeport-McMoRan Sierrita Inc. Tailing Impoundment, Mitigation Order on Consent Docket No. P-50-06. May 8, 2009.
- Sierrita. 2009a. Letter from Ned Hall (Sierrita) to Cynthia Campbell (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, Response to ADEQ Comments on Recommended Groundwater Monitoring for Sulfate. May 15, 2009.
- Sierrita. 2009b. Letter from Ned Hall (Sierrita) to Cynthia Campbell (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, Supplemental Information on Recommended Groundwater Monitoring for Sulfate. June 12, 2009.

TABLES

TABLE 1
Sampling Schedule for Pre-Implementation Groundwater Monitoring

Well Name	ADWR 55 Well Registry No.	Owner	Annual Sampling Second Quarter	Quarterly Sampling Third Quarter	Semiannual Sampling Fourth Quarter	Quarterly Sampling First Quarter
1350	ND	TBPI	WLO			
CC OF GV	501760	CC of GV	✓			
CW-10	207982	CWC	✓	✓	✓	✓
CW-3	627483	CWC	✓		✓	
CW-6	627485	CWC	✓	✓	✓	✓
CW-7	502546	CWC	WLO			
CW-8	543600	CWC	WLO			
CW-9	588121	CWC	✓	✓	✓	✓
ESP-1	623102	Sierrita	✓		✓	
ESP-2	623103	Sierrita	✓		✓	
ESP-3	623104	Sierrita	✓		✓	
ESP-4	623105	Sierrita	✓		✓	
ESP-5	623106	Sierrita	WLO			
GV-01-GVDWID	603428	GVDWID	✓	✓	✓	✓
GV-02-GVDWID	603429	GVDWID	✓	✓	✓	✓
GV-SI-GVDWID	208825	GVDWID	✓			
HAVEN GOLF	515867	Haven Golf	✓			
I-10	608525	TBPI	✓			
IW-1	623129	Sierrita	✓			
IW-2A	216464	Sierrita	✓			
IW-3A	623131	Sierrita	✓			
IW-4	623132	Sierrita	✓			
IW-5	623133	Sierrita	✓			
IW-6A	545565	Sierrita	✓			
IW-8	508236	Sierrita	✓			
IW-9	508238	Sierrita	✓			
IW-10	508237	Sierrita	✓			
IW-11	508235	Sierrita	✓			
IW-12	545555	Sierrita	✓			
IW-13	545556	Sierrita	✓			
IW-14	545557	Sierrita	✓			
IW-15	545558	Sierrita	✓			
IW-16	545559	Sierrita	✓			
IW-17	545560	Sierrita	✓			
IW-18	545561	Sierrita	✓			
IW-19	545562	Sierrita	✓			

TABLE 1
Sampling Schedule for Pre-Implementation Groundwater Monitoring

Well Name	ADWR 55 Well Registry No.	Owner	Annual Sampling Second Quarter	Quarterly Sampling Third Quarter	Semiannual Sampling Fourth Quarter	Quarterly Sampling First Quarter
IW-20	545563	Sierrita	✓			
IW-21	545564	Sierrita	✓			
IW-22	200554	Sierrita	✓			
IW-23	200555	Sierrita	✓			
IW-24	200556	Sierrita	✓			
M-8	87390	TBPI	✓		✓	
M-9	501652	TBPI	✓			
M-10	501653	TBPI	✓		✓	
M-20	906595	TBPI	✓			
MH-1	803629	Sierrita	WLO			
MH-3	803630	Sierrita	WLO			
MH-5	803632	Sierrita	WLO			
MH-6	803633	Sierrita	WLO			
MH-7	803634	Sierrita	WLO			
MH-9	803635	Sierrita	WLO			
MH-10	803636	Sierrita	✓			
MH-11	803637	Sierrita	✓			
MH-13A	904071	Sierrita	✓			
MH-13B	904072	Sierrita	✓			
MH-13C	904073	Sierrita	✓			
MH-14	528098	Sierrita	WLO			
MH-15E	528094	Sierrita	WLO			
MH-15W	528093	Sierrita	WLO			
MH-16E	528100	Sierrita	WLO			
MH-16W	528099	Sierrita	WLO			
MH-24	563799	Sierrita	WLO			
MH-25A	201528	Sierrita	✓			
MH-25B	208429	Sierrita	✓			
MH-25C	208426	Sierrita	✓			
MH-26A	201527	Sierrita	✓			
MH-26B	208427	Sierrita	✓			
MH-26C	208428	Sierrita	✓			
MH-28	903648	Sierrita	✓		✓	
MH-29	903649	Sierrita	✓		✓	
MH-30	903884	Sierrita	✓			
MO-2007-1A	907342	Sierrita	✓		✓	

TABLE 1
Sampling Schedule for Pre-Implementation Groundwater Monitoring

Well Name	ADWR 55 Well Registry No.	Owner	Annual Sampling Second Quarter	Quarterly Sampling Third Quarter	Semiannual Sampling Fourth Quarter	Quarterly Sampling First Quarter
MO-2007-1B	907210	Sierrita	✓		✓	
MO-2007-1C	907209	Sierrita	✓		✓	
MO-2007-2	906765	Sierrita	✓			
MO-2007-3B ¹	906816	Sierrita	✓	✓	✓	✓
MO-2007-3C ¹	906817	Sierrita	✓	✓	✓	✓
MO-2007-4A ²	907213	Sierrita	✓	✓	✓	✓
MO-2007-4B ²	907212	Sierrita	✓	✓	✓	✓
MO-2007-4C ²	907211	Sierrita	✓	✓	✓	✓
MO-2007-5B	907456	Sierrita	✓		✓	
MO-2007-5C	907457	Sierrita	✓		✓	
MO-2007-6A ³	907607	Sierrita	✓	✓	✓	✓
MO-2007-6B ³	907606	Sierrita	✓	✓	✓	✓
MO-2009-1 ⁴	910458	Sierrita	✓	✓	✓	✓
NP-2 ¹	605898	CWC	✓	✓	✓	✓
PZ-7	561870	Sierrita	✓			
PZ-8	561866	Sierrita	✓			
TMM-1	616156	Pima County	✓		✓	

Notes:

ADWR = Arizona Department of Water Resources

CC OF GV = Country Club of Green Valley

CWC = Community Water Company of Green Valley

GVDWID = Green Valley Domestic Water Improvement District

ND = No Data

Sierrita = Freeport-McMoRan Sierrita Inc.

TBPI = Twin Buttes Properties, Inc.

WLO = Water Level Only

¹ Sentinel Well for CW-9

² Sentinel Well for CW-6

³ Sentinel Well for GV-01-GVDWID and GV-02-GVDWID

⁴ Sentinel Well for CW-10

TABLE 2
Analytical Results for Second and Third Quarters 2010 Groundwater Monitoring

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temperature (deg C)	Specific Conductance (µS/cm)	Sulfate, dissolved (mg/L)
CC of GV	501760	4/22/10	6.99	21.26	929	95
CW-3	627483	4/22/10	7.32	23.03	475	57.7
CW-6	627485	5/14/10	7.70	26.50	380	52.1
		7/27/10	7.50	27.5	444	55.2
CW-9	588121	5/14/10	7.62	28.1	345	44.2
		7/27/10	7.58	28.4	390	44.1
CW-10	207982	5/14/10	7.79	30.7	349	49.1
		7/27/10	7.69	31.4	380	48.9
ESP-1	623102	4/28/10	7.49	28.7	639	204
ESP-2	623103	4/28/10	7.67	27.9	324	28.7
ESP-3	623104	4/28/10	7.77	25.8	326	35.8
ESP-4	623105	4/28/10	7.37	26.7	936	558
		4/28/10 DUP	7.37	26.7	936	520
GV-01-GVDWID	603428	4/1/10	7.49	24.6	420	48.5
		7/28/10	7.20	28.1	348	39.4
GV-02-GVDWID	603429	4/1/10	7.33	22.9	555	99.5
		7/28/10	7.23	24.6	650	83
GV-SI-GVDWID	208825	4/1/10	7.55	26.1	339	6.9
HAVEN GOLF	515867	4/22/10	6.85	20.8	726	109
IW-1	623129	4/12/10	6.79	29.6	1148	940
IW-2A	216464	4/12/10	7.04	--	28.9	77
IW-3A	623131	4/12/10	6.55	27.5	1380	1500
IW-4	623132	4/12/10	6.49	26.8	1483	1600
IW-5	623133	4/12/10	6.59	25.7	1476	1800
		4/12/10 DUP	6.59	25.7	1476	1700
IW-6A	545565	4/12/10	6.99	34.2	1437	1800
IW-8	508236	4/12/10	6.52	25.6	1547	1900
IW-9	508238	4/12/10	6.95	29.2	1579	1800
		4/12/10 DUP	6.95	29.2	1579	1800
IW-10	508237	4/12/10	6.61	26.5	1431	1700
IW-11	508235	4/12/10	6.63	24.6	1492	1700
IW-12	545555	4/12/10	6.70	22.8	1579	1500
IW-13	545556	4/12/10	6.64	24.1	1669	1900
IW-14	545557	4/21/10	6.89	24.8	1428	1900
IW-15	545558	4/12/10	6.69	25.0	1669	1700
IW-16	545559	4/12/10	6.79	25.6	1652	1800
IW-17	545560	4/12/10	6.63	26.5	1604	1700
IW-18	545561	4/29/10	6.63	23.7	1455	1600
IW-19	545562	4/12/10	6.62	26.4	1570	1600
IW-20	545563	4/29/10	6.62	24.2	1417	1600
IW-21	545564	4/12/10	6.72	28.1	1621	1700
IW-22	200554	4/12/10	6.59	25.4	1472	1800
IW-23	200555	4/12/10	6.81	26.6	1491	1700
IW-24	200556	4/12/10	6.70	27.1	1450	1600
M-8	087390	5/28/10	7.63	26.9	448	45.1
M-9	501652	6/16/10	7.63	26.6	511	77
M-10	501653	5/28/10	7.83	30.1	497	121

TABLE 2
Analytical Results for Second and Third Quarters 2010 Groundwater Monitoring

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temperature (deg C)	Specific Conductance (µS/cm)	Sulfate, dissolved (mg/L)
M-20	906595	5/28/10	7.22	28.2	3050	1620
MH-10	803636	4/26/10	7.05	29.9	1365	1500
		4/26/10 DUP	7.05	29.9	1365	1400
MH-11	803637	4/27/10	6.61	29.3	1382	1400
MH-13A	904071	4/21/10	7.24	25.3	1384	1700
MH-13B	904072	4/21/10	7.57	28.8	1100	1030
MH-13C	904073	4/21/10	8.84	28.0	385	27
MH-25A	201528	4/13/10	7.76	25.3	334	9
MH-25B	208429	4/13/10	7.59	28.1	1120	900
MH-25C	208426	4/13/10	7.24	27.6	1292	1600
MH-26A	201527	4/13/10	7.60	26.7	332	8
MH-26B	208427	4/13/10	7.27	27.3	1290	1600
MH-26C	208428	4/13/10	7.57	28.4	1078	770
		4/13/10 DUP	7.57	28.4	1078	780
MH-28	903548	4/15/10	7.11	25.1	1399	1900
MH-29	903649	4/15/10	6.99	24.9	1358	1700
MH-30	903884	4/15/10	6.96	28.9	1697	1480
MO-2007-1A	907342	4/16/10	7.52	26.7	357	18.5
MO-2007-1B	907210	4/16/10	7.59	26.9	663	212
MO-2007-1C	907209	4/16/10	7.66	28.5	730	320
MO-2007-2	906765	4/13/10	7.17	30.3	855	439
		4/13/10 DUP	7.17	30.3	855	450
MO-2007-3B	906816	4/14/10	7.83	28.6	336	40.4
		7/21/10	7.86	27.7	372	38.7
MO-2007-3C	906817	4/14/10	8.07	30.9	465	110
		7/21/10	8.05	30.4	511	101
MO-2007-4A	907213	4/14/10	7.63	25.2	379	37.0
		7/21/10	7.54	26.9	420	34.9
MO-2007-4B	907212	4/14/10	7.76	25.1	342	35.1
		7/21/10	7.71	30.2	379	34
		7/21/10 DUP	7.71	30.2	379	34.9
MO-2007-4C	907211	4/14/10	8.11	27.6	423	87.7
		7/21/10	8.23	32.4	467	85.6
MO-2007-5B	907456	4/27/10	7.90	29.3	987	427
MO-2007-5C	907457	4/27/10	7.17	32.3	663	245
		4/27/10 DUP	7.17	32.3	663	248
MO-2007-6A	907607	4/21/10	7.59	27.3	375	34.7
		8/10/10	7.86	31.2	386	26.8
MO-2007-6B	907606	4/21/10	7.95	29.5	380	57.9
		4/21/2010 DUP	7.95	29.5	380	57.9
		8/10/10	7.86	31.2	438	68.8
		8/10/10 DUP	7.86	31.2	438	68.6
MO-2009-1	910458	4/20/10	8.21	30.4	467	99
		8/10/10	8.23	31.4	528	109

TABLE 2
Analytical Results for Second and Third Quarters 2010 Groundwater Monitoring

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temperature (deg C)	Specific Conductance (μ S/cm)	Sulfate, dissolved (mg/L)
NP-2	605898	4/22/10	7.25	23.49	447	41.9
		8/5/10	7.67	26.0	429	41.2
PZ-7	561870	4/23/10	6.12	20.51	1400	432
PZ-8	561866	4/22/10	6.88	16.3	1230	305
TMM-1	616156	4/20/10	8.08	27.0	281	12

Notes:

ADWR = Arizona Department of Water Resources

SU = Standard Units

μ S/cm = microsiemens per centimeter

deg C = degrees Celsius

NA = Not Analyzed

mg/L = milligrams per Liter

DUP = Duplicate sample

TABLE 3
Groundwater Elevation Data for Second and Third Quarters 2010

Well Name	ADWR 55 Registry No.	Survey Source	UTM North (m)	UTM East (m)	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
1350	ND	TBPI	3528452.906	499357.609	3033.25	5/28/10	478.78	2554.47
CC OF GV	501760	HGC	3527876.220	501635.382	2823.45	4/22/10	259.51	2563.94
CW-3	627483	HGC	3523809.985	500047.663	2941.71	4/22/10	271.91	2669.80
CW-6	627485	CWC	3525794.239	500891.072	2867.00	5/14/10	252.78	2614.22
						7/27/10	257.35	2609.65
CW-7	502546	CWC	3528094.155	499659.842	2987.50	5/14/10	438.35	2549.15
CW-8	543600	CWC	3525661.191	499798.520	2957.50	4/12/10	342.00	2615.50
CW-9	588121	CWC	3528740.784	501072.040	2834.30	5/14/10	316.20	2518.10
						7/27/10	313.63	2520.67
CW-10	207982	CWC	3523455.502	500913.364	2868.50	5/14/10	190.10	2678.40
						7/27/10	198.52	2669.98
ESP-1	623102	Sierrita	3526448.677	499969.682	2953.43	4/28/10	354.10	2599.33
ESP-2	623103	Sierrita	3526924.656	500241.637	2934.60	4/28/10	343.99	2590.61
ESP-3	623104	Sierrita	3527377.239	500234.067	2935.80	4/28/10	361.69	2574.11
ESP-4	623105	Sierrita	3526132.758	499916.830	2958.60	4/28/10	351.56	2607.04
ESP-5	623106	Sierrita	3527082.232	502007.895	2820.00	4/28/10	223.28	2596.72
GV-01-GVDWID	603428	GVDWID	3522254.157	499812.869	2942.35	4/1/10	227.12	2715.23
GV-02-GVDWID	603429	GVDWID	3521654.457	499786.207	2930.47	4/1/10	197.10	2733.37
						7/28/10	202.76	2727.71
GV-SI-GVDWID	208825	HGC	3519509.930	497227.175	3042.65	4/1/10	247.60	2795.05
IW-1	623129	Sierrita	3521277.779	496905.892	3144.69	4/12/10	394.45	2750.24
IW-2A	216464	Sierrita	3521337.953	497469.228	3112.28	4/12/10	410.18	2702.10
IW-3A	201732	Sierrita	3521722.640	497366.220	3121.45	4/12/10	420.23	2701.22
IW-4	623132	Sierrita	3522465.879	497371.700	3137.06	4/12/10	420.70	2716.36
IW-5	623133	Sierrita	3522814.850	497369.528	3137.65	4/12/10	430.60	2707.05
IW-6A	545565	Sierrita	3523708.756	497381.226	3132.26	4/12/10	384.70	2747.56
IW-8	508236	Sierrita	3522020.520	497368.253	3122.19	4/12/10	438.36	2683.83
IW-9	508238	Sierrita	3522207.639	497369.791	3102.94	4/12/10	426.67	2676.27
IW-10	508237	Sierrita	3523122.199	497370.367	3129.64	4/12/10	463.16	2666.48
IW-11	508235	Sierrita	3523428.954	497371.414	3127.20	4/12/10	421.14	2706.06
IW-12	803638	Sierrita	3523969.869	497364.911	3138.18	12/2010*	425.40	2712.78
IW-13	545556	Sierrita	3524166.673	497363.820	3143.35	4/12/10	404.66	2738.69
IW-14	545557	Sierrita	3524373.122	497367.126	3146.42	4/21/10	422.20	2724.22
IW-15	545558	Sierrita	3524567.261	497372.873	3152.02	4/12/10	419.39	2732.63
IW-16	545559	Sierrita	3524782.868	497370.651	3162.85	4/12/10	405.68	2757.17

TABLE 3
Groundwater Elevation Data for Second and Third Quarters 2010

Well Name	ADWR 55 Registry No.	Survey Source	UTM North (m)	UTM East (m)	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
IW-17	545560	Sierrita	3525002.869	497373.717	3160.76	4/12/10	425.12	2735.64
IW-18	545561	Sierrita	3525169.771	497374.056	3171.15	4/12/10	442.94	2728.21
IW-19	545562	Sierrita	3525343.392	497373.630	3155.39	4/12/10	445.24	2710.15
IW-20	545563	Sierrita	3525568.770	497364.739	3164.21	4/29/10	418.07	2746.14
IW-22	200554	Sierrita	3523273.592	497369.590	3128.25	4/12/10	434.62	2693.63
IW-23	200555	Sierrita	3522970.788	497369.237	3128.53	4/12/10	538.78	2589.75
IW-24	200556	Sierrita	3522633.594	497371.670	3113.29	4/12/10	522.90	2590.39
M-8	87390	Sierrita	3529692.237	499658.916	2999.53	5/28/10	466.61	2532.92
M-9	501652	Sierrita	3530303.954	499984.173	2973.81	6/16/10	453.85	2519.96
M-10	501653	Sierrita	3530143.114	499659.027	3005.68	6/4/10	480.29	2525.39
M-20	906595	TBPI	3528491.771	499082.070	3054.00	5/28/10	498.51	2555.49
MH-1	803629	Sierrita	3525872.911	497372.392	3179.27	4/13/10	438.62	2740.65
MH-3	803630	Sierrita	3525270.181	497472.430	3155.87	4/13/10	418.92	2736.95
MH-5	803632	Sierrita	3523725.339	497477.352	3123.47	4/13/10	381.47	2742.00
MH-6	803633	Sierrita	3522770.451	497436.646	3133.97	4/13/10	389.35	2744.62
MH-7	803634	Sierrita	3522016.471	497502.475	3111.23	4/13/10	372.63	2738.60
MH-9	803635	Sierrita	3521252.607	496438.181	3162.57	4/15/10	373.30	2789.27
MH-10	803636	Sierrita	3521236.861	495717.770	3187.84	4/26/10	362.04	2825.80
MH-11	803637	Sierrita	3524463.648	498749.381	3041.76	4/27/10	375.85	2665.91
MH-13A	904071	Sierrita	3523793.443	498823.857	3026.23	4/21/10	333.27	2692.96
MH-13B	904072	Sierrita	3523787.358	498829.881	3025.63	4/21/10	337.47	2688.16
MH-13C	904073	Sierrita	3523793.032	498797.461	3028.46	4/21/10	343.86	2684.60
MH-14	528098	Sierrita	3525269.340	497517.626	3153.46	4/15/10	422.91	2730.55
						8/12/10	421.82	2731.64
MH-15E	528094	Sierrita	3523274.327	497584.800	3111.37	4/13/10	386.17	2725.20
MH-15W	528093	Sierrita	3523275.003	497524.067	3117.07	4/15/10	390.58	2726.49
						8/12/10	389.20	2727.87
MH-16E	528100	Sierrita	3521870.233	497576.673	3097.72	4/13/10	357.71	2740.01
MH-16W	528099	Sierrita	3521870.818	497516.074	3100.24	4/15/10	360.31	2739.93
						8/12/10	360.42	2739.82
MH-24	563799	Sierrita	3523709.046	497390.515	3131.16	4/13/10	386.43	2744.73
MH-25A	201528	Sierrita	3526510.175	498880.349	3056.57	4/13/10	458.10	2598.47
MH-25B	208429	Sierrita	3526515.244	498870.343	3058.22	4/13/10	458.27	2599.95
MH-25C	208426	Sierrita	3526491.132	498874.666	3057.24	4/13/10	459.28	2597.96
MH-26A	201527	Sierrita	3527818.233	498852.692	3070.89	4/13/10	499.68	2571.21

TABLE 3
Groundwater Elevation Data for Second and Third Quarters 2010

Well Name	ADWR 55 Registry No.	Survey Source	UTM North (m)	UTM East (m)	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
MH-26B	208427	Sierrita	3527814.016	498839.900	3070.50	4/13/10	496.77	2573.73
MH-26C	208428	Sierrita	3527806.770	498865.240	3069.11	4/13/10	498.14	2570.97
MH-28	903548	Sierrita	3524609.980	497471.427	3142.18	4/15/10	395.65	2746.53
						8/12/10	398.60	2743.58
MH-29	903649	Sierrita	3522805.518	497604.326	3123.15	4/15/10	379.59	2743.56
						8/12/10	378.65	2744.50
MH-30	903884	Sierrita	3525926.812	496682.307	3232.45	4/15/10	412.03	2820.42
MO-2007-1A	907342	Sierrita	3529331.380	500016.947	2967.65	4/16/10	428.89	2538.76
MO-2007-1B	907210	Sierrita	3529325.119	500021.574	2966.82	4/16/10	429.13	2537.69
MO-2007-1C	907209	Sierrita	3529328.959	500013.405	2968.58	4/16/10	426.93	2541.65
MO-2007-2	906765	Sierrita	3527621.102	497912.410	3153.83	4/13/10	580.50	2573.33
MO-2007-3B	906816	Sierrita	3528508.801	500522.491	2912.15	4/14/10	360.30	2551.85
						7/21/10	362.20	2549.95
MO-2007-3C	906817	Sierrita	3528508.743	500529.713	2911.90	4/14/10	360.45	2551.45
						7/21/10	367.50	2544.40
MO-2007-4A	907213	Sierrita	3525634.956	500383.682	2923.63	4/14/10	308.53	2615.10
						7/21/10	311.05	2612.58
MO-2007-4B	907212	Sierrita	3525613.952	500380.947	2923.57	4/14/10	308.79	2614.78
						7/21/10	311.22	2612.35
MO-2007-4C	907211	Sierrita	3525624.484	500382.217	2923.66	4/14/10	309.58	2614.08
						7/21/10	312.75	2610.91
MO-2007-5B	907456	Sierrita	3523743.376	500013.850	2944.35	4/27/10	268.02	2676.33
MO-2007-5C	907457	Sierrita	3523736.459	500014.152	2944.91	4/27/10	276.49	2668.42
MO-2007-6A	907607	Sierrita	3521842.050	498367.161	3043.37	4/21/10	306.44	2736.93
						8/10/10	309.12	2734.25
MO-2007-6B	907606	Sierrita	3521849.495	498367.887	3043.05	4/21/10	316.64	2726.41
						8/10/10	318.40	2724.65
MO-2009-1	910458	Sierrita	3523369.438	500534.089	2890.78	4/20/10	219.94	2670.84
						8/10/10	227.88	2662.90
NP-2	605898	HGC	3528517.116	500582.904	2906.56	4/22/10	356.38	2550.18
						8/5/10	357.93	2548.63
PZ-7	561870	Sierrita	3526357.485	492533.171	3549.17	4/23/10	140.22	3408.95

TABLE 3
Groundwater Elevation Data for Second and Third Quarters 2010

Well Name	ADWR 55 Registry No.	Survey Source	UTM North (m)	UTM East (m)	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
PZ-8	561866	Sierrita	3524196.243	492972.681	3480.36	4/20/10	227.87	3252.49
TMM-1	616156	HGC	3529736.231	500018.323	2967.08	4/20/10	436.99	2530.09

Notes:

ADWR = Arizona Department of Water Resources

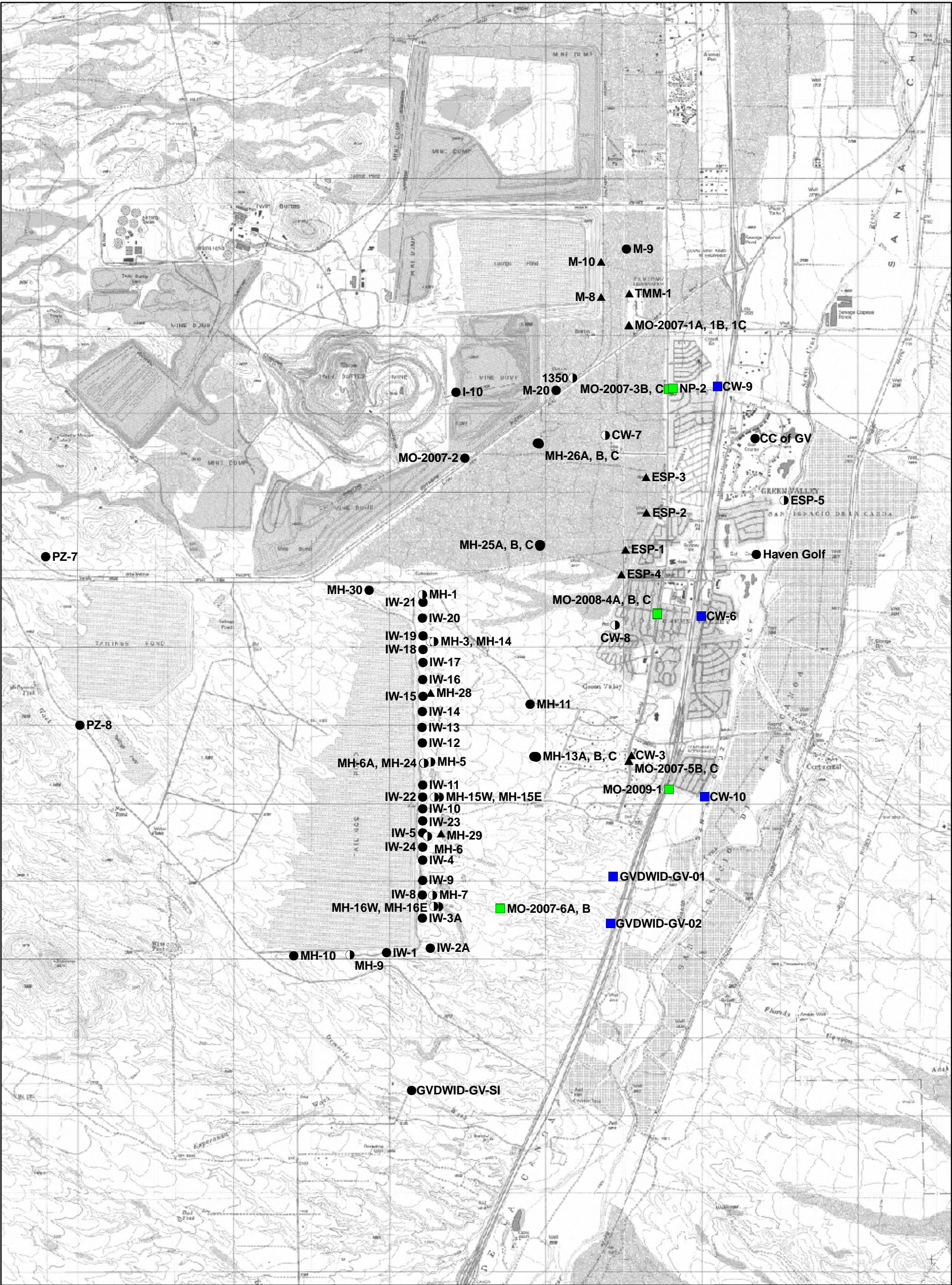
UTM = Universal Transverse Mercator, Zone 12 North American Datum 1983 (NAD83)

ft amsl = feet above mean sea level

Water level measurement for IW were collected under dynamic conditions and not used for contouring

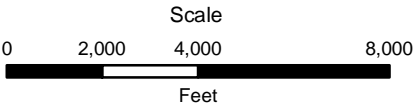
HGC = Hydro Geo Chem, Inc.

FIGURES



Legend

- Annual Sampling
- Annual Water Level Only
- ▲ Semi-Annual Sampling
- Quarterly Sampling - Sentinel Well
- Quarterly Sampling - Drinking Water Supply Well



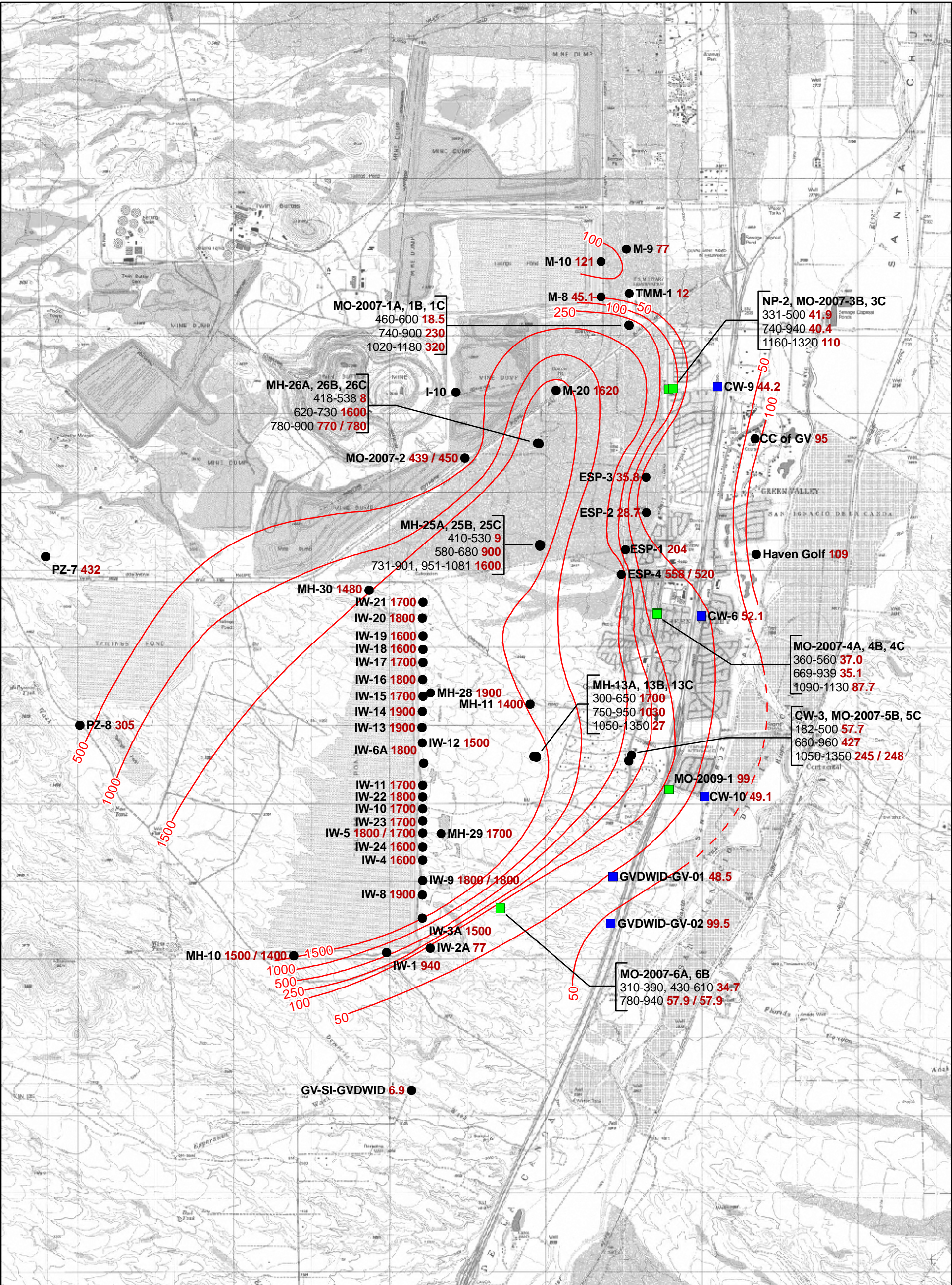
Date 1/20/10

File ID 055038-006



CLEAR CREEK ASSOCIATES

Figure 1
Sampling Locations for
Pre-Implementation Groundwater
Monitoring



Legend

— Sulfate Concentration Contour (mg/L)
(dashed where inferred)

● **CW-9** Well ID
44.2 Sulfate Concentration (mg/L)
Duplicate results separated by "/"

Co-Located Wells
— Screened Interval (ft bls): **Sulfate Concentration (mg/L)**

Well Symbols

● Well

■ Sentinel Well

■ Drinking Water Supply Well

Scale

0 2,000 4,000 8,000

Feet

Date 6/29/10

File ID 055039-032

CLEAR CREEK ASSOCIATES

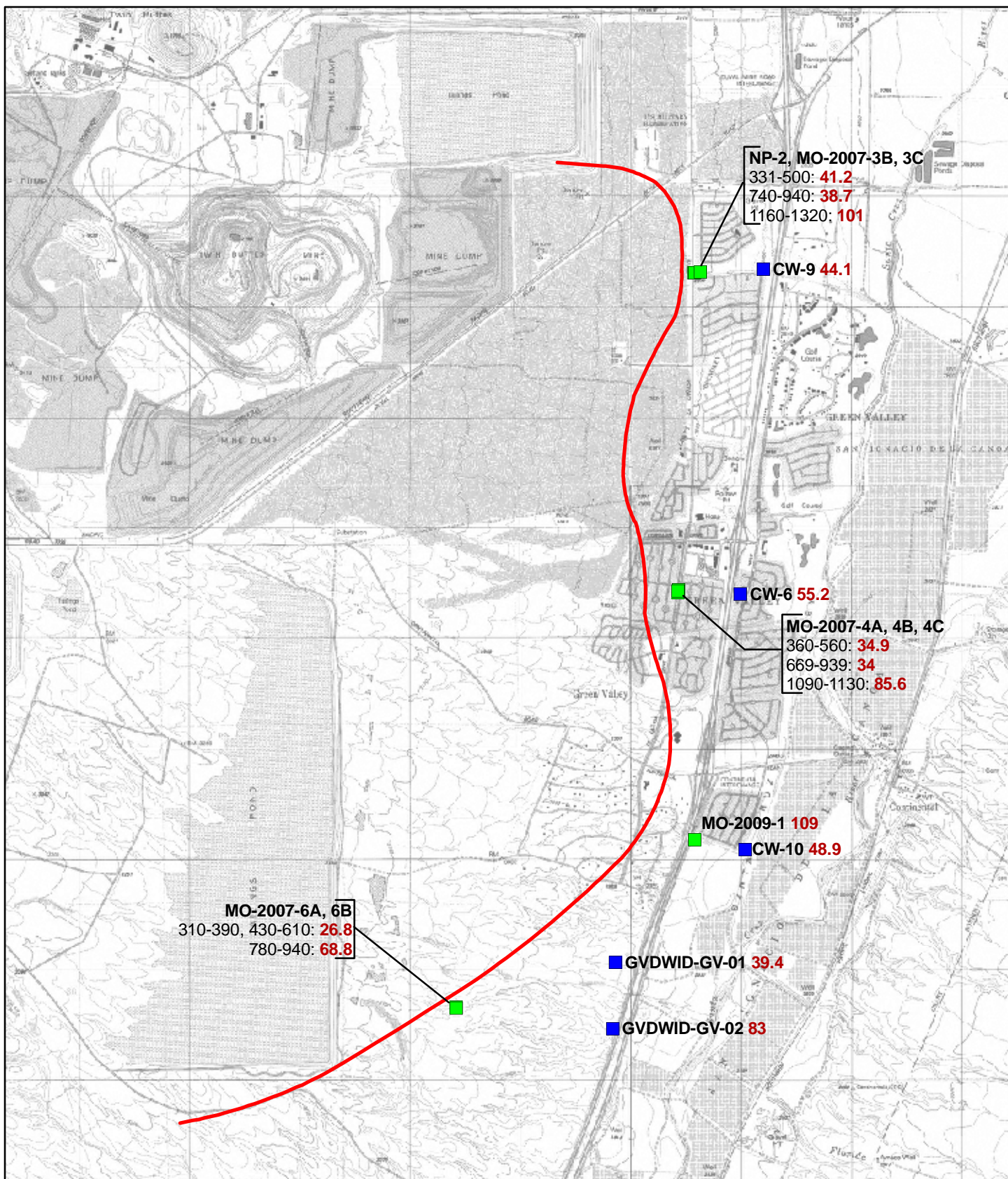
Notes:

Projection:UTM NAD83 Zone 12N

Figure 2

Sulfate Concentrations in Groundwater

Second Quarter 2010



Legend

— 250 mg/L Sulfate Concentration Contour

● **CW-9** Well ID
44.1 Sulfate Concentration (mg/L)
 Duplicate Results Separated by "/"

Well Symbols

● Well
 ■ Water Supply Well
 ■ Sentinel Well

0 2,000 4,000
 Feet

CLEAR CREEK ASSOCIATES

File ID 055039-036

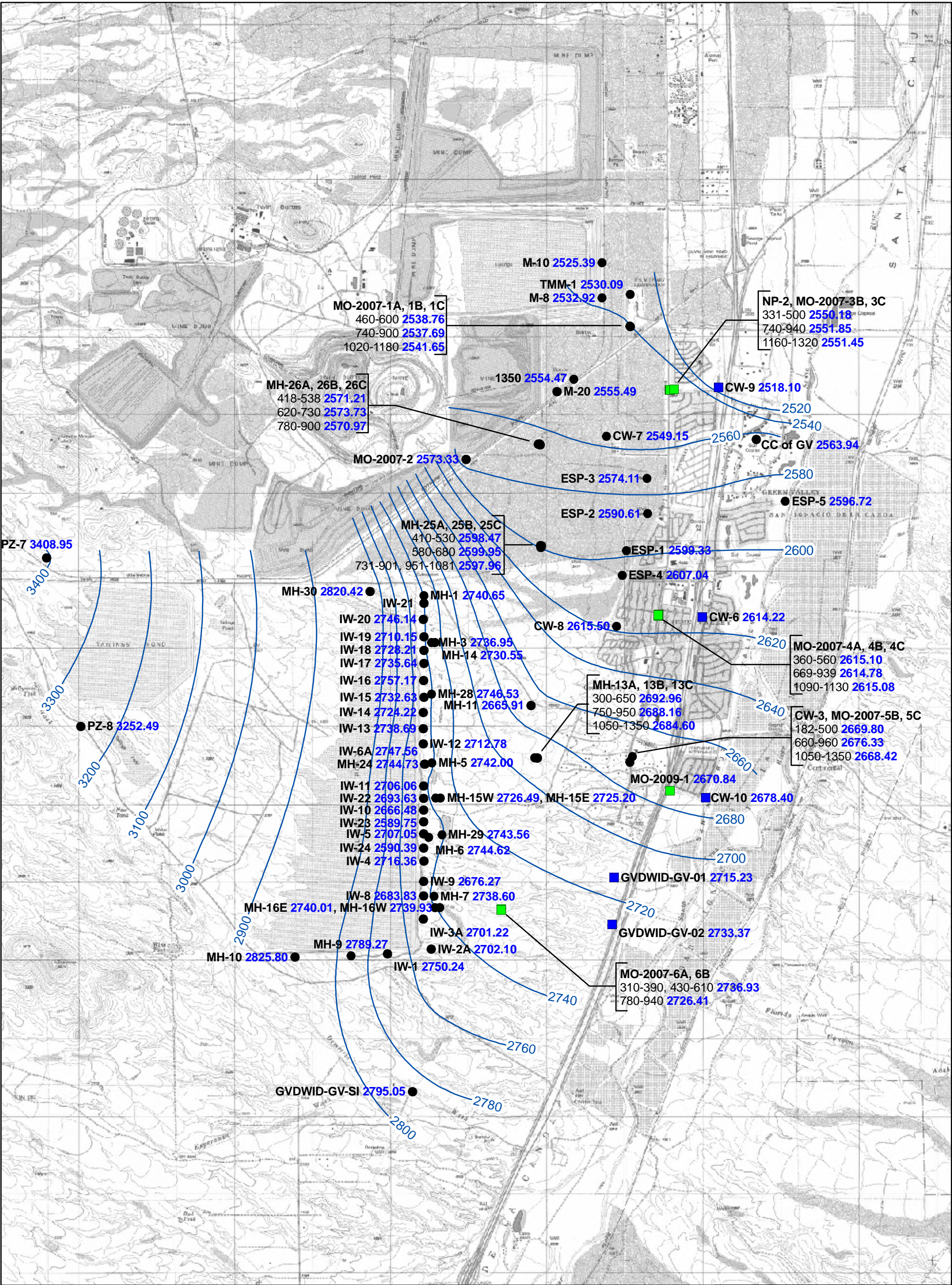
Date 9/1/10

Co-Located Wells

— Screened Interval (ft bls): **Sulfate Concentration (mg/L)**



Figure 3
 Sulfate Concentrations
 in Groundwater
 for Third Quarter 2010



Legend

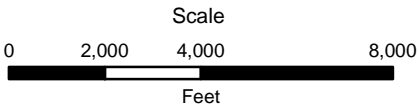
● **CW-3** Well ID
● **2669.80** Groundwater Elevation ft (amsl)

Well Symbols

- Well
- Sentinel Well
- Drinking Water Supply Well

Co-Located Wells

— Screened Interval (ft bls): **Grounwater Elevation (ft amsl)**



Notes:

Projection:UTM NAD83 Zone 12N
IW Wells not used for contouring



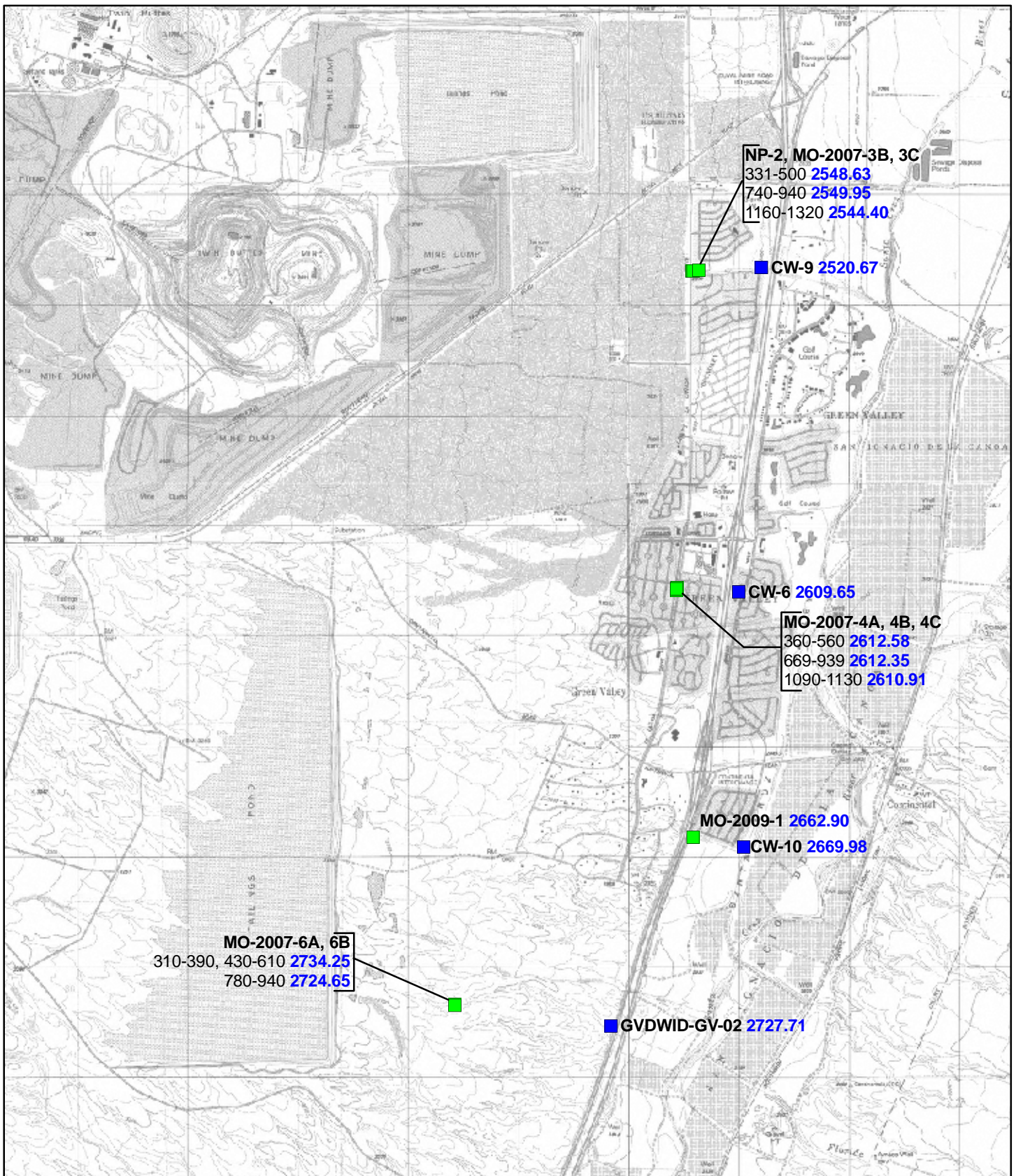
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Figure 4
Groundwater Elevations for
Second Quarter 2010



Legend

● **CW-9** Well ID
2520.67 Grounwater Elevation (ft amsl)

Well Symbols
 ● Well
 ■ Water Supply Well
 ■ Sentinel Well

0 2,000 4,000
 Feet

CLEAR CREEK ASSOCIATES

File ID 055039-037
 Date 8/1/10

Co-Located Wells

— Screened Interval (ft bls): **Grounwater Elevation (ft amsl)**



Figure 5
 Grounwater Elevations
 for Third Quarter 2010

APPENDIX A

DATA VERIFICATION REPORT

**GROUNDWATER SAMPLES COLLECTED BY FREEPORT-MCMORAN
SIERRITA INC. DURING SECOND AND THIRD QUARTERS 2010**

APPENDIX A
DATA VERIFICATION REPORT

**GROUNDWATER SAMPLES COLLECTED BY FREEPORT-MCMORAN
SIERRITA INC. DURING THE SECOND AND THIRD QUARTERS 2010**

Prepared for:

FREEPORT-MCMORAN SIERRITA INC.
6200 West Duval Mine Road
Green Valley, Arizona 85614

Prepared by:

Clear Creek Associates, P.L.C.
221 North Court Avenue Suite 101
Tucson, Arizona 85701

October 1, 2010

PRIVILEGED AND CONFIDENTIAL
Prepared at the Direction of Legal Counsel

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1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the second and third quarters 2010 by Freeport-McMoRan Sierrita Inc. (Sierrita) pursuant to Mitigation Order on Consent Docket No. P-50-06. All analytical results for groundwater samples collected during this reporting period were provided to Sierrita by ACZ Laboratories, Inc. (ACZ) for preparation of the Semiannual Groundwater Monitoring Report.

This report does not review field sampling or sample handling procedures for Sierrita. Sierrita collected samples following the methods in the *Quality Assurance/Quality Control (QA/QC) Plan for Water Monitoring, Phelps Dodge Sierrita, Inc.* (PDSI, 2005) in Appendix E of the Work Plan (Hydro Geo Chem, Inc. [HGC], 2006). Additionally, laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) given in the Quality Assurance Project Plan (QAPP) (HGC, 2006).

Appendix B of the main text of this report contains laboratory reports for samples collected by Sierrita including COC forms, laboratory correspondence, QC summaries, data qualifiers, and any case narratives. The analytical results for all 96 samples collected are contained in 15 reports having the ACZ Project numbers identified in the following table.

The results of the internal QA/QC tests performed by ACZ also are presented with the laboratory reports included in Appendix B. Based on the results of surrogate spike recoveries, matrix spike/recovery and matrix spike duplicate tests, ACZ did not advise of any modifications that should be made regarding the usability and data validation status of the laboratory test results.

ACZ Project ID	Wells Reported
72 Samples were collected during the second quarter 2010 8 Duplicate sample were collected during the second quarter 2010	
L81629	IW-22, IW-23, IW-24, IW-3A, IW-4, IW-5, IW-6A, IW-8, IW-9, DUP20100412A
L81637	GV-1, GV-2, SIWELL, MO-2007-2, MO-2007-3B, MO-2007-3C, MO-2007-4A, MO-2007-4B, MO-2007-4C, DUP2010413A
L81638	IW-1, IW-10, IW-11, IW-13, IW-15, IW-16, IW-17, IW-19, IW-2A, IW-21
L81639	MH-25A, MH-25B, MH-25C, MH-26A, MH-26B, MH-26C, DUP20100412B, DUP20100413B, MH-30
L81640	MH-28, MH-29
L81753	MH-13A, MH-13B, MH-13C, IW-14
L81869	MO-2007-2, DUP2010413A
L81884	MO-2007-1A, MO-2007-1B, MO-2007-1C, MO-2009-1, TMM-1, MO-2007-6A, MO-2007-6B, HAVENGOLF, CCGV, PZ-8
L81885	CW-3, NP-2, PZ-7, MO-2007-5B, MO-2007-5C, ESP-1, ESP-2, ESP-3, ESP-4, DUP20100421A, DUP20100427B, DUP20100428A
L81886	MH-10, EQ BLANK, FIELD BLANK, MH-11, IW-12, IW018, IW-20, DUP201000426A
L82534	CW-6, CW-9, CW-10, M-8, M-20
L82567-01	M-10,
L82739-01	M-9
14 Samples were collected during the third quarter 2010 2 Duplicate sample were collected during the third quarter 2010	
L83538	MO-2008-3B, MO-2007-3C, MO-2007-4A, MO-2007-4B, MO-2007-4C, DUP20100721A, CW-10, CW-6, CW-9, GV-1, GV-2
L83790	NP-2, MO-2007-6B, MO-2007-6A, MO-2009-1, DUP20100810A

2. LABORATORY QUALITY CONTROL

As specified in the QAPP, laboratory QC was maintained for all analysis through proper licensure, the use of approved analytical methods, QC measurements, appropriate turnaround time for analysis (timeliness), method detection limits (MDLs), and practical quantitation limits (PQLs). Each of these controls is discussed in the following subsections.

The review of laboratory QC included a review to identify any qualified data and an assessment to determine their significance. Additionally, the laboratory QC summaries were reviewed to verify that results met QA criteria.

2.1 Licensure

ACZ is licensed with the Arizona Department of Health Services (license number AZ0102) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

2.2 Analytical Methods

The following methods were used for sulfate analysis during this monitoring period:

- U.S. Environmental Protection Agency (EPA) 300.0 (Ion-Chromatography)
- EPA 375.4 (Turbidimetric)

2.3 Method Detection Limits (MDLs) and Practical Quantification Limits (PQLs)

The MDLs and PQLs of the analytical methods used by ACZ are shown in the following table. The MDLs for analyses of samples were equal to or less than the target MDLs identified in the QAPP.

Method	MDL (mg/L)	PQL (mg/L)	Target MDL ¹ (mg/L)
EPA 300.0	0.5	3	10
EPA 375.4	1	5	10

mg/L = milligrams per liter

¹ Target MDL from Table E.2 of QAPP

2.4 Timeliness

Holding time was derived from the EPA methods utilized and were calculated beginning from the time of sample collection. All samples submitted for sulfate analysis were analyzed within the twenty-eight day holding time specified by each of the methods used for analysis.

2.5 Quality Control Measurements

The following QC samples were prepared and analyzed:

- Preparation blanks, calibration blanks, and calibration verification standards
- Analytical spikes and analytical spike duplicates
- Laboratory control samples
- Laboratory duplicate samples

2.5.1 Preparation Blanks, Calibration Blanks, and Calibration Verification Standards

Preparation blanks were run with each group of samples submitted for sulfate analyses. Preparation blanks were prepared from analyte-free water and treated as routine samples. Analytical results of the preparation blanks showed that no target analytes were detected at the indicated MDL.

Initial calibration blanks and initial calibration verification standards were analyzed prior to each group of samples submitted for sulfate analyses. The results of each initial calibration blank analyzed showed no detections of the target analyte. Analytical results for the initial calibration verification standards and laboratory fortified blanks showed percent recoveries that were within the acceptance criteria specified by the ACZ QA plan and the QAPP.

2.5.2 Analytical Spikes and Analytical Spike Duplicates

Analytical spike and spike duplicate samples were analyzed for 10 percent of the samples that were analyzed. The spike samples were prepared by adding a sulfate spike to one randomly chosen sample out of every ten samples analyzed. Spike recoveries for most analyses were between 90 and 110 percent. Instances in which analytical spike recoveries were high, low or unusable were qualified with an “M1”, “M2” or “M3” flag, respectively. In each case where a qualifier was used the method control sample recovery was acceptable. The method control samples were prepared by adding a sulfate spike to de-ionized water.

2.5.3 Laboratory Control Samples

Laboratory control samples were run for each group of samples submitted for sulfate analysis following the gravimetric method of analysis. Recoveries for all laboratory control samples were within the acceptance criteria specified by ACZ.

2.5.4 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were also reviewed as part of this quality data verification report. Field duplicate samples are discussed in Section 3.1. The relative percent difference (RPDs) for most laboratory duplicate samples were within 20 percent, which is the tolerance range set by the laboratory. In some instances, the data were qualified with an “RA” flag indicating that the RPD was not used for data validation because the sample concentration was less than ten times the MDL, which is too low for accurate evaluation according to ACZ. In cases where the RPD could be calculated, the results met QA criteria and demonstrate an appropriate level of precision in laboratory analysis of these samples.

3. DATA QUALITY INDICATORS

The QAPP provides several DQIs for assessing the overall quality of the data. These DQIs include the following:

- Precision
- Bias
- Accuracy
- Representativeness
- Comparability
- Completeness
- Sensitivity

Each of these DQIs is discussed below in relation to the fourth quarter 2009 and first quarter 2010 groundwater sampling and analysis conducted by Sierrita.

3.1 Precision

Precision indicates how well a measurement can be reproduced. Precision is quantified by calculating the RPD between duplicate samples. For the purposes of QA/QC, precision was quantified by calculating the RPDs between duplicates among the following groups of duplicate samples:

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Sections 2.5.2 and 2.5.4, there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period, a total of 10 field duplicate samples were collected by Sierrita for filtered sulfate analysis (DUP20100412A, DUP20100412B, DUP20100413A, DUP20100413B, DUP20100421A, DUP20100426A, DUP20100427B, DUP20100428A, DUP20100721A, and DUP20100810A). The collection of 10 field duplicate samples meets the QA/QC goal of collecting one duplicate sample for every ten groundwater samples collected, as stated in Section 6 of Sierrita's quality assurance quality control plan, and

exceeds the goal of collecting one duplicated sample for every twenty groundwater samples as stated in the Work Plan (HGC, 2006)

Results of the field duplicate samples collected are provided in the table below. The range of RPD values was between 0 and 7.05 percent, all within the 20 percent acceptance criteria for field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is met.

ACZ Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
L81629	IW-9	DUP20100412A	1800	1800	0.00%
L81639	IW-5	DUP20100412B	1800	1700	5.71%
L81637	MO-2007-2	DUP20100413A	439	450	2.47%
L81639	MH-26C	DUP20100413B	770	780	1.29%
L81885	MO-2007-6B	DUP20100421A	57.9	57.9	0.00%
L81886	MH-10	DUP20100426A	1500	1400	6.90%
L81885	MO-2007-5C	DUP20100427B	245	248	1.22%
L81885	ESP-4	DUP20100428A	558	520	7.05%
L83538	MO-2007-4B	DUP20100721A	34	34.9	2.61%
L83790	MO-2007-6B	DUP20100810A	68.8	68.6	0.29%

mg/L = milligrams per liter

RPD = Relative Percent Difference

3.2 Bias

Bias is a systematic distortion of measurements causing consistent errors in one direction. Bias is managed in this data set by the consistent application of standardized sample collection and analysis procedures.

3.3 Accuracy

Accuracy is a measure of the agreement of a measurement to a known value and is measured using the recoveries from laboratory control samples. As discussed in Sections 2.5.1, 2.5.2, and 2.5.3 respectively, there were no significant exceedances of the recovery QA criteria for any of the calibration standards, analytical spikes, or laboratory control standards. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

3.4 Representativeness

All samples were taken from locations specified in the Pre-implementation Monitoring Plan (Sierrita, 2009) using sampling procedures specified in the QAPP. Therefore, the samples are judged to provide a good representation of groundwater quality at the locations. The analytical data are judged to be representative of groundwater conditions because the analyses used standard procedures and methods that met QA/QC guidelines of the QAPP.

3.5 Comparability

All samples were collected using standardized procedures (PDSI, 2005) and were analyzed by ACZ using standardized methods. Insofar as standardized sample collection and analytical methods are adhered to, the sample results should be comparable.

3.6 Completeness

All samples collected by Sierrita were subsequently analyzed and reported by ACZ. All samples analyzed by ACZ are judged to satisfy the QA/QC criteria for this project and are deemed usable for aquifer characterization. Thus, the completeness of analytical results is 100 percent.

3.7 Sensitivity

The analytical methods used to analyze the samples meet the MDL requirements specified in Table E.2 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

4. REFERENCES

- Hydro Geo Chem, Inc. 2006. Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Phelps Dodge Sierrita Tailing Impoundment, Pima County, Arizona. August 11, 2006, revised October 31, 2006.
- Phelps Dodge Sierrita, Inc. 2005. Quality Assurance/Quality Control Plan for Water Monitoring, Phelps Dodge Sierrita, Inc. June 2005.
- Sierrita. 2009. Letter from Ned Hall (Sierrita) to Cynthia Campbell (ADEQ) Regarding Mitigation Order on Consent, Docket P-50-06, Response to ADEQ Comments on Recommended Groundwater Monitoring for Sulfate. May 15, 2009.

APPENDIX B
ANALYTICAL DATA REPORTS

April 28, 2010

Report to:

Aaron Hilshorst
FMI Gold & Copper - Sierrita
6200 W. Duval Mine Rd.
Green Valley, AZ 85614

Bill to:

Accounts Payable
FMI Gold & Copper - Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS01BN

ACZ Project ID: L81637

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 16, 2010. This project has been assigned to ACZ's project number, L81637. Please reference this number in all future inquiries.

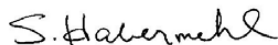
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81637. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 May 28, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: GV-1

ACZ Sample ID: **L81637-01**

Date Sampled: 04/01/10 12:54

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	48.5		*	mg/L	0.5	3	04/23/10 21:48	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: GV-2

ACZ Sample ID: **L81637-02**

Date Sampled: 04/01/10 13:28

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	99.5			mg/L	0.5	3	04/23/10 22:10	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: SIWELL

ACZ Sample ID: **L81637-03**

Date Sampled: 04/01/10 14:09

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	6.9			mg/L	0.5	3	04/23/10 23:13	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-2

ACZ Sample ID: **L81637-04**

Date Sampled: 04/13/10 07:47

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	385			mg/L	5	30	04/26/10 18:16	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-3B

ACZ Sample ID: **L81637-05**

Date Sampled: 04/14/10 12:03

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	40.4			mg/L	0.5	3	04/23/10 23:55	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-3C

ACZ Sample ID: **L81637-06**

Date Sampled: 04/14/10 13:12

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	110			mg/L	3	10	04/26/10 18:37	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-4A

ACZ Sample ID: **L81637-07**

Date Sampled: 04/14/10 09:48

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	37.0			mg/L	0.5	3	04/24/10 1:20	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-4B

ACZ Sample ID: **L81637-08**

Date Sampled: 04/14/10 08:50

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	35.1			mg/L	0.5	3	04/24/10 1:41	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-4C

ACZ Sample ID: **L81637-09**

Date Sampled: 04/14/10 09:04

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	87.7			mg/L	0.5	3	04/24/10 2:02	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100413A

ACZ Sample ID: **L81637-10**

Date Sampled: 04/13/10 00:00

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	449			mg/L	5	30	04/26/10 18:58	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81637**

Project ID: ZS01BN

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280755													
WG280755 CV	ICV	04/14/10 17:55	WI100301-1	50.2		50.71	mg/L	101	90	110			
WG280755 CB	ICB	04/14/10 18:16				U	mg/L		-1.5	1.5			
WG281188													
L81637-02DUP	DUP	04/23/10 22:52			99.5	99.73	mg/L				0.2	20	
WG281188LFB	LFB	04/26/10 15:48	WI100407-3	30		29.06	mg/L	96.9	90	110			
L81602-05AS	AS	04/26/10 16:30	WI100407-3	150	19	165.4	mg/L	97.6	90	110			
L81602-05DUP	DUP	04/26/10 16:52			19	20.5	mg/L				7.6	20	RA
L81637-02AS	AS	04/26/10 17:55	WI100407-3	150	90	225.5	mg/L	90.3	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81637**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81637-01	WG281188	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81637**

No certification qualifiers associated with this analysis

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81637
Date Received: 04/16/2010 11:20
Received By: gac
Date Printed: 4/16/2010

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)
2586		5.7	11

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

Notes

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81637
Date Received: 04/16/2010 11:20
Received By: gac
Date Printed: 4/16/2010

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
L81637-01	GV-1									X		<input type="checkbox"/>
L81637-02	GV-2									X		<input type="checkbox"/>
L81637-03	SIWELL									X		<input type="checkbox"/>
L81637-04	MO-2007-2									X		<input type="checkbox"/>
L81637-05	MO-2007-3B									X		<input type="checkbox"/>
L81637-06	MO-2007-3C									X		<input type="checkbox"/>
L81637-07	MO-2007-4A									X		<input type="checkbox"/>
L81637-08	MO-2007-4B									X		<input type="checkbox"/>
L81637-09	MO-2007-4C									X		<input type="checkbox"/>
L81637-10	DUP20100413A									X		<input type="checkbox"/>

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

181637



Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Aaron Hilshorst
Company: Freeport-McMoRan Sierrita Inc.
E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road
Green Valley, AZ 85614
Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau
Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com
Telephone: 520-622-3222

Invoice to:

Name:
Company:
E-mail:

Address:
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.

Are samples for CO DW Compliance Monitoring?

YES ☐
NO ☒

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:
Project/PO #: ZS01BN
Reporting state for compliance testing:
Sampler's Name:
Are any samples NRC licensable material? Yes No

Quote #	Project/PO #	Reporting state	Sampler's Name	Are any samples NRC licensable material?	Yes	No	Matrix	# of Containers	SO4 by EPA 300 or EPA 375										
GV-1	4/1/10 12:54	GW	1	X															
GV-2	4/1/10 13:28	GW	1	X															
SIWELL	4/1/10 14:09	GW	1	X															
MO-2007-2	4/13/10 7:47	GW	1	X															
MO-2007-3B	4/14/10 12:03	GW	1	X															
MO-2007-3C	4/14/10 13:12	GW	1	X															
MO-2007-4A	4/14/10 09:48	GW	1	X															
MO-2007-4B	4/14/10 08:50	GW	1	X															
MO-2007-4C	4/14/10 09:04	GW	1	X															
DUP20100413A	4/13/10	GW	1	X															

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
GV-1	4/1/10 12:54	GW
GV-2	4/1/10 13:28	GW
SIWELL	4/1/10 14:09	GW
MO-2007-2	4/13/10 7:47	GW
MO-2007-3B	4/14/10 12:03	GW
MO-2007-3C	4/14/10 13:12	GW
MO-2007-4A	4/14/10 09:48	GW
MO-2007-4B	4/14/10 08:50	GW
MO-2007-4C	4/14/10 09:04	GW
DUP20100413A	4/13/10	GW

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7134

[Signature]

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>[Signature]</i>	4/15/10 15:30	<i>[Signature]</i>	4/16/10 11:20

FRMAD050.01.15.09

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

May 13, 2010

Report to:

Aaron Hilshorst
FMI Gold & Copper - Sierrita
6200 W. Duval Mine Rd.
Green Valley, AZ 85614

Bill to:

Accounts Payable
FMI Gold & Copper - Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS01BN

ACZ Project ID: L81869

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 30, 2010. This project has been assigned to ACZ's project number, L81869. Please reference this number in all future inquiries.

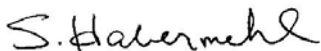
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81869. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 June 13, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-2

ACZ Sample ID: **L81869-01**

Date Sampled: 04/13/10 07:47

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	439			mg/L	5	30	05/09/10 13:42	aml

Note: This report is for the re-analysis of the sample previously reported as ACZ project L81637-04.

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100413A

ACZ Sample ID: **L81869-02**

Date Sampled: 04/13/10 00:00

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	450			mg/L	5	30	05/09/10 14:45	aml

Note: This report is for the re-analysis of the sample previously reported as ACZ project L81637-10.

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81869**

Project ID: ZS01BN

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280755													
WG280755ICV	ICV	04/14/10 17:55	WI100301-1	50.2		50.71	mg/L	101	90	110			
WG280755ICB	ICB	04/14/10 18:16				U	mg/L		-1.5	1.5			
WG282004													
WG282004LFB	LFB	05/07/10 20:47	WI100407-3	30		29.31	mg/L	97.7	90	110			
L81869-01AS	AS	05/09/10 14:03	WI100407-3	300	439	766.7	mg/L	109.2	90	110			
L81869-01DUP	DUP	05/09/10 14:24			439	495.5	mg/L				12.1	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81869**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81869**

No certification qualifiers associated with this analysis

ACZ Project ID:
 Date Received:
 Received By:
 Date Printed: 5/2/2010

Receipt Verification

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

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

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

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)

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

Notes

ACZ Project ID:

Date Received:

Received By:

Date Printed: 5/2/2010

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
												<input type="checkbox"/>

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: _____

Relog C81869

~~C8163~~ wpc 8 wpc 430.10

ACZ Laboratories, Inc.				CHAIN of CUSTODY														
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493																		
Report to:																		
Name: Aaron Hilshorst				Address: 6200 W. Duval Mine Road														
Company: Freeport-McMoRan Sierrita Inc.				Green Valley, AZ 85614														
E-mail: aaron_hilshorst@fmi.com				Telephone: 520-648-8844														
Copy of Report to:																		
Name: Ben Daigneau				E-mail: bdaigneau@clearcreekassociates.com														
Company: Clear Creek Associates				Telephone: 520-622-3222														
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 <input type="checkbox"/>											
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.							NO <input type="checkbox"/>											
Are samples for CO DW Compliance Monitoring?							YES <input type="checkbox"/>											
If yes, please include state forms. Results will be reported to PQL.							NO <input checked="" type="checkbox"/>											
PROJECT INFORMATION				ANALYSES REQUESTED (attach list or use quote number)														
Quote #:				# of Containers	SO4 by EPA 300 or EPA 375													
Project/PO #: ZS01BN																		
Reporting state for compliance testing:																		
Sampler's Name:																		
Are any samples NRC licensable material? Yes No																		
SAMPLE IDENTIFICATION		DATE:TIME		Matrix														
GV-1		4/1/10 12:54		GW	1	X												
GV-2		4/1/10 13:28		GW	1	X												
SIWELL		4/1/10 14:09		GW	1	X												
MO-2007-2		4/13/10 7:47		GW	1	X												
MO-2007-3B		4/14/10 12:03		GW	1	X												
MO-2007-3C		4/14/10 13:12		GW	1	X												
MO-2007-4A		4/14/10 09:48		GW	1	X												
MO-2007-4B		4/14/10 08:50		GW	1	X												
MO-2007-4C		4/14/10 09:04		GW	1	X												
DUP20100413A		4/13/10		GW	1	X												
Matrix		SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)																
REMARKS																		
UPS Tracking # 1Z 867 7E4 23 1000 7134																		
Please refer to ACZ's terms & conditions located on the reverse side of this COC.																		
RELINQUISHED BY:				DATE:TIME				RECEIVED BY:				DATE:TIME						
T. K. [Signature]				4/15/10 15:30				[Signature]				4/16/10 11:20						

FRMAD050.01.15.09

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

May 20, 2010

Report to:

Aaron Hilshorst
FMI Gold & Copper - Sierrita
6200 W. Duval Mine Rd.
Green Valley, AZ 85614

Bill to:

Accounts Payable
FMI Gold & Copper - Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS01BN

ACZ Project ID: L81884

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 30, 2010. This project has been assigned to ACZ's project number, L81884. Please reference this number in all future inquiries.

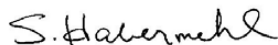
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81884. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 June 20, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-1A

ACZ Sample ID: **L81884-01**

Date Sampled: 04/16/10 09:20

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	18.5	H	*	mg/L	0.5	3	05/17/10 21:58	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-1B

ACZ Sample ID: **L81884-02**

Date Sampled: 04/16/10 08:41

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	230	H	*	mg/L	3	10	05/17/10 23:01	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-1C

ACZ Sample ID: **L81884-03**

Date Sampled: 04/16/10 09:47

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	320	H	*	mg/L	5	30	05/17/10 23:22	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2009-1

ACZ Sample ID: **L81884-04**

Date Sampled: 04/20/10 11:49

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	99		*	mg/L	3	10	05/17/10 23:43	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: TMM-1

ACZ Sample ID: **L81884-05**

Date Sampled: 04/20/10 10:07

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	12.0		*	mg/L	0.5	3	05/18/10 0:05	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-6A

ACZ Sample ID: **L81884-06**

Date Sampled: 04/21/10 12:31

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.7		*	mg/L	0.5	3	05/18/10 0:26	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-6B

ACZ Sample ID: **L81884-07**

Date Sampled: 04/21/10 13:08

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	57.9		*	mg/L	0.5	3	05/18/10 0:47	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: HAVENGOLF

ACZ Sample ID: **L81884-08**

Date Sampled: 04/22/10 09:02

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	109		*	mg/L	3	10	05/18/10 1:50	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: CCGV

ACZ Sample ID: **L81884-09**

Date Sampled: 04/22/10 10:43

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	95		*	mg/L	3	10	05/18/10 2:11	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: PZ-8

ACZ Sample ID: **L81884-10**

Date Sampled: 04/22/10 07:35

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	305		*	mg/L	5	30	05/18/10 2:32	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - SierritaACZ Project ID: **L81884**

Project ID: ZS01BN

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280755													
WG280755ICV	ICV	04/14/10 17:55	WI100301-1	50.2		50.71	mg/L	101	90	110			
WG280755ICB	ICB	04/14/10 18:16				U	mg/L		-1.5	1.5			
WG282438													
L81884-01AS	AS	05/17/10 22:19	WI100407-3	30	18.5	52.78	mg/L	114.3	90	110			M1
L81884-01DUP	DUP	05/17/10 22:40			18.5	18.54	mg/L				0.2	20	
WG282438LFB	LFB	05/19/10 12:30	WI100407-3	30		32.43	mg/L	108.1	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81884**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81884-01	WG282438	Sulfate	M300.0 - Ion Chromatography	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-02	WG282438	Sulfate	M300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-03	WG282438	Sulfate	M300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
			M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-04	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-05	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-06	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-07	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-08	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-09	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81884-10	WG282438	Sulfate	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81884**

No certification qualifiers associated with this analysis

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81884
Date Received: 04/30/2010 10:50
Received By: gac
Date Printed: 5/2/2010

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)
2037		1.6	15

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

Notes

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81884
Date Received: 04/30/2010 10:50
Received By: gac
Date Printed: 5/2/2010

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
L81884-01	MO-2007-1A									X		<input type="checkbox"/>
L81884-02	MO-2007-1B									X		<input type="checkbox"/>
L81884-03	MO-2007-1C									X		<input type="checkbox"/>
L81884-04	MO-2009-1									X		<input type="checkbox"/>
L81884-05	TMM-1									X		<input type="checkbox"/>
L81884-06	MO-2007-6A									X		<input type="checkbox"/>
L81884-07	MO-2007-6B									X		<input type="checkbox"/>
L81884-08	HAVENGOLF									X		<input type="checkbox"/>
L81884-09	CCGV									X		<input type="checkbox"/>
L81884-10	PZ-8									X		<input type="checkbox"/>

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



Laboratories, Inc.

L81884

CHAIN of CUSTODY

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

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

X

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01BN

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION DATE: TIME Matrix

SAMPLE IDENTIFICATION	DATE: TIME	Matrix	# of Containers	SO4 by EPA 300 or EPA 375															
MO-2007-1A	4/16/10 09:20	GW	1	X															
MO-2007-1B	4/16/10 08:41	GW	1	X															
MO-2007-1C	4/16/10 09:47	GW	1	X															
MO-2009-1	4/20/10 11:49	GW	1	X															
TMM-1	4/20/10 10:07	GW	1	X															
MO-2007-6A	4/21/10 12:31	GW	1	X															
MO-2007-6B	4/21/10 13:08	GW	1	X															
HAVENGOLF	4/22/10 09:02	GW	1	X															
CCGV	4/22/10 10:43	GW	1	X															
PZ-8	4/22/10 07:35	GW	1	X															

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7509

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

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

	4-29-10 15:30		4-30-10 10:50

FRMAD050.01.15.09

White - Return with sample.

Yellow - Retain for your records.

May 25, 2010

Report to:

Aaron Hilshorst
FMI Gold & Copper - Sierrita
6200 W. Duval Mine Rd.
Green Valley, AZ 85614

Bill to:

Accounts Payable
FMI Gold & Copper - Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS01BN

ACZ Project ID: L81885

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 30, 2010. This project has been assigned to ACZ's project number, L81885. Please reference this number in all future inquiries.

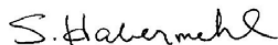
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81885. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 June 25, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: CW-3

ACZ Sample ID: **L81885-01**

Date Sampled: 04/22/10 14:10

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	57.7			mg/L	0.5	3	05/18/10 2:53	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: NP-2

ACZ Sample ID: **L81885-02**

Date Sampled: 04/22/10 15:40

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	41.9			mg/L	0.5	3	05/18/10 3:57	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: PZ-7

ACZ Sample ID: **L81885-03**

Date Sampled: 04/23/10 12:26

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	432			mg/L	5	30	05/18/10 4:18	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-5B

ACZ Sample ID: **L81885-04**

Date Sampled: 04/27/10 08:59

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	427			mg/L	5	30	05/18/10 4:39	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MO-2007-5C

ACZ Sample ID: **L81885-05**

Date Sampled: 04/27/10 14:23

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	245			mg/L	5	30	05/18/10 5:00	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: ESP-1

ACZ Sample ID: **L81885-06**

Date Sampled: 04/28/10 10:48

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	204			mg/L	5	30	05/18/10 6:03	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: ESP-2

ACZ Sample ID: **L81885-07**

Date Sampled: 04/28/10 09:57

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	28.7			mg/L	0.5	3	05/18/10 6:25	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: ESP-3

ACZ Sample ID: **L81885-08**

Date Sampled: 04/28/10 11:31

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	35.8			mg/L	0.5	3	05/18/10 6:46	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: ESP-4

ACZ Sample ID: **L81885-09**

Date Sampled: 04/28/10 13:25

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	558			mg/L	5	30	05/18/10 7:07	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100421A

ACZ Sample ID: **L81885-10**

Date Sampled: 04/21/10 00:00

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	57.9			mg/L	0.5	3	05/18/10 7:28	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100427B

ACZ Sample ID: **L81885-11**

Date Sampled: 04/27/10 00:00

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	248		*	mg/L	5	30	05/17/10 19:30	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100428A

ACZ Sample ID: **L81885-12**

Date Sampled: 04/28/10 00:00

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	520			mg/L	10	50	05/21/10 11:30	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81885**

Project ID: ZS01BN

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280755													
WG280755 CV	ICV	04/14/10 17:55	WI100301-1	50.2		50.71	mg/L	101	90	110			
WG280755 CB	ICB	04/14/10 18:16				U	mg/L		-1.5	1.5			
WG282257													
WG282257 LFB	LFB	05/12/10 22:09	WI100407-3	30		31.34	mg/L	104.5	90	110			
L81878-05DUP	DUP	05/13/10 3:46			U	U	mg/L				0	20	RA
L81885-11AS	AS	05/17/10 19:51	WI100407-3	300	248	518.5	mg/L	90.2	90	110			
WG282438													
L81885-01AS	AS	05/18/10 3:15	WI100407-3	30	57.7	88.53	mg/L	102.8	90	110			
L81885-01DUP	DUP	05/18/10 3:36			57.7	58.04	mg/L				0.6	20	
WG282438 LFB	LFB	05/19/10 12:30	WI100407-3	30		32.43	mg/L	108.1	90	110			
WG282845													
WG282845 CV	ICV	05/20/10 13:48	WI100301-1	50.2		50.32	mg/L	100.2	90	110			
WG282845 CB	ICB	05/20/10 14:09				U	mg/L		-1.5	1.5			
L81885-12AS	AS	05/21/10 11:51	WI100407-3	600	520	1103	mg/L	97.2	90	110			
WG282845 LFB	LFB	05/21/10 12:34	WI100407-3	30		31.7	mg/L	105.7	90	110			
L81885-12DUP	DUP	05/21/10 16:07			600	594	mg/L				1	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81885**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81885-11	WG282257	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81885**

No certification qualifiers associated with this analysis

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81885
 Date Received: 04/30/2010 10:50
 Received By: gac
 Date Printed: 5/2/2010

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)
2037		1.6	15

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81885
 Date Received: 04/30/2010 10:50
 Received By: gac
 Date Printed: 5/2/2010

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
L81885-01	CW-3									X		<input type="checkbox"/>
L81885-02	NP-2									X		<input type="checkbox"/>
L81885-03	PZ-7									X		<input type="checkbox"/>
L81885-04	MO-2007-5B									X		<input type="checkbox"/>
L81885-05	MO-2007-5C									X		<input type="checkbox"/>
L81885-06	ESP-1									X		<input type="checkbox"/>
L81885-07	ESP-2									X		<input type="checkbox"/>
L81885-08	ESP-3									X		<input type="checkbox"/>
L81885-09	ESP-4									X		<input type="checkbox"/>
L81885-10	DUP20100421A									X		<input type="checkbox"/>
L81885-11	DUP20100427B									X		<input type="checkbox"/>
L81885-12	DUP20100428A									X		<input type="checkbox"/>

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



Laboratories, Inc.

L81885

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

CHAIN of CUSTODY

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

X

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01BN

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

of Containers

SO4 by EPA 300 or EPA 375

CW-3	4/22/10 14:10	GW	1	X															
NP-2	4/22/10 15:40	GW	1	X															
PZ-7	4/23/10 12:26	GW	1	X															
MO-2007-5B	4/27/10 08:59	GW	1	X															
MO-2007-5C	4/27/10 14:23	GW	1	X															
ESP-1	4/28/10 10:48	GW	1	X															
ESP-2	4/28/10 09:57	GW	1	X															
ESP-3	4/28/10 11:31	GW	1	X															
ESP-4	4/28/10 13:25	GW	1	X															
DUP20100421A	4/21/10	GW	1	X															

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7509

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

<i>[Signature]</i>	4-29-10 15:30	<i>[Signature]</i>	4-30-10 10:50

FRMAD050.01.15.09

White - Return with sample.

Yellow - Retain for your records.



Laboratories, Inc.

L81885

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

CHAIN of CUSTODY

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

X

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01BN

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

of Containers

SO4 by EPA 300 or EPA 375

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

DUP20100427B

4/27/10

GW

1

X

DUP20100428A

4/28/10

GW

1

X

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7509

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

RELINQUISHED BY

DATE:TIME

RECEIVED BY:

DATE:TIME

1920 T. Hilshorst

4-29-10 15:30

LEB

4:30:10 10:50

June 15, 2010

Report to:

Aaron Hilshorst
FMI Gold & Copper - Sierrita
6200 W. Duval Mine Rd.
Green Valley, AZ 85614

Bill to:

Accounts Payable
FMI Gold & Copper - Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS01BN

ACZ Project ID: L82534

Aaron Hilshorst:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 04, 2010. This project has been assigned to ACZ's project number, L82534. Please reference this number in all future inquiries.

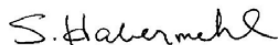
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L82534. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 July 15, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: CW-6

ACZ Sample ID: **L82534-01**

Date Sampled: 05/14/10 09:50

Date Received: 06/04/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	52.1			mg/L	0.5	3	06/11/10 16:54	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: CW-9

ACZ Sample ID: **L82534-02**

Date Sampled: 05/14/10 10:49

Date Received: 06/04/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	44.2			mg/L	0.5	3	06/11/10 17:15	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: CW-10

ACZ Sample ID: **L82534-03**

Date Sampled: 05/14/10 09:05

Date Received: 06/04/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	49.1			mg/L	0.5	3	06/11/10 18:18	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: M-8

ACZ Sample ID: **L82534-04**

Date Sampled: 05/28/10 14:49

Date Received: 06/04/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	45.1			mg/L	0.5	3	06/11/10 18:39	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: M-20

ACZ Sample ID: **L82534-05**

Date Sampled: 05/28/10 11:46

Date Received: 06/04/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	1620			mg/L	30	100	06/14/10 13:39	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82534**

Project ID: ZS01BN

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284084													
WG284084ICV	ICV	06/09/10 20:47	WI100602-2	50.2		49.8	mg/L	99.2	90	110			
WG284084ICB	ICB	06/09/10 21:08				U	mg/L		-1.5	1.5			
WG284161													
WG284161ICV	ICV	06/09/10 20:47	WI100602-2	50.2		49.8	mg/L	99.2	90	110			
WG284161ICB	ICB	06/09/10 21:08				U	mg/L		-1.5	1.5			
WG284161LFB	LFB	06/11/10 14:05	WI100407-3	30		30.43	mg/L	101.4	90	110			
L82403-05DUP	DUP	06/11/10 14:47			30.6	30.63	mg/L				0.1	20	
L82403-06AS	AS	06/11/10 15:29	WI100407-3	30	14.3	42.31	mg/L	93.4	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82534**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82534**

No certification qualifiers associated with this analysis

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L82534
Date Received: 06/04/2010 11:01
Received By: gac
Date Printed: 6/4/2010

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)
1743		1.9	14

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L82534
 Date Received: 06/04/2010 11:01
 Received By: gac
 Date Printed: 6/4/2010

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
L82534-01	CW-6									X		<input type="checkbox"/>
L82534-02	CW-9									X		<input type="checkbox"/>
L82534-03	CW-10									X		<input type="checkbox"/>
L82534-04	M-8									X		<input type="checkbox"/>
L82534-05	M-20									X		<input type="checkbox"/>

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



Laboratories, Inc.

L82534

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

CHAIN of CUSTODY

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

X

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01BN

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

of Containers

SO4 by EPA 300 or EPA 375

CW-6

05/14/10 09:50

GW

1

X

CW-9

05/14/10 10:49

GW

1

X

CW-10

05/14/10 09:05

GW

1

X

M-8

05/28/10 14:49

GW

1

X

M-20

05/28/10 11:46

GW

1

X

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7536

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

[Signature]

6-3-10 15:30

[Signature]

6/4/10 11:01

August 13, 2010

Report to:

Korky Vault

FMI Gold & Copper - Sierrita

6200 W. Duval Mine Rd.

Green Valley, AZ 85614

Bill to:

Accounts Payable

FMI Gold & Copper - Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS023Q

ACZ Project ID: L83538

Korky Vault:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 30, 2010. This project has been assigned to ACZ's project number, L83538. Please reference this number in all future inquiries.

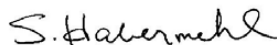
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L83538. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 13, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold Copper - Sierrita

August 13, 2010

Project ID: ZS023Q

ACZ Project ID: L83538

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 11 ground water samples from FMI Gold & Copper - Sierrita on July 30, 2010. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L83538. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Q1 – Sample thermal preservation criteria was not met. The cooler used for sample storage was out of specification from approximately 2000hrs, 8/2/2010, to approximately 1400hrs, 8/4/2010. Cooler measurements fluctuated significantly during this time period, with a maximum temperature measurement of 11.5 °C. ACZ believes actual sample temperatures exhibited less variation and a lower maximum temperature because of increased volume compared to the liquid medium the measurement probe is immersed in and the insulative effect of being stored in tightly packed sample bins. The impact on data is gauged minimal or negligible in ACZ's assessment. Preventative measures are being implemented to preclude recurrence of a similar event.

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-3B

ACZ Sample ID: **L83538-01**

Date Sampled: 07/21/10 08:35

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	38.7		*	mg/L	0.5	3	08/06/10 5:45	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-3C

ACZ Sample ID: **L83538-02**

Date Sampled: 07/21/10 09:20

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	101		*	mg/L	3	10	08/07/10 18:40	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-4A

ACZ Sample ID: **L83538-03**

Date Sampled: 07/21/10 12:56

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.9		*	mg/L	0.5	3	08/06/10 7:10	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-4B

ACZ Sample ID: **L83538-04**

Date Sampled: 07/21/10 12:01

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.0		*	mg/L	0.5	3	08/06/10 7:31	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-4C

ACZ Sample ID: **L83538-05**

Date Sampled: 07/21/10 12:20

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	85.6		*	mg/L	0.5	3	08/06/10 7:52	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: DUP20100721A

ACZ Sample ID: **L83538-06**

Date Sampled: 07/21/10 00:00

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	34.9		*	mg/L	0.5	3	08/06/10 8:13	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: CW-10

ACZ Sample ID: **L83538-07**

Date Sampled: 07/27/10 08:43

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	48.9		*	mg/L	0.5	3	08/06/10 8:34	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: CW-6

ACZ Sample ID: **L83538-08**

Date Sampled: 07/27/10 09:58

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	55.2		*	mg/L	0.5	3	08/06/10 9:38	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: CW-9

ACZ Sample ID: **L83538-09**

Date Sampled: 07/27/10 10:55

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	44.1		*	mg/L	0.5	3	08/06/10 9:59	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: GV-1

ACZ Sample ID: **L83538-10**

Date Sampled: 07/28/10 10:10

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	39.4		*	mg/L	0.5	3	08/06/10 10:20	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: GV-2

ACZ Sample ID: **L83538-11**

Date Sampled: 07/28/10 10:46

Date Received: 07/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	83			mg/L	3	10	08/10/10 17:07	aml

Arizona license number: AZ0102

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.
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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.
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- (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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L83538**

Project ID: **ZS023Q**

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG286894													
WG286894 CV	ICV	07/28/10 19:43	WI100602-2	50.2		50.4	mg/L	100.4	90	110			
WG286894 CB	ICB	07/28/10 20:04				U	mg/L		-1.5	1.5			
WG287385													
WG287385LFB	LFB	08/06/10 5:24	WI100707-9	30		32.62	mg/L	108.7	90	110			
L83538-01DUP	DUP	08/06/10 6:06			38.7	38.56	mg/L				0.4	20	
L83538-02AS	AS	08/07/10 19:01	WI100707-9	150	101	233.8	mg/L	88.5	90	110			M2
WG287539													
WG287539LFB	LFB	08/09/10 18:20	WI100707-9	30		27.99	mg/L	93.3	90	110			
WG287539LFB	LFB	08/10/10 16:46	WI100707-9	30		32.14	mg/L	107.1	90	110			
L83538-11DUP	DUP	08/10/10 17:29			83	87.5	mg/L				5.3	20	
L83538-11AS	AS	08/10/10 17:50	WI100707-9	150	83	233.5	mg/L	100.3	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L83538**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L83538-01	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-02	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-03	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-04	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-05	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-06	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-07	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-08	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-09	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.
L83538-10	WG287385	Sulfate	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q1	Sample integrity was not maintained. See Case Narrative.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L83538**

No certification qualifiers associated with this analysis

FMI Gold & Copper - Sierrita
 ZS023Q

ACZ Project ID: L83538
 Date Received: 07/30/2010 10:39
 Received By: gac
 Date Printed: 8/2/2010

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)
Na11338		2.9	18

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

Notes

FMI Gold & Copper - Sierrita
ZS023Q

ACZ Project ID: L83538
Date Received: 07/30/2010 10:39
Received By: gac
Date Printed: 8/2/2010

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
L83538-01	MO-2007-3B									X		<input type="checkbox"/>
L83538-02	MO-2007-3C									X		<input type="checkbox"/>
L83538-03	MO-2007-4A									X		<input type="checkbox"/>
L83538-04	MO-2007-4B									X		<input type="checkbox"/>
L83538-05	MO-2007-4C									X		<input type="checkbox"/>
L83538-06	DUP20100721A									X		<input type="checkbox"/>
L83538-07	CW-10									X		<input type="checkbox"/>
L83538-08	CW-6									X		<input type="checkbox"/>
L83538-09	CW-9									X		<input type="checkbox"/>
L83538-10	GV-1									X		<input type="checkbox"/>
L83538-11	GV-2									X		<input type="checkbox"/>

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



Laboratories, Inc.

L83538

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

CHAIN of CUSTODY

Report to:

Name: K.R. (Korky) Vault

Company: Freeport-McMoRan Sierrita Inc.

E-mail: koretta_vault@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-393-4345

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

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

X

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS023Q

Reporting state for compliance testing:

Sampler's Name: Korky Vault

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

of Containers

SO4 by EPA 300 or EPA 375

MO-2007-3B	7/21/2010 : 08:35	GW	1	X															
MO-2007-3C	7/21/2010 : 09:20	GW	1	X															
MO-2007-4A	7/21/2010 : 12:56	GW	1	X															
MO-2007-4B	7/21/2010 : 12:01	GW	1	X															
MO-2007-4C	7/21/2010 : 12:20	GW	1	X															
DUP20100721A	7/21/2010	GW	1	X															
CW-10	7/27/2010 : 08:43	GW	1	X															
CW-6	7/27/2010 : 09:58	GW	1	X															
CW-9	7/27/2010 : 10:55	GW	1	X															
GV-1	7/28/2010 : 10:10	GW	1	X															

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7590

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

K.R. (Korky) Vault
UPS

7/29/10 1330

UPS
7/29/10 1330
7-30-10 1033



Laboratories, Inc.

L83538

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

CHAIN of CUSTODY

Report to:

Name: K.R. (Korky) Vault

Company: Freeport-McMoRan Sierrita Inc.

E-mail: koretta_vault@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-393-4345

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

X

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS023Q

Reporting state for compliance testing:

Sampler's Name: Korky Vault

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

of Containers

SO4 by EPA 300 or EPA 375

GV-2

7/28/2010 : 10:46

GW

1

X

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7590

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

KK Vasanth
UPS

7/29/10 1330

UAG

7/29/10 1330
7-30-10 1038

FRMAD050.01.15.09

White - Return with sample.

Yellow - Retain for your records.

August 26, 2010

Report to:

Korky Vault

FMI Gold & Copper - Sierrita

6200 W. Duval Mine Rd.

Green Valley, AZ 85614

Bill to:

Accounts Payable

FMI Gold & Copper - Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Ben Daigneau

Project ID: ZS023Q

ACZ Project ID: L83790

Korky Vault:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 13, 2010. This project has been assigned to ACZ's project number, L83790. Please reference this number in all future inquiries.

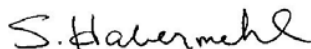
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L83790. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 26, 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.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: NP-2

ACZ Sample ID: **L83790-01**

Date Sampled: 08/05/10 11:36

Date Received: 08/13/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	41.2			mg/L	0.5	3	08/23/10 12:11	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-6B

ACZ Sample ID: **L83790-02**

Date Sampled: 08/10/10 11:00

Date Received: 08/13/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	68.8			mg/L	0.5	3	08/23/10 12:32	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2007-6A

ACZ Sample ID: **L83790-03**

Date Sampled: 08/10/10 11:48

Date Received: 08/13/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	26.8			mg/L	0.5	3	08/23/10 12:53	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: MO-2009-1

ACZ Sample ID: **L83790-04**

Date Sampled: 08/10/10 13:42

Date Received: 08/13/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	109			mg/L	1	5	08/24/10 18:07	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS023Q

Sample ID: DUP20100810A

ACZ Sample ID: **L83790-05**

Date Sampled: 08/10/10 00:00

Date Received: 08/13/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	68.6			mg/L	0.5	3	08/23/10 13:36	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - SierritaACZ Project ID: **L83790**

Project ID: ZS023Q

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG286894													
WG286894ICV	ICV	07/28/10 19:43	WI100602-2	50.2		50.4	mg/L	100.4	90	110			
WG286894ICB	ICB	07/28/10 20:04				U	mg/L		-1.5	1.5			
WG288318													
WG288318LFB	LFB	08/23/10 10:47	WI100817-1	30		32.58	mg/L	108.6	90	110			
L83780-06AS	AS	08/23/10 11:29	WI100817-1	30	9.2	38.74	mg/L	98.5	90	110			
L83780-06DUP	DUP	08/23/10 11:50			9.2	9.14	mg/L				0.7	20	
WG288505													
WG288505LFB	LFB	08/24/10 17:46	WI100817-1	30		29.61	mg/L	98.7	90	110			
L83790-04DUP	DUP	08/24/10 18:28			109	110.1	mg/L				1	20	
L83795-03AS	AS	08/24/10 19:53	WI100817-1	30	5.8	36.84	mg/L	103.5	90	110			

FMI Gold & Copper - SierritaACZ Project ID: **L83790**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
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No extended qualifiers associated with this analysis

FMI Gold & Copper - Sierrita

ACZ Project ID: **L83790**

No certification qualifiers associated with this analysis

FMI Gold & Copper - Sierrita
ZS023Q

ACZ Project ID: L83790
Date Received: 08/13/2010 09:46
Received By: gac
Date Printed: 8/16/2010

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)
1059		1	23

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

Notes

FMI Gold & Copper - Sierrita
 ZS023Q

ACZ Project ID: L83790
 Date Received: 08/13/2010 09:46
 Received By: gac
 Date Printed: 8/16/2010

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
L83790-01	NP-2									X		<input type="checkbox"/>
L83790-02	MO-2007-6B									X		<input type="checkbox"/>
L83790-03	MO-2007-6A									X		<input type="checkbox"/>
L83790-04	MO-2009-1									X		<input type="checkbox"/>
L83790-05	DUP20100810A									X		<input type="checkbox"/>

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



Laboratories, Inc.

L83190

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

CHAIN of CUSTODY

Report to:

Name: K.R. (Korky) Vault

Company: Freeport-McMoRan Sierrita Inc.

E-mail: koretta_vault@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-393-4345

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS023Q

Reporting state for compliance testing:

Sampler's Name: Korky Vault

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION		DATE:TIME	Matrix	# of Containers	SO4 by EPA 300 or EPA 375														
NP-2		8/05/2010 : 1136	GW	1	X														
MO-2007-6B		8/10/2010 : 1100	GW	1	X														
MO-2007-6A		8/10/2010 : 1148	GW	1	X														
MO-2009-1		8/10/2010 : 1342	GW	1	X														
DUP20100810A		8/10/2010	GW	1	X														

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7616

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

UPS

08/12/2010 : 1400

UPS

08/12/2010 : 1400

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

May 3, 2010

Cc: **Ben Daigneau**

Project ID: ZS01BN
ACZ Project ID: L81629– **SULFATE ONLY**

Aaron Hilshorst:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 16, 2010. This project was assigned to ACZ's project number, L81629. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81629. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-22

ACZ Sample ID: **L81629-01**

Date Sampled: 04/12/10 13:17

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1800		*	mg/L	100	500	04/22/10 13:25	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-23

ACZ Sample ID: **L81629-02**

Date Sampled: 04/12/10 12:50

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/22/10 13:25	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-24

ACZ Sample ID: **L81629-03**

Date Sampled: 04/12/10 12:20

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	04/22/10 13:32	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-3A

ACZ Sample ID: **L81629-04**

Date Sampled: 04/12/10 11:05

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1500		*	mg/L	100	500	04/22/10 13:32	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-4

ACZ Sample ID: **L81629-05**

Date Sampled: 04/12/10 11:52

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	04/22/10 13:32	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-5

ACZ Sample ID: **L81629-06**

Date Sampled: 04/12/10 12:35

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1800		*	mg/L	100	500	04/22/10 15:41	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-6A

ACZ Sample ID: **L81629-07**

Date Sampled: 04/12/10 13:40

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1800		*	mg/L	100	500	04/22/10 15:41	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-8

ACZ Sample ID: **L81629-08**

Date Sampled: 04/12/10 11:21

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1900		*	mg/L	100	500	04/22/10 15:41	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-9

ACZ Sample ID: **L81629-09**

Date Sampled: 04/12/10 11:35

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1800		*	mg/L	100	500	04/22/10 15:41	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100412A

ACZ Sample ID: **L81629-10**

Date Sampled: 04/12/10 13:17

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1800		*	mg/L	100	500	04/22/10 15:42	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81629**

Project ID: ZS01BN

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280934													
WG280934ICV	ICV	04/20/10 9:20	MS100329-2	.02		.02004	mg/L	100.2	90	110			
WG280934ICB	ICB	04/20/10 9:23				.00046	mg/L		-0.00088	0.00088			
WG280934LFB	LFB	04/20/10 9:29	MS100416-3	.01		.00905	mg/L	90.5	85	115			
L81603-04AS	AS	04/20/10 9:43	MS100416-3	.01	U	.01	mg/L	100	70	130			
L81603-04ASD	ASD	04/20/10 9:46	MS100416-3	.01	U	.00984	mg/L	98.4	70	130	1.61	20	
L81629-04AS	AS	04/20/10 10:16	MS100416-3	.01	U	.00923	mg/L	92.3	70	130			
L81629-04ASD	ASD	04/20/10 10:19	MS100416-3	.01	U	.00959	mg/L	95.9	70	130	3.83	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281070													
WG281070ICV	ICV	04/21/10 18:58	MS100329-2	.05		.05185	mg/L	103.7	90	110			
WG281070ICB	ICB	04/21/10 19:01				U	mg/L		-0.0011	0.0011			
WG281070LFB	LFB	04/21/10 19:07	MS100416-3	.05005		.0427	mg/L	85.3	85	115			
L81603-02AS	AS	04/21/10 19:16	MS100416-3	.05005	.0036	.05049	mg/L	93.7	70	130			
L81603-02ASD	ASD	04/21/10 19:19	MS100416-3	.05005	.0036	.04813	mg/L	89	70	130	4.79	20	
L81629-04AS	AS	04/21/10 19:55	MS100416-3	.1001	.001	.1033	mg/L	102.2	70	130			
L81629-04ASD	ASD	04/21/10 19:58	MS100416-3	.1001	.001	.1006	mg/L	99.5	70	130	2.65	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281152													
WG281152ICV	ICV	04/23/10 15:39	MS100329-2	.05		.05031	mg/L	100.6	90	110			
WG281152ICB	ICB	04/23/10 15:41				U	mg/L		-0.00022	0.00022			
WG281152LFB	LFB	04/23/10 15:45	MS100416-3	.05005		.05194	mg/L	103.8	85	115			
L81629-04AS	AS	04/23/10 15:55	MS100416-3	.1001	U	.10648	mg/L	106.4	70	130			
L81629-04ASD	ASD	04/23/10 15:57	MS100416-3	.1001	U	.1065	mg/L	106.4	70	130	0.02	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280934													
WG280934ICV	ICV	04/20/10 9:20	MS100329-2	.05		.05008	mg/L	100.2	90	110			
WG280934ICB	ICB	04/20/10 9:23				U	mg/L		-0.00022	0.00022			
WG280934LFB	LFB	04/20/10 9:29	MS100416-3	.05005		.04322	mg/L	86.4	85	115			
L81603-04AS	AS	04/20/10 9:43	MS100416-3	.05005	U	.0479	mg/L	95.7	70	130			
L81603-04ASD	ASD	04/20/10 9:46	MS100416-3	.05005	U	.04798	mg/L	95.9	70	130	0.17	20	
L81629-04AS	AS	04/20/10 10:16	MS100416-3	.05005	U	.04109	mg/L	82.1	70	130			
L81629-04ASD	ASD	04/20/10 10:19	MS100416-3	.05005	U	.041	mg/L	81.9	70	130	0.22	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81629**

Project ID: **ZS01BN**

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280914													
WG280914ICV	ICV	04/19/10 20:05	II100311-1	2		1.994	mg/L	99.7	95	105			
WG280914ICB	ICB	04/19/10 20:09				U	mg/L		-0.03	0.03			
WG280914LFB	LFB	04/19/10 20:22	II100409-2	.5		.495	mg/L	99	85	115			
L81611-01AS	AS	04/19/10 20:28	II100409-2	.5	U	.524	mg/L	104.8	85	115			
L81611-01ASD	ASD	04/19/10 20:32	II100409-2	.5	U	.51	mg/L	102	85	115	2.71	20	
L81629-04AS	AS	04/19/10 21:13	II100409-2	.5	U	.536	mg/L	107.2	85	115			
L81629-04ASD	ASD	04/19/10 21:16	II100409-2	.5	U	.546	mg/L	109.2	85	115	1.85	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280914													
WG280914ICV	ICV	04/19/10 20:05	II100311-1	2.002		2.085	mg/L	104.1	95	105			
WG280914ICB	ICB	04/19/10 20:09				U	mg/L		-0.03	0.03			
WG280914LFB	LFB	04/19/10 20:22	II100409-2	.5		.51	mg/L	102	85	115			
L81611-01AS	AS	04/19/10 20:28	II100409-2	.5	U	.556	mg/L	111.2	85	115			
L81611-01ASD	ASD	04/19/10 20:32	II100409-2	.5	U	.548	mg/L	109.6	85	115	1.45	20	
L81629-04AS	AS	04/19/10 21:13	II100409-2	.5	U	.541	mg/L	108.2	85	115			
L81629-04ASD	ASD	04/19/10 21:16	II100409-2	.5	U	.544	mg/L	108.8	85	115	0.55	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280914													
WG280914ICV	ICV	04/19/10 20:05	II100311-1	2		1.961	mg/L	98.1	95	105			
WG280914ICB	ICB	04/19/10 20:09				U	mg/L		-0.03	0.03			
WG280914LFB	LFB	04/19/10 20:22	II100409-2	.5		.493	mg/L	98.6	85	115			
L81611-01AS	AS	04/19/10 20:28	II100409-2	.5	U	.523	mg/L	104.6	85	115			
L81611-01ASD	ASD	04/19/10 20:32	II100409-2	.5	U	.505	mg/L	101	85	115	3.5	20	
L81629-04AS	AS	04/19/10 21:13	II100409-2	.5	U	.529	mg/L	105.8	85	115			
L81629-04ASD	ASD	04/19/10 21:16	II100409-2	.5	U	.537	mg/L	107.4	85	115	1.5	20	

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280968													
WG280968ICV	ICV	04/20/10 13:41	WC100401-1	2		2.05	mg/L	102.5	95	105			
WG280968ICB	ICB	04/20/10 13:49				U	mg/L		-0.3	0.3			
WG280968LFB1	LFB	04/20/10 13:56	WC100112-3	5		5.28	mg/L	105.6	90	110			
WG280968LFB2	LFB	04/20/10 17:03	WC100112-3	5		5.21	mg/L	104.2	90	110			
L81613-03DUP	DUP	04/20/10 18:57			1.6	1.6	mg/L				0	20	
L81613-04AS	AS	04/20/10 19:12	WC100112-3	5	.9	6	mg/L	102	90	110			
WG281094													
WG281094ICV	ICV	04/22/10 10:31	WC100420-1	2		1.91	mg/L	95.5	95	105			
WG281094ICB	ICB	04/22/10 10:39				U	mg/L		-0.3	0.3			
WG281094LFB1	LFB	04/22/10 10:49	WC100112-3	5		4.82	mg/L	96.4	90	110			
L81629-02AS	AS	04/22/10 11:08	WC100112-3	5	.2	5	mg/L	96	90	110			
L81629-02DUP	DUP	04/22/10 11:15			.2	.18	mg/L				10.5	20	RA
WG281094LFB2	LFB	04/22/10 13:54	WC100112-3	5		4.73	mg/L	94.6	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81629**

Project ID: ZS01BN

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280934													
WG280934ICV	ICV	04/20/10 9:20	MS100329-2	.05		.04911	mg/L	98.2	90	110			
WG280934ICB	ICB	04/20/10 9:23				U	mg/L		-0.00022	0.00022			
WG280934LFB	LFB	04/20/10 9:29	MS100416-3	.05005		.04266	mg/L	85.2	85	115			
L81603-04AS	AS	04/20/10 9:43	MS100416-3	.05005	U	.04321	mg/L	86.3	70	130			
L81603-04ASD	ASD	04/20/10 9:46	MS100416-3	.05005	U	.04342	mg/L	86.8	70	130	0.48	20	
L81629-04AS	AS	04/20/10 10:16	MS100416-3	.05005	.0002	.05	mg/L	99.5	70	130			
L81629-04ASD	ASD	04/20/10 10:19	MS100416-3	.05005	.0002	.04946	mg/L	98.4	70	130	1.09	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280914													
WG280914ICV	ICV	04/19/10 20:05	II100311-1	100		100.56	mg/L	100.6	95	105			
WG280914ICB	ICB	04/19/10 20:09				U	mg/L		-0.6	0.6			
WG280914LFB	LFB	04/19/10 20:22	II100409-2	49.99941		47.95	mg/L	95.9	85	115			
L81611-01AS	AS	04/19/10 20:28	II100409-2	49.99941	3.1	54.14	mg/L	102.1	85	115			
L81611-01ASD	ASD	04/19/10 20:32	II100409-2	49.99941	3.1	54.66	mg/L	103.1	85	115	0.96	20	
L81629-04AS	AS	04/19/10 21:13	II100409-2	49.99941	110	158.04	mg/L	96.1	85	115			
L81629-04ASD	ASD	04/19/10 21:16	II100409-2	49.99941	110	156.6	mg/L	93.2	85	115	0.92	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280961													
WG280961ICV	ICV	04/20/10 12:21	II100311-1	2		1.984	mg/L	99.2	95	105			
WG280961ICB	ICB	04/20/10 12:25				.013	mg/L		-0.03	0.03			
WG280961LFB	LFB	04/20/10 12:37	II100409-2	.5		.509	mg/L	101.8	85	115			
L81629-04AS	AS	04/20/10 12:55	II100409-2	.5	.03	.55	mg/L	104	85	115			
L81629-04ASD	ASD	04/20/10 12:58	II100409-2	.5	.03	.546	mg/L	103.2	85	115	0.73	20	
L81629-10AS	AS	04/20/10 13:26	II100409-2	.5	.04	.563	mg/L	104.6	85	115			
L81629-10ASD	ASD	04/20/10 13:29	II100409-2	.5	.04	.554	mg/L	102.8	85	115	1.61	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280914													
WG280914ICV	ICV	04/19/10 20:05	II100311-1	2.002		1.939	mg/L	96.9	95	105			
WG280914ICB	ICB	04/19/10 20:09				U	mg/L		-0.03	0.03			
WG280914LFB	LFB	04/19/10 20:22	II100409-2	.5		.491	mg/L	98.2	85	115			
L81611-01AS	AS	04/19/10 20:28	II100409-2	.5	U	.538	mg/L	107.6	85	115			
L81611-01ASD	ASD	04/19/10 20:32	II100409-2	.5	U	.522	mg/L	104.4	85	115	3.02	20	
L81629-04AS	AS	04/19/10 21:13	II100409-2	.5	U	.531	mg/L	106.2	85	115			
L81629-04ASD	ASD	04/19/10 21:16	II100409-2	.5	U	.529	mg/L	105.8	85	115	0.38	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81629**

Project ID: ZS01BN

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281481													
WG281481ICV	ICV	04/28/10 21:05	WI100323-9	2.416		2.501	mg/L	103.5	90	110			
WG281481ICB	ICB	04/28/10 21:06				U	mg/L		-0.06	0.06			
WG281482													
WG281482LFB1	LFB	04/28/10 22:19	WI100319-1	2		1.929	mg/L	96.5	90	110			
L81629-01AS	AS	04/28/10 22:22	WI100319-1	2	.8	2.705	mg/L	95.3	90	110			
L81629-02DUP	DUP	04/28/10 22:24			.9	.91	mg/L				1.1	20	
WG281482ICV	ICV	04/28/10 23:27	WI100323-9	2.416		2.509	mg/L	103.8	90	110			
WG281482ICB	ICB	04/28/10 23:28				U	mg/L		-0.06	0.06			
WG281482LFB2	LFB	04/28/10 23:36	WI100319-1	2		1.979	mg/L	99	90	110			

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280855													
WG280855PBW	PBW	04/16/10 13:40				U	mg/L		-20	20			
WG280855LCSW	LCSW	04/16/10 13:40	PCN34141	260		258	mg/L	99.2	80	120			
L81629-01DUP	DUP	04/16/10 13:48			3040	3078	mg/L				1.2	20	
L81629-10DUP	DUP	04/16/10 13:54			3010	2990	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
WG280934													
WG280934ICV	ICV	04/20/10 9:20	MS100329-2	.05		.05314	mg/L	106.3	90	110			
WG280934ICB	ICB	04/20/10 9:23				U	mg/L		-0.00022	0.00022			
WG280934LFB	LFB	04/20/10 9:29	MS100416-3	.05005		.04532	mg/L	90.5	85	115			
L81603-04AS	AS	04/20/10 9:43	MS100416-3	.05005	U	.06176	mg/L	123.4	70	130			
L81603-04ASD	ASD	04/20/10 9:46	MS100416-3	.05005	U	.06343	mg/L	126.7	70	130	2.67	20	
L81629-04AS	AS	04/20/10 10:16	MS100416-3	.05005	.0004	.0508	mg/L	100.7	70	130			
L81629-04ASD	ASD	04/20/10 10:19	MS100416-3	.05005	.0004	.05307	mg/L	105.2	70	130	4.37	20	

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281109													
WG281109ICB	ICB	04/22/10 12:34				U	mg/L		-3	3			
WG281109ICV	ICV	04/22/10 12:34	WI100413-1	20.08		20	mg/L	99.6	90	110			
WG281109LFB	LFB	04/22/10 13:05	WI091020-3	10		10.6	mg/L	106	90	110			
L81613-07DUP	DUP	04/22/10 13:24			230	221	mg/L				4	20	
L81621-01AS	AS	04/22/10 13:35	SO4TURB10	10	140	157	mg/L	170	90	110			M3
WG281111													
WG281111ICB	ICB	04/22/10 12:34				U	mg/L		-3	3			
WG281111ICV	ICV	04/22/10 12:34	WI100413-1	20.08		20	mg/L	99.6	90	110			
WG281111LFB	LFB	04/22/10 15:22	WI091020-3	10		10.5	mg/L	105	90	110			
L81629-06DUP	DUP	04/22/10 15:41			1800	1730	mg/L				4	20	
L81629-07AS	AS	04/22/10 15:41	SO4TURB10	10	1800	1780	mg/L	-200	90	110			M3

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81629**

Project ID: ZS01BN

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280934													
WG280934ICV	ICV	04/20/10 9:20	MS100329-2	.05		.0527	mg/L	105.4	90	110			
WG280934ICB	ICB	04/20/10 9:23				U	mg/L		-0.00022	0.00022			
WG280934LFB	LFB	04/20/10 9:29	MS100416-3	.0501		.04281	mg/L	85.4	85	115			
L81603-04AS	AS	04/20/10 9:43	MS100416-3	.0501	U	.04341	mg/L	86.6	70	130			
L81603-04ASD	ASD	04/20/10 9:46	MS100416-3	.0501	U	.04365	mg/L	87.1	70	130	0.55	20	
L81629-04AS	AS	04/20/10 10:16	MS100416-3	.0501	U	.05185	mg/L	103.5	70	130			
L81629-04ASD	ASD	04/20/10 10:19	MS100416-3	.0501	U	.05121	mg/L	102.2	70	130	1.24	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L81629

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81629-01	WG281109	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.
L81629-02	WG281109	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.
L81629-03	WG281109	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.
L81629-04	WG281109	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.
L81629-05	WG281109	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.
L81629-06	WG281111	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.
L81629-07	WG281111	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.
L81629-08	WG281111	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.
L81629-09	WG281111	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.
L81629-10	WG281111	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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81629**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81629
Date Received: 04/16/2010 11:23
Received By: gac
Date Printed: 4/16/2010

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)
2646		4.7	15

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81629
 Date Received: 04/16/2010 11:23
 Received By: gac
 Date Printed: 4/16/2010

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
L81629-01	IW-22		Y		Y							<input type="checkbox"/>
L81629-02	IW-23		Y		Y							<input type="checkbox"/>
L81629-03	IW-24		Y		Y							<input type="checkbox"/>
L81629-04	IW-3A		Y		Y							<input type="checkbox"/>
L81629-05	IW-4		Y		Y							<input type="checkbox"/>
L81629-06	IW-5		Y		Y							<input type="checkbox"/>
L81629-07	IW-6A		Y		Y							<input type="checkbox"/>
L81629-08	IW-8		Y		Y							<input type="checkbox"/>
L81629-09	IW-9		Y		Y							<input type="checkbox"/>
L81629-10	DUP20100412A		Y		Y							<input type="checkbox"/>

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



Laboratories, Inc.

281629

CHAIN of CUSTODY

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

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

X

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01BN

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

of Containers

Quarterly

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

IW-22

4/12/10 13:17

GW

3

X

IW-23

4/12/10 12:50

GW

3

X

IW-24

4/12/10 12:20

GW

3

X

IW-3A

4/12/10 11:05

GW

3

X

IW-4

4/12/10 11:52

GW

3

X

IW-5

4/12/10 12:35

GW

3

X

IW-6A

4/12/10 13:40

GW

3

X

IW-8

4/12/10 11:21

GW

3

X

IW-9

4/12/10 11:35

GW

3

X

DUP20100412A

4/12/10

GW

3

X

Matrix

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

REMARKS

Copy of report to Ben Daigneau contains only "SO4" results with QC Summary.

UPS Tracking # 1Z 867 7E4 23 1000 7143

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

1-10-10 K8J

4-15-10 15:30

K8J

4/16/10 11:23

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

May 3, 2010

Cc: **Ben Daigneau**

Project ID: ZS01BN
ACZ Project ID: L81638- **SULFATE ONLY**

Aaron Hilshorst:

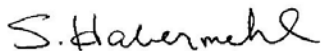
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 16, 2010. This project was assigned to ACZ's project number, L81638. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81638. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-1

ACZ Sample ID: **L81638-01**

Date Sampled: 04/12/10 10:40

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	940		*	mg/L	50	300	04/26/10 15:19	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-10

ACZ Sample ID: **L81638-02**

Date Sampled: 04/12/10 13:05

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/26/10 15:57	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-11

ACZ Sample ID: **L81638-03**

Date Sampled: 04/12/10 13:30

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/26/10 15:57	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-13

ACZ Sample ID: **L81638-04**

Date Sampled: 04/12/10 08:03

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1900		*	mg/L	100	500	04/27/10 14:36	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-15

ACZ Sample ID: **L81638-05**

Date Sampled: 04/12/10 08:22

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/26/10 16:09	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-16

ACZ Sample ID: **L81638-06**

Date Sampled: 04/12/10 08:36

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1800		*	mg/L	100	500	04/26/10 16:10	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-17

ACZ Sample ID: **L81638-07**

Date Sampled: 04/12/10 08:50

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/27/10 14:36	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-19

ACZ Sample ID: **L81638-08**

Date Sampled: 04/12/10 09:15

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	04/26/10 16:09	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-2A

ACZ Sample ID: **L81638-09**

Date Sampled: 04/12/10 10:50

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	77		*	mg/L	5	30	04/26/10 15:40	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-21

ACZ Sample ID: **L81638-10**

Date Sampled: 04/12/10 09:35

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/27/10 14:43	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81638**

Project ID: ZS01BN

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155 CV	ICV	04/25/10 3:02	MS100329-2	.02		.02011	mg/L	100.6	90	110			
WG281155 CB	ICB	04/25/10 3:06				U	mg/L		-0.00088	0.00088			
WG281155 LFB	LFB	04/25/10 3:13	MS100416-3	.01		.01029	mg/L	102.9	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.01	U	.00998	mg/L	99.8	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.01	U	.01019	mg/L	101.9	70	130	2.08	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.01	U	.01011	mg/L	101.1	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.01	U	.00973	mg/L	97.3	70	130	3.83	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155 CV	ICV	04/25/10 3:02	MS100329-2	.05		.05036	mg/L	100.7	90	110			
WG281155 CB	ICB	04/25/10 3:06				U	mg/L		-0.0011	0.0011			
WG281155 LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04815	mg/L	96.2	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.05005	.0042	.05371	mg/L	98.9	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.05005	.0042	.05423	mg/L	100	70	130	0.96	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	.0052	.0545	mg/L	98.5	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	.0052	.05238	mg/L	94.3	70	130	3.97	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155 CV	ICV	04/25/10 3:02	MS100329-2	.05		.04555	mg/L	91.1	90	110			
WG281155 CB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155 LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.0463	mg/L	92.5	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.05005	U	.04659	mg/L	93.1	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.05005	U	.04709	mg/L	94.1	70	130	1.07	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	U	.05161	mg/L	103.1	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	U	.04911	mg/L	98.1	70	130	4.96	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155 CV	ICV	04/25/10 3:02	MS100329-2	.05		.04941	mg/L	98.8	90	110			
WG281155 CB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155 LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04799	mg/L	95.9	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.05005	U	.04572	mg/L	91.3	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.05005	U	.04662	mg/L	93.1	70	130	1.95	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	U	.04837	mg/L	96.6	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	U	.04593	mg/L	91.8	70	130	5.17	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81638**

Project ID: ZS01BN

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2		2.107	mg/L	105.4	95	105			
WG280988ICB	ICB	04/20/10 22:25				.013	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.565	mg/L	113	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	.01	.58	mg/L	114	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	.01	.574	mg/L	112.8	85	115	1.04	20	
WG281036													
WG281036ICV	ICV	04/21/10 13:12	II100311-1	2		2.023	mg/L	101.2	95	105			
WG281036ICB	ICB	04/21/10 13:16				U	mg/L		-0.03	0.03			
WG281036LFB	LFB	04/21/10 13:28	II100409-2	.5		.517	mg/L	103.4	85	115			
L81638-01AS	AS	04/21/10 13:34	II100409-2	.5	U	.526	mg/L	105.2	85	115			
L81638-01ASD	ASD	04/21/10 13:37	II100409-2	.5	U	.518	mg/L	103.6	85	115	1.53	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280980													
WG280980ICV	ICV	04/20/10 20:13	II100311-1	2.002		1.977	mg/L	98.8	95	105			
WG280980ICB	ICB	04/20/10 20:17				U	mg/L		-0.03	0.03			
WG280980LFB	LFB	04/20/10 20:30	II100409-2	.5		.506	mg/L	101.2	85	115			
L81633-04AS	AS	04/20/10 21:21	II100409-2	.5	U	.539	mg/L	107.8	85	115			
L81633-04ASD	ASD	04/20/10 21:24	II100409-2	.5	U	.535	mg/L	107	85	115	0.74	20	
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2.002		2.098	mg/L	104.8	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.543	mg/L	108.6	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	U	.554	mg/L	110.8	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	U	.55	mg/L	110	85	115	0.72	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280980													
WG280980ICV	ICV	04/20/10 20:13	II100311-1	2		1.933	mg/L	96.7	95	105			
WG280980ICB	ICB	04/20/10 20:17				U	mg/L		-0.03	0.03			
WG280980LFB	LFB	04/20/10 20:30	II100409-2	.5		.513	mg/L	102.6	85	115			
L81633-04AS	AS	04/20/10 21:21	II100409-2	.5	U	.528	mg/L	105.6	85	115			
L81633-04ASD	ASD	04/20/10 21:24	II100409-2	.5	U	.526	mg/L	105.2	85	115	0.38	20	
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2		1.988	mg/L	99.4	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.531	mg/L	106.2	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	U	.531	mg/L	106.2	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	U	.544	mg/L	108.8	85	115	2.42	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81638**

Project ID: ZS01BN

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281094													
WG281094ICV	ICV	04/22/10 10:31	WC100420-1	2		1.91	mg/L	95.5	95	105			
WG281094ICB	ICB	04/22/10 10:39				U	mg/L		-0.3	0.3			
WG281094LFB1	LFB	04/22/10 10:49	WC100112-3	5		4.82	mg/L	96.4	90	110			
L81634-01AS	AS	04/22/10 12:43	WC100112-3	5	.2	5.05	mg/L	97	90	110			
L81634-01DUP	DUP	04/22/10 12:51			.2	.18	mg/L				10.5	20	RA
WG281094LFB2	LFB	04/22/10 13:54	WC100112-3	5		4.73	mg/L	94.6	90	110			
L81638-08AS	AS	04/22/10 14:00	WC100112-3	5	.2	4.91	mg/L	94.2	90	110			
L81638-08DUP	DUP	04/22/10 14:05			.2	.23	mg/L				14	20	RA

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.05048	mg/L	101	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04939	mg/L	98.7	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.05005	.0014	.05074	mg/L	98.6	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.05005	.0014	.05185	mg/L	100.8	70	130	2.16	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	.0006	.05005	mg/L	98.8	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	.0006	.04743	mg/L	93.6	70	130	5.38	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280980													
WG280980ICV	ICV	04/20/10 20:13	II100311-1	100		99.39	mg/L	99.4	95	105			
WG280980ICB	ICB	04/20/10 20:17				U	mg/L		-0.6	0.6			
WG280980LFB	LFB	04/20/10 20:30	II100409-2	49.99941		50.79	mg/L	101.6	85	115			
L81633-04AS	AS	04/20/10 21:21	II100409-2	49.99941	7	61.59	mg/L	109.2	85	115			
L81633-04ASD	ASD	04/20/10 21:24	II100409-2	49.99941	7	61.07	mg/L	108.1	85	115	0.85	20	
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	100		101.79	mg/L	101.8	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.6	0.6			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	49.99941		51.96	mg/L	103.9	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	49.99941	10.5	63.14	mg/L	105.3	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	49.99941	10.5	63.87	mg/L	106.7	85	115	1.15	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81638**

Project ID: ZS01BN

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280980													
WG280980ICV	ICV	04/20/10 20:13	II100311-1	2		1.989	mg/L	99.5	95	105			
WG280980ICB	ICB	04/20/10 20:17				U	mg/L		-0.03	0.03			
WG280980LFB	LFB	04/20/10 20:30	II100409-2	.5		.509	mg/L	101.8	85	115			
L81633-04AS	AS	04/20/10 21:21	II100409-2	.5	U	.533	mg/L	106.6	85	115			
L81633-04ASD	ASD	04/20/10 21:24	II100409-2	.5	U	.537	mg/L	107.4	85	115	0.75	20	

WG280988

WG280988ICV	ICV	04/20/10 22:21	II100311-1	2		2.086	mg/L	104.3	95	105			
WG280988ICB	ICB	04/20/10 22:25				.012	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.545	mg/L	109	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	.02	.538	mg/L	103.6	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	.02	.55	mg/L	106	85	115	2.21	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280980													
WG280980ICV	ICV	04/20/10 20:13	II100311-1	2.002		1.913	mg/L	95.6	95	105			
WG280980ICB	ICB	04/20/10 20:17				U	mg/L		-0.03	0.03			
WG280980LFB	LFB	04/20/10 20:30	II100409-2	.5		.523	mg/L	104.6	85	115			
L81633-04AS	AS	04/20/10 21:21	II100409-2	.5	U	.557	mg/L	111.4	85	115			
L81633-04ASD	ASD	04/20/10 21:24	II100409-2	.5	U	.548	mg/L	109.6	85	115	1.63	20	

WG280988

WG280988ICV	ICV	04/20/10 22:21	II100311-1	2.002		1.95	mg/L	97.4	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.534	mg/L	106.8	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	U	.542	mg/L	108.4	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	U	.53	mg/L	106	85	115	2.24	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281481													
WG281481ICV	ICV	04/28/10 21:05	WI100323-9	2.416		2.501	mg/L	103.5	90	110			
WG281481ICB	ICB	04/28/10 21:06				U	mg/L		-0.06	0.06			
WG281482													
WG281482LFB1	LFB	04/28/10 22:19	WI100319-1	2		1.929	mg/L	96.5	90	110			
L81638-01AS	AS	04/28/10 22:42	WI100319-1	2	1.58	3.395	mg/L	90.8	90	110			
L81638-02DUP	DUP	04/28/10 22:45			.87	.874	mg/L				0.5	20	
WG281482ICV	ICV	04/28/10 23:27	WI100323-9	2.416		2.509	mg/L	103.8	90	110			
WG281482ICB	ICB	04/28/10 23:28				U	mg/L		-0.06	0.06			
WG281482LFB2	LFB	04/28/10 23:36	WI100319-1	2		1.979	mg/L	99	90	110			
L81639-01AS	AS	04/28/10 23:38	WI100319-1	2	1.09	2.987	mg/L	94.9	90	110			
L81639-02DUP	DUP	04/28/10 23:41			1.8	1.805	mg/L				0.3	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81638**

Project ID: ZS01BN

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280869													
WG280869PBW	PBW	04/16/10 14:50				22	mg/L		-20	20			B7
WG280869LCSW	LCSW	04/16/10 14:50	PCN34141	260		264	mg/L	101.5	80	120			
L81638-10DUP	DUP	04/16/10 15:04			2950	2950	mg/L				0	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.04615	mg/L	92.3	90	110			
WG281155ICB	ICB	04/25/10 3:06				.00013	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04865	mg/L	97.2	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.05005	.001	.05654	mg/L	111	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.05005	.001	.05746	mg/L	112.8	70	130	1.61	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	.0003	.05272	mg/L	104.7	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	.0003	.04934	mg/L	98	70	130	6.62	20	

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281310													
WG281310ICB	ICB	04/26/10 13:39				U	mg/L		-3	3			
WG281310ICV	ICV	04/26/10 13:39	WI100413-1	20.08		19.7	mg/L	98.1	90	110			
WG281310LFB	LFB	04/26/10 14:47	WI091020-3	10		9.9	mg/L	99	90	110			
L81632-05DUP	DUP	04/26/10 14:49			30	26.6	mg/L				12	20	
L81632-06AS	AS	04/26/10 14:49	WI091020-3	10	21	29.6	mg/L	86	90	110			M2
WG281318													
WG281318ICB	ICB	04/26/10 13:39				U	mg/L		-3	3			
WG281318ICV	ICV	04/26/10 13:39	WI100413-1	20.08		19.7	mg/L	98.1	90	110			
WG281318LFB	LFB	04/26/10 15:30	WI091020-3	10		10	mg/L	100	90	110			
L81638-02DUP	DUP	04/26/10 15:57			1700	1640	mg/L				3.6	20	
L81638-03AS	AS	04/26/10 15:57	SO4TURB10	10	1700	1560	mg/L	-1400	90	110			M3
WG281381													
WG281381ICB	ICB	04/27/10 13:56				U	mg/L		-3	3			
WG281381ICV	ICV	04/27/10 13:56	WI100413-1	20.08		20.1	mg/L	100.1	90	110			
WG281381LFB	LFB	04/27/10 14:20	WI091020-3	10		10.2	mg/L	102	90	110			
L81567-01DUP	DUP	04/27/10 14:36			92	94	mg/L				2.2	20	
L81567-02AS	AS	04/27/10 14:43	SO4TURB5	10	94	94.4	mg/L	4	90	110			M3

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.05508	mg/L	110.2	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.0501		.05087	mg/L	101.5	85	115			
L81638-01AS	AS	04/25/10 3:23	MS100416-3	.0501	U	.05191	mg/L	103.6	70	130			
L81638-01ASD	ASD	04/25/10 3:26	MS100416-3	.0501	U	.05313	mg/L	106	70	130	2.32	20	
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.0501	U	.05233	mg/L	104.5	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.0501	U	.04942	mg/L	98.6	70	130	5.72	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L81638

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81638-01	WG281310	Sulfate	375.4 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L81638-02	WG281318	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.
L81638-03	WG281318	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.
L81638-04	WG281381	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.
L81638-05	WG281318	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.
L81638-06	WG281318	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.
L81638-07	WG281381	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.
L81638-08	WG281318	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.
L81638-09	WG281318	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.
L81638-10	WG281381	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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81638**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81638
Date Received: 04/16/2010 11:20
Received By: gac
Date Printed: 4/16/2010

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)
2586		5.7	11

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81638
 Date Received: 04/16/2010 11:20
 Received By: gac
 Date Printed: 4/16/2010

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
L81638-01	IW-1		Y		Y							<input type="checkbox"/>
L81638-02	IW-10		Y		Y							<input type="checkbox"/>
L81638-03	IW-11		Y		Y							<input type="checkbox"/>
L81638-04	IW-13		Y		Y							<input type="checkbox"/>
L81638-05	IW-15		Y		Y							<input type="checkbox"/>
L81638-06	IW-16		Y		Y							<input type="checkbox"/>
L81638-07	IW-17		Y		Y							<input type="checkbox"/>
L81638-08	IW-19		Y		Y							<input type="checkbox"/>
L81638-09	IW-2A		Y		Y							<input type="checkbox"/>
L81638-10	IW-21		Y		Y							<input type="checkbox"/>

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.

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

CHAIN of CUSTODY

Report to:

Name: Aaron Hilshorst	Address: 6200 W. Duval Mine Road
Company: Freeport-McMoRan Sierrita Inc.	Green Valley, AZ 85614
E-mail: aaron_hilshorst@fmi.com	Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau	E-mail: bdaigneau@clearcreekassociates.com
Company: Clear Creek Associates	Telephone: 520-622-3222

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.

Are samples for CO DW Compliance Monitoring?

YES
NO

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

QUOTE #:			# of Containers	Quarterly							
Project/PO #: ZS01BN											
Reporting state for compliance testing:											
Sampler's Name:											
Are any samples NRC licensable material? Yes No											
SAMPLE IDENTIFICATION	DATE/TIME	Matrix									
IW-1	4/12/10 10:40	GW	3	x							
IW-10	4/12/10 13:05	GW	3	x							
IW-11	4/12/10 13:30	GW	3	x							
IW-13	4/12/10 08:03	GW	3	x							
IW-15	4/12/10 08:22	GW	3	x							
IW-16	4/12/10 08:36	GW	3	x							
IW-17	4/12/10 08:50	GW	3	x							
IW-19	4/12/10 09:15	GW	3	x							
IW-2a	4/12/10 10:50	GW	3	x							
IW-21	4/12/10 09:35	GW	3	x							

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

Copy of report to Ben Daigneau contains only "SO4" results with QC Summary.

UPS Tracking # 1Z 867 7E4 23 1000 7134

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>[Signature]</i>	4-15-10 15:30	KSD	4/16/10 11:20

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

May 3, 2010

Cc: **Ben Daigneau**

Project ID: ZS01BN
ACZ Project ID: L81639– **SULFATE ONLY**

Aaron Hilshorst:

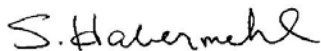
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 16, 2010. This project was assigned to ACZ's project number, L81639. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81639. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-25A

ACZ Sample ID: **L81639-01**

Date Sampled: 04/13/10 11:39

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	9		*	mg/L	1	5	04/26/10 15:55	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-25B

ACZ Sample ID: **L81639-02**

Date Sampled: 04/13/10 11:08

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	900		*	mg/L	100	500	04/26/10 15:57	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-25C

ACZ Sample ID: **L81639-03**

Date Sampled: 04/13/10 11:47

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	04/26/10 16:09	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-26A

ACZ Sample ID: **L81639-04**

Date Sampled: 04/13/10 09:51

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	8		*	mg/L	1	5	04/26/10 15:55	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-26B

ACZ Sample ID: **L81639-05**

Date Sampled: 04/13/10 09:16

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	04/26/10 15:52	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-26C

ACZ Sample ID: **L81639-06**

Date Sampled: 04/13/10 09:33

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	770		*	mg/L	50	300	04/27/10 14:43	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100412B

ACZ Sample ID: **L81639-07**

Date Sampled: 04/12/10 00:00

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/26/10 15:54	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100413B

ACZ Sample ID: **L81639-08**

Date Sampled: 04/13/10 00:00

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	780		*	mg/L	50	300	04/27/10 14:43	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-30

ACZ Sample ID: **L81639-09**

Date Sampled: 04/15/10 09:49

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	M300.0 - Ion Chromatography	8.5			mg/L	0.5	3	04/24/10 2:44	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81639**

Project ID: **ZS01BN**

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.02		.02011	mg/L	100.6	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00088	0.00088			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.01		.01029	mg/L	102.9	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.01	U	.01011	mg/L	101.1	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.01	U	.00973	mg/L	97.3	70	130	3.83	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.05036	mg/L	100.7	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.0011	0.0011			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04815	mg/L	96.2	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	.0052	.0545	mg/L	98.5	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	.0052	.05238	mg/L	94.3	70	130	3.97	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.04555	mg/L	91.1	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.0463	mg/L	92.5	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	U	.05161	mg/L	103.1	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	U	.04911	mg/L	98.1	70	130	4.96	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.04941	mg/L	98.8	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04799	mg/L	95.9	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	U	.04837	mg/L	96.6	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	U	.04593	mg/L	91.8	70	130	5.17	20	

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2		2.107	mg/L	105.4	95	105			
WG280988ICB	ICB	04/20/10 22:25				.013	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.565	mg/L	113	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	.01	.58	mg/L	114	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	.01	.574	mg/L	112.8	85	115	1.04	20	
L81639-08AS	AS	04/20/10 23:31	II100409-2	.5	.01	.564	mg/L	110.8	85	115			
L81639-08ASD	ASD	04/20/10 23:34	II100409-2	.5	.01	.56	mg/L	110	85	115	0.71	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81639**

Project ID: ZS01BN

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2.002		2.098	mg/L	104.8	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.543	mg/L	108.6	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	U	.554	mg/L	110.8	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	U	.55	mg/L	110	85	115	0.72	20	
L81639-08AS	AS	04/20/10 23:31	II100409-2	.5	U	.538	mg/L	107.6	85	115			
L81639-08ASD	ASD	04/20/10 23:34	II100409-2	.5	U	.526	mg/L	105.2	85	115	2.26	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2		1.988	mg/L	99.4	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.531	mg/L	106.2	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	U	.531	mg/L	106.2	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	U	.544	mg/L	108.8	85	115	2.42	20	
L81639-08AS	AS	04/20/10 23:31	II100409-2	.5	U	.56	mg/L	112	85	115			
L81639-08ASD	ASD	04/20/10 23:34	II100409-2	.5	U	.539	mg/L	107.8	85	115	3.82	20	

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281094													
WG281094ICV	ICV	04/22/10 10:31	WC100420-1	2		1.91	mg/L	95.5	95	105			
WG281094ICB	ICB	04/22/10 10:39				U	mg/L		-0.3	0.3			
WG281094LFB1	LFB	04/22/10 10:49	WC100112-3	5		4.82	mg/L	96.4	90	110			
WG281094LFB2	LFB	04/22/10 13:54	WC100112-3	5		4.73	mg/L	94.6	90	110			
L81638-08AS	AS	04/22/10 14:00	WC100112-3	5	.2	4.91	mg/L	94.2	90	110			
L81638-08DUP	DUP	04/22/10 14:05			.2	.23	mg/L				14	20	RA
L81639-08AS	AS	04/22/10 15:19	WC100112-3	5	.3	5.1	mg/L	96	90	110			
L81639-08DUP	DUP	04/22/10 15:24			.3	.3	mg/L				0	20	RA

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.05048	mg/L	101	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04939	mg/L	98.7	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	.0006	.05005	mg/L	98.8	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	.0006	.04743	mg/L	93.6	70	130	5.38	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81639**

Project ID: ZS01BN

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	100		101.79	mg/L	101.8	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.6	0.6			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	49.99941		51.96	mg/L	103.9	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	49.99941	10.5	63.14	mg/L	105.3	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	49.99941	10.5	63.87	mg/L	106.7	85	115	1.15	20	
L81639-08AS	AS	04/20/10 23:31	II100409-2	49.99941	56.1	107.29	mg/L	102.4	85	115			
L81639-08ASD	ASD	04/20/10 23:34	II100409-2	49.99941	56.1	103.72	mg/L	95.2	85	115	3.38	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2		2.086	mg/L	104.3	95	105			
WG280988ICB	ICB	04/20/10 22:25				.012	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.545	mg/L	109	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	.02	.538	mg/L	103.6	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	.02	.55	mg/L	106	85	115	2.21	20	
L81639-08AS	AS	04/20/10 23:31	II100409-2	.5	.02	.537	mg/L	103.4	85	115			
L81639-08ASD	ASD	04/20/10 23:34	II100409-2	.5	.02	.527	mg/L	101.4	85	115	1.88	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280988													
WG280988ICV	ICV	04/20/10 22:21	II100311-1	2.002		1.95	mg/L	97.4	95	105			
WG280988ICB	ICB	04/20/10 22:25				U	mg/L		-0.03	0.03			
WG280988LFB	LFB	04/20/10 22:38	II100409-2	.5		.534	mg/L	106.8	85	115			
L81638-09AS	AS	04/20/10 22:50	II100409-2	.5	U	.542	mg/L	108.4	85	115			
L81638-09ASD	ASD	04/20/10 22:53	II100409-2	.5	U	.53	mg/L	106	85	115	2.24	20	
L81639-08AS	AS	04/20/10 23:31	II100409-2	.5	U	.535	mg/L	107	85	115			
L81639-08ASD	ASD	04/20/10 23:34	II100409-2	.5	U	.518	mg/L	103.6	85	115	3.23	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281481													
WG281481ICV	ICV	04/28/10 21:05	WI100323-9	2.416		2.501	mg/L	103.5	90	110			
WG281481ICB	ICB	04/28/10 21:06				U	mg/L		-0.06	0.06			
WG281482													
WG281482LFB1	LFB	04/28/10 22:19	WI100319-1	2		1.929	mg/L	96.5	90	110			
WG281482ICV	ICV	04/28/10 23:27	WI100323-9	2.416		2.509	mg/L	103.8	90	110			
WG281482ICB	ICB	04/28/10 23:28				U	mg/L		-0.06	0.06			
WG281482LFB2	LFB	04/28/10 23:36	WI100319-1	2		1.979	mg/L	99	90	110			
L81639-01AS	AS	04/28/10 23:38	WI100319-1	2	1.09	2.987	mg/L	94.9	90	110			
L81639-02DUP	DUP	04/28/10 23:41			1.8	1.805	mg/L				0.3	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81639**

Project ID: ZS01BN

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280868													
WG280868PBW	PBW	04/16/10 14:40				U	mg/L		-20	20			
WG280868LCSW	LCSW	04/16/10 14:40	PCN34141	260		252	mg/L	96.9	80	120			
L81639-08DUP	DUP	04/16/10 14:49			1420	1430	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
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.04615	mg/L	92.3	90	110			
WG281155ICB	ICB	04/25/10 3:06				.00013	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.05005		.04865	mg/L	97.2	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.05005	.0003	.05272	mg/L	104.7	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.05005	.0003	.04934	mg/L	98	70	130	6.62	20	

Sulfate 375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281318													
WG281318ICB	ICB	04/26/10 13:39				U	mg/L		-3	3			
WG281318ICV	ICV	04/26/10 13:39	WI100413-1	20.08		19.7	mg/L	98.1	90	110			
WG281318LFB	LFB	04/26/10 15:30	WI091020-3	10		10	mg/L	100	90	110			
L81638-02DUP	DUP	04/26/10 15:57			1700	1640	mg/L				3.6	20	
L81638-03AS	AS	04/26/10 15:57	SO4TURB10	10	1700	1560	mg/L	-1400	90	110			M3
L81639-02DUP	DUP	04/26/10 16:09			900	950	mg/L				5.4	20	RA
L81639-03AS	AS	04/26/10 16:10	SO4TURB10	10	1600	1630	mg/L	300	90	110			M3
WG281381													
WG281381ICB	ICB	04/27/10 13:56				U	mg/L		-3	3			
WG281381ICV	ICV	04/27/10 13:56	WI100413-1	20.08		20.1	mg/L	100.1	90	110			
WG281381LFB	LFB	04/27/10 14:20	WI091020-3	10		10.2	mg/L	102	90	110			
L81567-01DUP	DUP	04/27/10 14:36			92	94	mg/L				2.2	20	
L81567-02AS	AS	04/27/10 14:43	SO4TURB5	10	94	94.4	mg/L	4	90	110			M3

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280755													
WG280755ICV	ICV	04/14/10 17:55	WI100301-1	50.2		50.71	mg/L	101	90	110			
WG280755ICB	ICB	04/14/10 18:16				U	mg/L		-1.5	1.5			
WG281188													
L81637-02DUP	DUP	04/23/10 22:52			99.5	99.73	mg/L				0.2	20	
WG281188LFB	LFB	04/26/10 15:48	WI100407-3	30		29.06	mg/L	96.9	90	110			
L81637-02AS	AS	04/26/10 17:55	WI100407-3	150	90	225.5	mg/L	90.3	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81639**

Project ID: ZS01BN

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281155													
WG281155ICV	ICV	04/25/10 3:02	MS100329-2	.05		.05508	mg/L	110.2	90	110			
WG281155ICB	ICB	04/25/10 3:06				U	mg/L		-0.00022	0.00022			
WG281155LFB	LFB	04/25/10 3:13	MS100416-3	.0501		.05087	mg/L	101.5	85	115			
L81639-01AS	AS	04/25/10 4:10	MS100416-3	.0501	U	.05233	mg/L	104.5	70	130			
L81639-01ASD	ASD	04/25/10 4:13	MS100416-3	.0501	U	.04942	mg/L	98.6	70	130	5.72	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L81639

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81639-01	WG281318	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.
L81639-02	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81639-03	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81639-04	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81639-05	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81639-06	WG281381	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.
L81639-07	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81639-08	WG281381	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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81639**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81639
 Date Received: 04/16/2010 11:17
 Received By: gac
 Date Printed: 4/16/2010

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)
2460		4.9	14

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81639
 Date Received: 04/16/2010 11:17
 Received By: gac
 Date Printed: 4/16/2010

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
L81639-01	MH-25A		Y		Y							<input type="checkbox"/>
L81639-02	MH-25B		Y		Y							<input type="checkbox"/>
L81639-03	MH-25C		Y		Y							<input type="checkbox"/>
L81639-04	MH-26A		Y		Y							<input type="checkbox"/>
L81639-05	MH-26B		Y		Y							<input type="checkbox"/>
L81639-06	MH-26C		Y		Y							<input type="checkbox"/>
L81639-07	DUP20100412B		Y		Y							<input type="checkbox"/>
L81639-08	DUP20100413B		Y		Y							<input type="checkbox"/>
L81639-09	MH-30		Y		Y							<input type="checkbox"/>

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

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

May 7, 2010

Cc: **Ben Daigneau**

Project ID: ZS01BN
ACZ Project ID: L81640- **SULFATE ONLY**

Aaron Hilshorst:

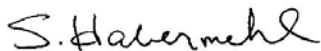
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 16, 2010. This project was assigned to ACZ's project number, L81640. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81640. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-14

ACZ Sample ID: **L81640-01**

Date Sampled: 04/15/10 10:24

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	04/26/10 15:54	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-15W

ACZ Sample ID: **L81640-02**

Date Sampled: 04/15/10 11:51

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/26/10 15:54	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-16W

ACZ Sample ID: **L81640-03**

Date Sampled: 04/15/10 12:45

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	94		*	mg/L	5	30	04/26/10 15:42	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-28

ACZ Sample ID: **L81640-04**

Date Sampled: 04/15/10 11:18

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1900		*	mg/L	100	500	04/26/10 16:42	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-29

ACZ Sample ID: **L81640-05**

Date Sampled: 04/15/10 12:20

Date Received: 04/16/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	100	500	04/26/10 16:42	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

Project ID: ZS01BN

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.02		.01964	mg/L	98.2	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.00088	0.00088			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.01		.01022	mg/L	102.2	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.01	U	.01104	mg/L	110.4	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.01	U	.01132	mg/L	113.2	70	130	2.5	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.05		.05066	mg/L	101.3	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.0011	0.0011			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.05005		.05171	mg/L	103.3	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.05005	U	.05547	mg/L	110.8	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.05005	U	.05567	mg/L	111.2	70	130	0.36	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.05		.04926	mg/L	98.5	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.00022	0.00022			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.05005		.04943	mg/L	98.8	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.05005	U	.05173	mg/L	103.4	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.05005	U	.05178	mg/L	103.5	70	130	0.1	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.05		.04951	mg/L	99	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.00022	0.00022			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.05005		.05048	mg/L	100.9	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.05005	U	.05024	mg/L	100.4	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.05005	U	.05026	mg/L	100.4	70	130	0.04	20	

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280977													
WG280977ICV	ICV	04/20/10 18:06	II100311-1	2		2.092	mg/L	104.6	95	105			
WG280977ICB	ICB	04/20/10 18:10				U	mg/L		-0.03	0.03			
WG280977LFB	LFB	04/20/10 18:22	II100409-2	.5		.534	mg/L	106.8	85	115			
L81631-03AS	AS	04/20/10 19:13	II100409-2	.5	U	.555	mg/L	111	85	115			
L81631-03ASD	ASD	04/20/10 19:16	II100409-2	.5	U	.563	mg/L	112.6	85	115	1.43	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

Project ID: **ZS01BN**

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280977													
WG280977ICV	ICV	04/20/10 18:06	II100311-1	2.002		2.092	mg/L	104.5	95	105			
WG280977ICB	ICB	04/20/10 18:10				U	mg/L		-0.03	0.03			
WG280977LFB	LFB	04/20/10 18:22	II100409-2	.5		.52	mg/L	104	85	115			
L81631-03AS	AS	04/20/10 19:13	II100409-2	.5	U	.537	mg/L	107.4	85	115			
L81631-03ASD	ASD	04/20/10 19:16	II100409-2	.5	U	.553	mg/L	110.6	85	115	2.94	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280977													
WG280977ICV	ICV	04/20/10 18:06	II100311-1	2		1.953	mg/L	97.7	95	105			
WG280977ICB	ICB	04/20/10 18:10				U	mg/L		-0.03	0.03			
WG280977LFB	LFB	04/20/10 18:22	II100409-2	.5		.511	mg/L	102.2	85	115			
L81631-03AS	AS	04/20/10 19:13	II100409-2	.5	U	.529	mg/L	105.8	85	115			
L81631-03ASD	ASD	04/20/10 19:16	II100409-2	.5	U	.538	mg/L	107.6	85	115	1.69	20	

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281094													
WG281094ICV	ICV	04/22/10 10:31	WC100420-1	2		1.91	mg/L	95.5	95	105			
WG281094ICB	ICB	04/22/10 10:39				U	mg/L		-0.3	0.3			
WG281094LFB1	LFB	04/22/10 10:49	WC100112-3	5		4.82	mg/L	96.4	90	110			
WG281094LFB2	LFB	04/22/10 13:54	WC100112-3	5		4.73	mg/L	94.6	90	110			
L81639-08AS	AS	04/22/10 15:19	WC100112-3	5	.3	5.1	mg/L	96	90	110			
L81639-08DUP	DUP	04/22/10 15:24			.3	.3	mg/L				0	20	RA

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281066													
WG281066ICV	ICV	04/21/10 16:54	MS100329-2	.05		.05157	mg/L	103.1	90	110			
WG281066ICB	ICB	04/21/10 16:57				U	mg/L		-0.00022	0.00022			
WG281066LFB	LFB	04/21/10 17:03	MS100416-3	.05005		.0433	mg/L	86.5	85	115			
L81613-05AS	AS	04/21/10 17:51	MS100416-3	.05005	U	.04476	mg/L	89.4	70	130			
L81613-05ASD	ASD	04/21/10 17:54	MS100416-3	.05005	U	.04458	mg/L	89.1	70	130	0.4	20	
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.05		.04672	mg/L	93.4	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.00022	0.00022			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.05005		.04809	mg/L	96.1	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.05005	.0001	.04968	mg/L	99.1	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.05005	.0001	.05	mg/L	99.7	70	130	0.64	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

Project ID: ZS01BN

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280977													
WG280977ICV	ICV	04/20/10 18:06	II100311-1	100		103.4	mg/L	103.4	95	105			
WG280977ICB	ICB	04/20/10 18:10				U	mg/L		-0.6	0.6			
WG280977LFB	LFB	04/20/10 18:22	II100409-2	49.99941		50.66	mg/L	101.3	85	115			
L81631-03AS	AS	04/20/10 19:13	II100409-2	49.99941	7.8	60.77	mg/L	105.9	85	115			
L81631-03ASD	ASD	04/20/10 19:16	II100409-2	49.99941	7.8	61.05	mg/L	106.5	85	115	0.46	20	

WG281035

WG281035ICV	ICV	04/21/10 11:00	II100311-1	100		100.21	mg/L	100.2	95	105			
WG281035ICB	ICB	04/21/10 11:04				U	mg/L		-0.6	0.6			
WG281035LFB	LFB	04/21/10 11:17	II100409-2	49.99941		49.42	mg/L	98.8	85	115			
L81631-03AS	AS	04/21/10 12:02	II100409-2	49.99941	7.5	58.6	mg/L	102.2	85	115			
L81631-03ASD	ASD	04/21/10 12:05	II100409-2	49.99941	7.5	58.76	mg/L	102.5	85	115	0.27	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281035													
WG281035ICV	ICV	04/21/10 11:00	II100311-1	2		1.991	mg/L	99.6	95	105			
WG281035ICB	ICB	04/21/10 11:04				U	mg/L		-0.03	0.03			
WG281035LFB	LFB	04/21/10 11:17	II100409-2	.5		.492	mg/L	98.4	85	115			
L81631-03AS	AS	04/21/10 12:02	II100409-2	.5	U	.499	mg/L	99.8	85	115			
L81631-03ASD	ASD	04/21/10 12:05	II100409-2	.5	U	.491	mg/L	98.2	85	115	1.62	20	

WG281102

WG281102ICV	ICV	04/22/10 11:32	II100311-1	2		1.938	mg/L	96.9	95	105			
WG281102ICB	ICB	04/22/10 11:35				U	mg/L		-0.03	0.03			

WG281101

WG281101LFB	LFB	04/22/10 13:42	II100409-2	.5		.473	mg/L	94.6	85	115			
L81618-07AS	AS	04/22/10 14:31	II100409-2	1	3.51	4.248	mg/L	73.8	85	115			M3
L81618-07ASD	ASD	04/22/10 14:34	II100409-2	1	3.51	4.252	mg/L	74.2	85	115	0.09	20	M3

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280977													
WG280977ICV	ICV	04/20/10 18:06	II100311-1	2.002		1.965	mg/L	98.2	95	105			
WG280977ICB	ICB	04/20/10 18:10				U	mg/L		-0.03	0.03			
WG280977LFB	LFB	04/20/10 18:22	II100409-2	.5		.516	mg/L	103.2	85	115			
L81631-03AS	AS	04/20/10 19:13	II100409-2	.5	U	.532	mg/L	106.4	85	115			
L81631-03ASD	ASD	04/20/10 19:16	II100409-2	.5	U	.541	mg/L	108.2	85	115	1.68	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

Project ID: ZS01BN

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281399													
WG281399ICV	ICV	04/27/10 19:29	WI100323-9	2.416		2.483	mg/L	102.8	90	110			
WG281399ICB	ICB	04/27/10 19:30				U	mg/L		-0.06	0.06			
WG281405													
WG281405LFB	LFB	04/27/10 23:04	WI100319-1	2		1.995	mg/L	99.8	90	110			
L81513-03AS	AS	04/28/10 0:06	WI100319-1	20	13.4	34.69	mg/L	106.5	90	110			
L81513-04DUP	DUP	04/28/10 0:08			10.5	10.56	mg/L				0.6	20	

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG280933													
WG280933PBW	PBW	04/19/10 15:30				U	mg/L		-20	20			
WG280933LCSW	LCSW	04/19/10 15:32	PCN34141	260		258	mg/L	99.2	80	120			
L81649-02DUP	DUP	04/19/10 16:30			3270	3304	mg/L				1	20	
WG281008													
WG281008PBW	PBW	04/20/10 14:40				U	mg/L		-20	20			
WG281008LCSW	LCSW	04/20/10 14:40	PCN34141	260		260	mg/L	100	80	120			
L81686-04DUP	DUP	04/20/10 14:54			860	856	mg/L				0.5	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.05		.0504	mg/L	100.8	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.00022	0.00022			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.05005		.04996	mg/L	99.8	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.05005	.0014	.06036	mg/L	117.8	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.05005	.0014	.06132	mg/L	119.7	70	130	1.58	20	

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281318													
WG281318ICB	ICB	04/26/10 13:39				U	mg/L		-3	3			
WG281318ICV	ICV	04/26/10 13:39	WI100413-1	20.08		19.7	mg/L	98.1	90	110			
WG281318LFB	LFB	04/26/10 15:30	WI091020-3	10		10	mg/L	100	90	110			
L81639-02DUP	DUP	04/26/10 16:09			900	950	mg/L				5.4	20	RA
L81639-03AS	AS	04/26/10 16:10	SO4TURB10	10	1600	1630	mg/L	300	90	110			M3
WG281320													
WG281320ICB	ICB	04/26/10 13:39				U	mg/L		-3	3			
WG281320ICV	ICV	04/26/10 13:39	WI100413-1	20.08		19.7	mg/L	98.1	90	110			
WG281320LFB	LFB	04/26/10 16:31	WI091020-3	10		10	mg/L	100	90	110			
L81640-04DUP	DUP	04/26/10 16:42			1900	1860	mg/L				2.1	20	
L81640-05AS	AS	04/26/10 16:42	SO4TURB10	10	1700	1510	mg/L	-1900	90	110			M3

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

Project ID: ZS01BN

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281153													
WG281153ICV	ICV	04/22/10 18:46	MS100329-2	.05		.05251	mg/L	105	90	110			
WG281153ICB	ICB	04/22/10 18:49				U	mg/L		-0.00022	0.00022			
WG281153LFB	LFB	04/22/10 18:54	MS100416-3	.0501		.05054	mg/L	100.9	85	115			
L81626-01AS	AS	04/22/10 19:40	MS100416-3	.0501	U	.05285	mg/L	105.5	70	130			
L81626-01ASD	ASD	04/22/10 19:43	MS100416-3	.0501	U	.05345	mg/L	106.7	70	130	1.13	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81640-01	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81640-02	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81640-03	WG281318	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.
			375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81640-04	WG281320	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.
L81640-05	WG281320	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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81640**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81640
Date Received: 04/16/2010 11:19
Received By: gac
Date Printed: 4/16/2010

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)
NA10638	6.3	14

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81640
 Date Received: 04/16/2010 11:19
 Received By: gac
 Date Printed: 4/16/2010

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
L81640-01	MH-14		Y		Y							<input type="checkbox"/>
L81640-02	MH-15W		Y		Y							<input type="checkbox"/>
L81640-03	MH-16W		Y		Y							<input type="checkbox"/>
L81640-04	MH-28		Y		Y							<input type="checkbox"/>
L81640-05	MH-29		Y		Y							<input type="checkbox"/>

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

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

May 7, 2010

Cc: **Ben Daigneau**

Project ID: ZS01BN
ACZ Project ID: L81753- **SULFATE ONLY**

Aaron Hilshorst:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 23, 2010. This project was assigned to ACZ's project number, L81753. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81753. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-13A

ACZ Sample ID: **L81753-01**

Date Sampled: 04/21/10 10:33

Date Received: 04/23/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1700		*	mg/L	50	300	05/03/10 13:19	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-13B

ACZ Sample ID: **L81753-02**

Date Sampled: 04/21/10 09:52

Date Received: 04/23/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1030		*	mg/L	50	300	05/03/10 13:19	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-13C

ACZ Sample ID: **L81753-03**

Date Sampled: 04/21/10 10:37

Date Received: 04/23/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	27	B	*	mg/L	5	30	05/03/10 13:06	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-14

ACZ Sample ID: **L81753-04**

Date Sampled: 04/21/10 13:40

Date Received: 04/23/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1900		*	mg/L	100	500	05/03/10 13:20	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81753**

Project ID: ZS01BN

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281314													
WG281314ICV	ICV	04/27/10 15:11	MS100329-2	.02		.01959	mg/L	98	90	110			
WG281314ICB	ICB	04/27/10 15:14				.00043	mg/L		-0.00088	0.00088			
WG281314LFB	LFB	04/27/10 15:20	MS100416-3	.01		.00991	mg/L	99.1	85	115			
L81749-02AS	AS	04/27/10 16:06	MS100416-3	.01	U	.00974	mg/L	97.4	70	130			
L81749-02ASD	ASD	04/27/10 16:09	MS100416-3	.01	U	.01029	mg/L	102.9	70	130	5.49	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281314													
WG281314ICV	ICV	04/27/10 15:11	MS100329-2	.05		.05124	mg/L	102.5	90	110			
WG281314ICB	ICB	04/27/10 15:14			U		mg/L		-0.0011	0.0011			
WG281314LFB	LFB	04/27/10 15:20	MS100416-3	.05005		.05218	mg/L	104.3	85	115			
L81749-02AS	AS	04/27/10 16:06	MS100416-3	.05005	.0006	.05607	mg/L	110.8	70	130			
L81749-02ASD	ASD	04/27/10 16:09	MS100416-3	.05005	.0006	.0579	mg/L	114.5	70	130	3.21	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281314													
WG281314ICV	ICV	04/27/10 15:11	MS100329-2	.05		.04902	mg/L	98	90	110			
WG281314ICB	ICB	04/27/10 15:14			U		mg/L		-0.00022	0.00022			
WG281314LFB	LFB	04/27/10 15:20	MS100416-3	.05005		.04838	mg/L	96.7	85	115			
L81749-02AS	AS	04/27/10 16:06	MS100416-3	.05005	U	.05708	mg/L	114	70	130			
L81749-02ASD	ASD	04/27/10 16:09	MS100416-3	.05005	U	.05822	mg/L	116.3	70	130	1.98	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281314													
WG281314ICV	ICV	04/27/10 15:11	MS100329-2	.05		.05017	mg/L	100.3	90	110			
WG281314ICB	ICB	04/27/10 15:14			U		mg/L		-0.00022	0.00022			
WG281314LFB	LFB	04/27/10 15:20	MS100416-3	.05005		.05007	mg/L	100	85	115			
L81749-02AS	AS	04/27/10 16:06	MS100416-3	.05005	U	.05247	mg/L	104.8	70	130			
L81749-02ASD	ASD	04/27/10 16:09	MS100416-3	.05005	U	.05399	mg/L	107.9	70	130	2.86	20	

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281354													
WG281354ICV	ICV	04/28/10 13:02	II100311-1	2		2.019	mg/L	101	95	105			
WG281354ICB	ICB	04/28/10 13:06			U		mg/L		-0.03	0.03			
WG281354LFB	LFB	04/28/10 13:18	II100426-2	.5		.53	mg/L	106	85	115			
L81749-01AS	AS	04/28/10 13:25	II100426-2	.5	U	.542	mg/L	108.4	85	115			
L81749-01ASD	ASD	04/28/10 13:28	II100426-2	.5	U	.558	mg/L	111.6	85	115	2.91	20	
L81753-04AS	AS	04/28/10 14:07	II100426-2	.5	U	.559	mg/L	111.8	85	115			
L81753-04ASD	ASD	04/28/10 14:10	II100426-2	.5	U	.553	mg/L	110.6	85	115	1.08	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81753**

Project ID: ZS01BN

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281354													
WG281354ICV	ICV	04/28/10 13:02	II100311-1	2.002		2.052	mg/L	102.5	95	105			
WG281354ICB	ICB	04/28/10 13:06				U	mg/L		-0.03	0.03			
WG281354LFB	LFB	04/28/10 13:18	II100426-2	.5		.527	mg/L	105.4	85	115			
L81749-01AS	AS	04/28/10 13:25	II100426-2	.5	U	.535	mg/L	107	85	115			
L81749-01ASD	ASD	04/28/10 13:28	II100426-2	.5	U	.557	mg/L	111.4	85	115	4.03	20	
L81753-04AS	AS	04/28/10 14:07	II100426-2	.5	U	.553	mg/L	110.6	85	115			
L81753-04ASD	ASD	04/28/10 14:10	II100426-2	.5	U	.557	mg/L	111.4	85	115	0.72	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281354													
WG281354ICV	ICV	04/28/10 13:02	II100311-1	2		1.945	mg/L	97.3	95	105			
WG281354ICB	ICB	04/28/10 13:06				U	mg/L		-0.03	0.03			
WG281354LFB	LFB	04/28/10 13:18	II100426-2	.5		.509	mg/L	101.8	85	115			
L81749-01AS	AS	04/28/10 13:25	II100426-2	.5	U	.519	mg/L	103.8	85	115			
L81749-01ASD	ASD	04/28/10 13:28	II100426-2	.5	U	.542	mg/L	108.4	85	115	4.34	20	
L81753-04AS	AS	04/28/10 14:07	II100426-2	.5	U	.502	mg/L	100.4	85	115			
L81753-04ASD	ASD	04/28/10 14:10	II100426-2	.5	U	.511	mg/L	102.2	85	115	1.78	20	

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281489													
WG281489ICV	ICV	04/29/10 10:03	WC100420-1	2		2.01	mg/L	100.5	95	105			
WG281489ICB	ICB	04/29/10 10:11				U	mg/L		-0.3	0.3			
WG281489LFB1	LFB	04/29/10 10:22	WC100112-3	5		5	mg/L	100	90	110			
L81750-04DUP	DUP	04/29/10 12:12			13.2	13.07	mg/L				1	20	
L81750-05AS	AS	04/29/10 12:26	WC100112-3	5	6.7	11.54	mg/L	96.8	90	110			
WG281489LFB2	LFB	04/29/10 13:39	WC100112-3	5		5	mg/L	100	90	110			

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281443													
WG281443ICV	ICV	04/28/10 17:21	MS100329-2	.05		.04553	mg/L	91.1	90	110			
WG281443ICB	ICB	04/28/10 17:24				U	mg/L		-0.00022	0.00022			
WG281443LFB	LFB	04/28/10 17:30	MS100416-3	.05005		.04652	mg/L	92.9	85	115			
L81749-06AS	AS	04/28/10 18:17	MS100416-3	.05005	U	.0466	mg/L	93.1	70	130			
L81749-06ASD	ASD	04/28/10 18:19	MS100416-3	.05005	U	.04677	mg/L	93.4	70	130	0.36	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81753**

Project ID: ZS01BN

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281354													
WG281354 CV	ICV	04/28/10 13:02	II100311-1	100		100.29	mg/L	100.3	95	105			
WG281354 CB	ICB	04/28/10 13:06				U	mg/L		-0.6	0.6			
WG281354 LFB	LFB	04/28/10 13:18	II100426-2	49.99941		53.47	mg/L	106.9	85	115			
L81749-01AS	AS	04/28/10 13:25	II100426-2	49.99941	6.8	61.56	mg/L	109.5	85	115			
L81749-01ASD	ASD	04/28/10 13:28	II100426-2	49.99941	6.8	62.64	mg/L	111.7	85	115	1.74	20	
L81753-04AS	AS	04/28/10 14:07	II100426-2	49.99941	141	199.34	mg/L	116.7	85	115			MA
L81753-04ASD	ASD	04/28/10 14:10	II100426-2	49.99941	141	198.51	mg/L	115	85	115	0.42	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281354													
WG281354 CV	ICV	04/28/10 13:02	II100311-1	2		2.018	mg/L	100.9	95	105			
WG281354 CB	ICB	04/28/10 13:06				U	mg/L		-0.03	0.03			
WG281354 LFB	LFB	04/28/10 13:18	II100426-2	.5		.547	mg/L	109.4	85	115			
L81749-01AS	AS	04/28/10 13:25	II100426-2	.5	U	.528	mg/L	105.6	85	115			
L81749-01ASD	ASD	04/28/10 13:28	II100426-2	.5	U	.544	mg/L	108.8	85	115	2.99	20	
L81753-04AS	AS	04/28/10 14:07	II100426-2	.5	.05	.599	mg/L	109.8	85	115			
L81753-04ASD	ASD	04/28/10 14:10	II100426-2	.5	.05	.606	mg/L	111.2	85	115	1.16	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281354													
WG281354 CV	ICV	04/28/10 13:02	II100311-1	2.002		1.953	mg/L	97.6	95	105			
WG281354 CB	ICB	04/28/10 13:06				U	mg/L		-0.03	0.03			
WG281354 LFB	LFB	04/28/10 13:18	II100426-2	.5		.54	mg/L	108	85	115			
L81749-01AS	AS	04/28/10 13:25	II100426-2	.5	.02	.56	mg/L	108	85	115			
L81749-01ASD	ASD	04/28/10 13:28	II100426-2	.5	.02	.565	mg/L	109	85	115	0.89	20	
L81753-04AS	AS	04/28/10 14:07	II100426-2	.5	.03	.59	mg/L	112	85	115			
L81753-04ASD	ASD	04/28/10 14:10	II100426-2	.5	.03	.593	mg/L	112.6	85	115	0.51	20	

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281668													
WG281668 CV	ICV	05/01/10 15:02	WI100323-9	2.416		2.532	mg/L	104.8	90	110			
WG281668 CB	ICB	05/01/10 15:04				U	mg/L		-0.06	0.06			
WG281670													
WG281670 LFB	LFB	05/01/10 16:24	WI100319-1	2		2.104	mg/L	105.2	90	110			
L81752-01AS	AS	05/01/10 16:47	WI100319-1	30	20.7	52.04	mg/L	104.5	90	110			
L81752-02DUP	DUP	05/01/10 16:50			21.2	21.16	mg/L				0.2	20	

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281216													
WG281216 PBW	PBW	04/23/10 14:35				U	mg/L		-20	20			
WG281216 LCSW	LCSW	04/23/10 14:35	PCN34141	260		260	mg/L	100	80	120			
L81753-04DUP	DUP	04/23/10 14:49			3210	3212	mg/L				0.1	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81753**

Project ID: ZS01BN

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281314													
WG281314 CV	ICV	04/27/10 15:11	MS100329-2	.05		.05167	mg/L	103.3	90	110			
WG281314 CB	ICB	04/27/10 15:14				U	mg/L		-0.00022	0.00022			
WG281314 LFB	LFB	04/27/10 15:20	MS100416-3	.05005		.05253	mg/L	105	85	115			
L81749-02AS	AS	04/27/10 16:06	MS100416-3	.05005	.0068	.06871	mg/L	123.7	70	130			
L81749-02ASD	ASD	04/27/10 16:09	MS100416-3	.05005	.0068	.06942	mg/L	125.1	70	130	1.03	20	

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281688													
WG281688 CB	ICB	05/03/10 12:49				U	mg/L		-3	3			
WG281688 CV	ICV	05/03/10 12:49	WI100428-1	20.08		20.2	mg/L	100.6	90	110			
WG281688 LFB	LFB	05/03/10 12:58	WI091020-3	10		9.5	mg/L	95	90	110			
L81750-04DUP	DUP	05/03/10 13:06			164	169.3	mg/L				3.2	20	
L81750-05AS	AS	05/03/10 13:17	SO4TURB10	10	220	220	mg/L	0	90	110			M3

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281314													
WG281314 CV	ICV	04/27/10 15:11	MS100329-2	.05		.05343	mg/L	106.9	90	110			
WG281314 CB	ICB	04/27/10 15:14				U	mg/L		-0.00022	0.00022			
WG281314 LFB	LFB	04/27/10 15:20	MS100416-3	.0501		.05005	mg/L	99.9	85	115			
L81749-02AS	AS	04/27/10 16:06	MS100416-3	.0501	U	.05072	mg/L	101.2	70	130			
L81749-02ASD	ASD	04/27/10 16:09	MS100416-3	.0501	U	.05188	mg/L	103.6	70	130	2.26	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81753**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81753-01	WG281688	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.
L81753-02	WG281688	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.
L81753-03	WG281688	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.
L81753-04	WG281688	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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81753**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81753
 Date Received: 04/23/2010 10:20
 Received By: gac
 Date Printed: 4/23/2010

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)
2937		3.8	12

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

Notes

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81753
 Date Received: 04/23/2010 10:20
 Received By: gac
 Date Printed: 4/23/2010

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
L81753-01	MH-13A		Y		Y							<input type="checkbox"/>
L81753-02	MH-13B		Y		Y							<input type="checkbox"/>
L81753-03	MH-13C		Y		Y							<input type="checkbox"/>
L81753-04	IW-14		Y		Y							<input type="checkbox"/>

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

C81753



Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail: bdaigneau@clearcreekassociates.com

Telephone: 520-622-3222

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01BN

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION DATE: TIME Matrix

MH-13A 04/21/10 10:33 GW 3

MH-13B 04/21/10 09:52 GW 3

MH-13C 04/21/10 10:37 GW 3

IW-14 04/21/10 13:40 GW 3

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

REMARKS

Copy of report to Ben Daigneau contains only "SO4" results with QC Summary.

UPS Tracking # 1Z 867 7E4 23 1000 7492

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

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

AARON HILSHORST 4-22-10 15:30

BEN DAIGNEAU 4-23-10 15:20

FRMAD050.01.15.09

White - Return with sample.

Yellow - Retain for your records.

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

May 14, 2010

Cc: **Ben Daigneau**

Project ID: ZS01BN
ACZ Project ID: L81886- **SULFATE ONLY**

Aaron Hilshorst:

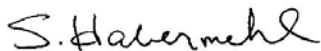
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 30, 2010. This project was assigned to ACZ's project number, L81886. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L81886. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-10

ACZ Sample ID: **L81886-01**

Date Sampled: 04/26/10 13:57

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1500		*	mg/L	100	500	05/09/10 12:24	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: EQ BLANK

ACZ Sample ID: **L81886-02**

Date Sampled: 04/26/10 10:15

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	5		*	mg/L	1	5	05/09/10 12:08	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: FIELD BLANK

ACZ Sample ID: **L81886-03**

Date Sampled: 04/26/10 10:10

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric		U	*	mg/L	1	5	05/09/10 12:08	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: MH-11

ACZ Sample ID: **L81886-04**

Date Sampled: 04/27/10 13:23

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1400		*	mg/L	100	500	05/09/10 12:37	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-12

ACZ Sample ID: **L81886-05**

Date Sampled: 04/29/10 08:30

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1500		*	mg/L	100	500	05/09/10 12:36	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-18

ACZ Sample ID: **L81886-06**

Date Sampled: 04/29/10 08:45

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	05/09/10 12:36	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: IW-20

ACZ Sample ID: **L81886-07**

Date Sampled: 04/29/10 09:05

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1600		*	mg/L	100	500	05/09/10 12:36	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01BN

Sample ID: DUP20100426A

ACZ Sample ID: **L81886-08**

Date Sampled: 04/26/10 00:00

Date Received: 04/30/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	1400		*	mg/L	100	500	05/09/10 12:36	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81886**

Project ID: ZS01BN

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.02		.02037	mg/L	101.9	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.00088	0.00088			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.01		.00976	mg/L	97.6	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.01	U	.00916	mg/L	91.6	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.01	U	.00882	mg/L	88.2	70	130	3.78	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.05		.04964	mg/L	99.3	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.0011	0.0011			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.05005		.04822	mg/L	96.3	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.05005	U	.05014	mg/L	100.2	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.05005	U	.04926	mg/L	98.4	70	130	1.77	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.05		.04905	mg/L	98.1	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.00022	0.00022			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.05005		.04997	mg/L	99.8	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.05005	U	.04651	mg/L	92.9	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.05005	U	.04592	mg/L	91.7	70	130	1.28	20	

WG282240

WG282240ICV	ICV	05/13/10 15:51	MS100329-2	.05		.04603	mg/L	92.1	90	110			
WG282240ICB	ICB	05/13/10 15:54				U	mg/L		-0.00022	0.00022			
WG282240LFB	LFB	05/13/10 16:01	MS100507-2	.05005		.04809	mg/L	96.1	85	115			
L81881-03AS	AS	05/13/10 16:08	MS100507-2	.25025	U	.2406	mg/L	96.1	70	130			
L81881-03ASD	ASD	05/13/10 16:11	MS100507-2	.25025	U	.23905	mg/L	95.5	70	130	0.65	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.05		.04953	mg/L	99.1	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.00022	0.00022			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.05005		.0492	mg/L	98.3	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.05005	U	.05017	mg/L	100.2	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.05005	U	.04995	mg/L	99.8	70	130	0.44	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81886**

Project ID: ZS01BN

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281781													
WG281781ICV	ICV	05/05/10 21:11	II100311-1	2		2.012	mg/L	100.6	95	105			
WG281781ICB	ICB	05/05/10 21:15				U	mg/L		-0.03	0.03			
WG281781LFB	LFB	05/05/10 21:28	II100430-2	.5		.532	mg/L	106.4	85	115			
L81883-04AS	AS	05/05/10 21:34	II100430-2	.5	U	.548	mg/L	109.6	85	115			
L81883-04ASD	ASD	05/05/10 21:37	II100430-2	.5	U	.543	mg/L	108.6	85	115	0.92	20	
L81890-01AS	AS	05/05/10 22:31	II100430-2	.5	U	.595	mg/L	119	85	115			MA
L81890-01ASD	ASD	05/05/10 22:34	II100430-2	.5	U	.551	mg/L	110.2	85	115	7.68	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281781													
WG281781ICV	ICV	05/05/10 21:11	II100311-1	2.002		2.051	mg/L	102.4	95	105			
WG281781ICB	ICB	05/05/10 21:15				U	mg/L		-0.03	0.03			
WG281781LFB	LFB	05/05/10 21:28	II100430-2	.5		.519	mg/L	103.8	85	115			
L81883-04AS	AS	05/05/10 21:34	II100430-2	.5	U	.551	mg/L	110.2	85	115			
L81883-04ASD	ASD	05/05/10 21:37	II100430-2	.5	U	.546	mg/L	109.2	85	115	0.91	20	
L81890-01AS	AS	05/05/10 22:31	II100430-2	.5	U	.559	mg/L	111.8	85	115			
L81890-01ASD	ASD	05/05/10 22:34	II100430-2	.5	U	.547	mg/L	109.4	85	115	2.17	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281781													
WG281781ICV	ICV	05/05/10 21:11	II100311-1	2		1.979	mg/L	99	95	105			
WG281781ICB	ICB	05/05/10 21:15				U	mg/L		-0.03	0.03			
WG281781LFB	LFB	05/05/10 21:28	II100430-2	.5		.521	mg/L	104.2	85	115			
L81883-04AS	AS	05/05/10 21:34	II100430-2	.5	1.01	1.494	mg/L	96.8	85	115			
L81883-04ASD	ASD	05/05/10 21:37	II100430-2	.5	1.01	1.486	mg/L	95.2	85	115	0.54	20	
L81890-01AS	AS	05/05/10 22:31	II100430-2	.5	U	.566	mg/L	113.2	85	115			
L81890-01ASD	ASD	05/05/10 22:34	II100430-2	.5	U	.528	mg/L	105.6	85	115	6.95	20	

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG282082													
WG282082ICV	ICV	05/10/10 10:26	WC100505-1	2		2.01	mg/L	100.5	95	105			
WG282082ICB	ICB	05/10/10 10:33				U	mg/L		-0.3	0.3			
WG282082LFB1	LFB	05/10/10 10:42	WC100112-3	5		4.93	mg/L	98.6	90	110			
L81883-07AS	AS	05/10/10 10:53	WC100112-3	5	U	4.86	mg/L	97.2	90	110			
L81883-07DUP	DUP	05/10/10 11:00			U	U	mg/L				0	20	RA
WG282082LFB2	LFB	05/10/10 13:26	WC100112-3	5		4.86	mg/L	97.2	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81886**

Project ID: ZS01BN

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.05		.04715	mg/L	94.3	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.00022	0.00022			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.05005		.04774	mg/L	95.4	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.05005	U	.04726	mg/L	94.4	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.05005	U	.04735	mg/L	94.6	70	130	0.19	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281781													
WG281781ICV	ICV	05/05/10 21:11	II100311-1	100		101.47	mg/L	101.5	95	105			
WG281781ICB	ICB	05/05/10 21:15				U	mg/L		-0.6	0.6			
WG281781LFB	LFB	05/05/10 21:28	II100430-2	49.99941		53.19	mg/L	106.4	85	115			
L81883-04AS	AS	05/05/10 21:34	II100430-2	49.99941	2.6	65.76	mg/L	126.3	85	115			MA
L81883-04ASD	ASD	05/05/10 21:37	II100430-2	49.99941	2.6	58.68	mg/L	112.2	85	115	11.38	20	
L81890-01AS	AS	05/05/10 22:31	II100430-2	49.99941	15.2	72.4	mg/L	114.4	85	115			
L81890-01ASD	ASD	05/05/10 22:34	II100430-2	49.99941	15.2	71.56	mg/L	112.7	85	115	1.17	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281781													
WG281781ICV	ICV	05/05/10 21:11	II100311-1	2		2.054	mg/L	102.7	95	105			
WG281781ICB	ICB	05/05/10 21:15				.013	mg/L		-0.03	0.03			
WG281781LFB	LFB	05/05/10 21:28	II100430-2	.5		.538	mg/L	107.6	85	115			
L81883-04AS	AS	05/05/10 21:34	II100430-2	.5	U	.634	mg/L	126.8	85	115			MA
L81883-04ASD	ASD	05/05/10 21:37	II100430-2	.5	U	.559	mg/L	111.8	85	115	12.57	20	
L81890-01AS	AS	05/05/10 22:31	II100430-2	.5	U	.559	mg/L	111.8	85	115			
L81890-01ASD	ASD	05/05/10 22:34	II100430-2	.5	U	.554	mg/L	110.8	85	115	0.9	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281781													
WG281781ICV	ICV	05/05/10 21:11	II100311-1	2.002		1.948	mg/L	97.3	95	105			
WG281781ICB	ICB	05/05/10 21:15				U	mg/L		-0.03	0.03			
WG281781LFB	LFB	05/05/10 21:28	II100430-2	.5		.523	mg/L	104.6	85	115			
L81883-04AS	AS	05/05/10 21:34	II100430-2	.5	U	.557	mg/L	111.4	85	115			
L81883-04ASD	ASD	05/05/10 21:37	II100430-2	.5	U	.547	mg/L	109.4	85	115	1.81	20	
L81890-01AS	AS	05/05/10 22:31	II100430-2	.5	U	.554	mg/L	110.8	85	115			
L81890-01ASD	ASD	05/05/10 22:34	II100430-2	.5	U	.546	mg/L	109.2	85	115	1.45	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81886**

Project ID: ZS01BN

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG282072													
WG282072ICV	ICV	05/08/10 15:44	WI100323-9	2.416		2.482	mg/L	102.7	90	110			
WG282072ICB	ICB	05/08/10 15:45				U	mg/L		-0.06	0.06			
WG282072LFB1	LFB	05/08/10 15:49	WI100319-1	2		2.102	mg/L	105.1	90	110			
L81874-01AS	AS	05/08/10 15:52	WI100319-1	2	.04	2.076	mg/L	101.8	90	110			
L81874-02DUP	DUP	05/08/10 15:54			.03	.033	mg/L				9.5	20	RA
L81886-03AS	AS	05/08/10 16:12	WI100319-1	2	U	2.089	mg/L	104.5	90	110			
L81886-04DUP	DUP	05/08/10 16:15			1.38	1.375	mg/L				0.4	20	
WG282072LFB2	LFB	05/08/10 16:31	WI100319-1	2		2.026	mg/L	101.3	90	110			

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281634													
WG281634PBW	PBW	04/30/10 14:15				U	mg/L		-20	20			
WG281634LCSW	LCSW	04/30/10 14:15	PCN34141	260		254	mg/L	97.7	80	120			
L81888-01DUP	DUP	04/30/10 14:29			1050	1058	mg/L				0.8	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.05		.05149	mg/L	103	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.00022	0.00022			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.05005		.04966	mg/L	99.2	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.05005	U	.05033	mg/L	100.6	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.05005	U	.05031	mg/L	100.5	70	130	0.04	20	

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG282081													
WG282081ICB	ICB	05/09/10 10:21				U	mg/L		-3	3			
WG282081ICV1	ICV	05/09/10 10:21	WI100506-1	20		20.8	mg/L	104	90	110			
WG282081LFB	LFB	05/09/10 12:08	WI100506-1	10.04		10.2	mg/L	101.6	90	110			
L81883-05DUP	DUP	05/09/10 12:08			U	U	mg/L				0	20	RA
L81883-06AS	AS	05/09/10 12:08	WI100506-1	10.04	U	10.1	mg/L	100.6	90	110			
L81887-01AS	AS	05/09/10 12:10	SO4TURB20	.5	388	407.9	mg/L		90	110			
L81887-01AS	AS	05/09/10 12:21	SO4TURB20	10	550	505	mg/L	-450	90	110			M3
L81886-08DUP	DUP	05/09/10 12:37			1400	1510	mg/L				7.6	20	

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG281895													
WG281895ICV	ICV	05/11/10 0:27	MS100329-2	.05		.05166	mg/L	103.3	90	110			
WG281895ICB	ICB	05/11/10 0:30				U	mg/L		-0.00022	0.00022			
WG281895LFB	LFB	05/11/10 0:37	MS100416-3	.0501		.04882	mg/L	97.4	85	115			
L81886-02AS	AS	05/11/10 1:40	MS100416-3	.0501	U	.0482	mg/L	96.2	70	130			
L81886-02ASD	ASD	05/11/10 1:44	MS100416-3	.0501	U	.04846	mg/L	96.7	70	130	0.54	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81886**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L81886-01	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-02	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-03	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-04	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-05	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-06	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-07	WG282081	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L81886-08	WG282081	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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L81886**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
 ZS01BN

ACZ Project ID: L81886
 Date Received: 04/30/2010 10:49
 Received By: gac
 Date Printed: 5/2/2010

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)
2240		3.5	14

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

Notes

FMI Gold & Copper - Sierrita
ZS01BN

ACZ Project ID: L81886
Date Received: 04/30/2010 10:49
Received By: gac
Date Printed: 5/2/2010

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
L81886-01	MH-10		Y		Y							<input type="checkbox"/>
L81886-02	EQ BLANK		Y		Y							<input type="checkbox"/>
L81886-03	FIELD BLANK		Y		Y							<input type="checkbox"/>
L81886-04	MH-11		Y		Y							<input type="checkbox"/>
L81886-05	IW-12		Y		Y							<input type="checkbox"/>
L81886-06	IW-18		Y		Y							<input type="checkbox"/>
L81886-07	IW-20		Y		Y							<input type="checkbox"/>
L81886-08	DUP20100426A		Y		Y							<input type="checkbox"/>

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

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

Report to:

Name: Aaron Hilshorst	Address: 6200 W. Duval Mine Road Green Valley, AZ 85614 Telephone: 520-648-8844
Company: Freeport-McMoRan Sierrita Inc.	
E-mail: aaron_hilshorst@fmi.com	

Copy of Report to:

Name: Ben Daigneau	E-mail: bdaigneau@clearcreekassociates.com
Company: Clear Creek Associates	Telephone: 520-622-3222

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

[illegible]

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

REMARKS

Copy of report to Ben Daigneau contains only "SO4" results with QC Summary.

UPS Tracking # 1Z 867 7E4 23 1000 7518

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>[Signature]</i>	4-29-10 15:30	<i>[Signature]</i>	4-30-10 10:49

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

June 23, 2010

Cc: **Ben Daigneau**

Project ID: ZS01KU
ACZ Project ID: L82567– **SULFATE ONLY**

Aaron Hilshorst:

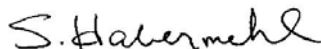
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 08, 2010. This project was assigned to ACZ's project number, L82567. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L82567. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01KU

Sample ID: M-10

ACZ Sample ID: **L82567-01**

Date Sampled: 06/04/10 09:38

Date Received: 06/08/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	121		*	mg/L	5	30	06/14/10 16:54	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01KU

Sample ID: TRI20100604A

ACZ Sample ID: **L82567-02**

Date Sampled: 06/04/10 00:00

Date Received: 06/08/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	110		*	mg/L	20	100	06/14/10 16:55	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01KU

Sample ID: TRI20100604B

ACZ Sample ID: **L82567-03**

Date Sampled: 06/04/10 00:00

Date Received: 06/08/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	122		*	mg/L	5	30	06/14/10 16:54	aml

Arizona license number: AZ0102

FMI Gold & Copper - Sierrita

Project ID: ZS01KU

Sample ID: RT-1

ACZ Sample ID: **L82567-04**

Date Sampled: 06/04/10 11:10

Date Received: 06/08/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	68		*	mg/L	5	30	06/14/10 16:54	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82567**

Project ID: **ZS01KU**

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284307													
WG284307ICV	ICV	06/14/10 20:03	MS100329-2	.05		.05423	mg/L	108.5	90	110			
WG284307ICB	ICB	06/14/10 20:06				U	mg/L		-0.0011	0.0011			
WG284307LFB	LFB	06/14/10 20:13	MS100611-2	.05005		.04785	mg/L	95.6	85	115			
L82317-01AS	AS	06/14/10 21:06	MS100611-2	.1001	.002	.1179	mg/L	115.8	70	130			
L82317-01ASD	ASD	06/14/10 21:09	MS100611-2	.1001	.002	.1187	mg/L	116.6	70	130	0.68	20	

Cadmium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	2		1.9649	mg/L	98.2	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.015	0.015			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	.5		.5093	mg/L	101.9	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	.5	U	.5273	mg/L	105.5	85	115			
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	.5	U	.5171	mg/L	103.4	85	115	1.95	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	100		99.76	mg/L	99.8	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.6	0.6			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	67.99734		68.23	mg/L	100.3	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	67.99734	339	390.77	mg/L	76.1	85	115			M3
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	67.99734	339	381.38	mg/L	62.3	85	115	2.43	20	M3

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	2		1.985	mg/L	99.3	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.03	0.03			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	.5		.513	mg/L	102.6	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	.5	U	.523	mg/L	104.6	85	115			
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	.5	U	.526	mg/L	105.2	85	115	0.57	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284051													
WG284051LCSW1	LCSW	06/09/10 17:46	PCN34415	1408.8		1418	µmhos/cm	100.7	90	110			
WG284051LCSW4	LCSW	06/09/10 21:09	PCN34415	1408.8		1403	µmhos/cm	99.6	90	110			
L82567-01DUP	DUP	06/09/10 22:25			570	571	µmhos/cm				0.2	20	
L82568-07DUP	DUP	06/09/10 23:27			1750	1760	µmhos/cm				0.6	20	
WG284051LCSW7	LCSW	06/09/10 23:35	PCN34415	1408.8		1389	µmhos/cm	98.6	90	110			
WG284051LCSW10	LCSW	06/10/10 2:38	PCN34415	1408.8		1375	µmhos/cm	97.6	90	110			
WG284051LCSW13	LCSW	06/10/10 5:35	PCN34415	1408.8		1367	µmhos/cm	97	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82567**

Project ID: **ZS01KU**

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	2		1.967	mg/L	98.4	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.03	0.03			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	.5		.505	mg/L	101	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	.5	U	.515	mg/L	103	85	115			
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	.5	U	.514	mg/L	102.8	85	115	0.19	20	

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	2		1.975	mg/L	98.8	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.06	0.06			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	1		1.031	mg/L	103.1	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	1	U	1.077	mg/L	107.7	85	115			
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	1	U	1.077	mg/L	107.7	85	115	0	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284307													
WG284307ICV	ICV	06/14/10 20:03	MS100329-2	.05		.05224	mg/L	104.5	90	110			
WG284307ICB	ICB	06/14/10 20:06				U	mg/L		-0.00022	0.00022			
WG284307LFB	LFB	06/14/10 20:13	MS100611-2	.05005		.05013	mg/L	100.2	85	115			
L82317-01AS	AS	06/14/10 21:06	MS100611-2	.1001	.0002	.11092	mg/L	110.6	70	130			
L82317-01ASD	ASD	06/14/10 21:09	MS100611-2	.1001	.0002	.11006	mg/L	109.8	70	130	0.78	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	100		100.2	mg/L	100.2	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.6	0.6			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	50.00131		50.16	mg/L	100.3	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	50.00131	129	181.1	mg/L	104.2	85	115			
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	50.00131	129	177.54	mg/L	97.1	85	115	1.99	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284070													
WG284070ICV	ICV	06/10/10 9:49	II100510-1	2		1.9588	mg/L	97.9	95	105			
WG284070ICB	ICB	06/10/10 9:53				U	mg/L		-0.015	0.015			
WG284070LFB	LFB	06/10/10 10:05	II100608-2	.5		.5376	mg/L	107.5	85	115			
L82558-02AS	AS	06/10/10 10:54	II100608-2	.5	.005	.5408	mg/L	107.2	85	115			
L82558-02ASD	ASD	06/10/10 10:57	II100608-2	.5	.005	.5419	mg/L	107.4	85	115	0.2	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82567**

Project ID: **ZS01KU**

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284051													
WG284051LCSW3	LCSW	06/09/10 18:01	PCN33150	6		6.05	units	100.8	98	102			
WG284051LCSW6	LCSW	06/09/10 21:24	PCN33150	6		6.04	units	100.7	98	102			
L82567-01DUP	DUP	06/09/10 22:25			8.3	8.3	units				0	20	
L82568-07DUP	DUP	06/09/10 23:27			9	9.01	units				0.1	20	
WG284051LCSW9	LCSW	06/09/10 23:50	PCN33150	6		6.04	units	100.7	98	102			
WG284051LCSW12	LCSW	06/10/10 2:53	PCN33150	6		6.04	units	100.7	98	102			
WG284051LCSW15	LCSW	06/10/10 5:50	PCN33150	6		6.04	units	100.7	98	102			

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG283937													
WG283937PBW	PBW	06/08/10 16:05				U	mg/L		-20	20			
WG283937LCSW	LCSW	06/08/10 16:05	PCN34142	260		266	mg/L	102.3	80	120			
L82575-01DUP	DUP	06/08/10 16:19			2040	2044	mg/L				0.2	20	

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284329													
WG284329ICB	ICB	06/14/10 14:09				U	mg/L		-3	3			
WG284329ICV	ICV	06/14/10 14:09	W1100601-1	20		20.1	mg/L	100.5	90	110			
WG284329LFB	LFB	06/14/10 16:26	W1100506-1	10.04		9.6	mg/L	95.6	90	110			
L82559-12DUP	DUP	06/14/10 16:52			U	U	mg/L				0	20	RA
L82559-13AS	AS	06/14/10 16:52	W1100506-1	10.04	U	10.8	mg/L	107.6	90	110			

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284005													
WG284005ICV	ICV	06/09/10 22:57	II100510-1	2		1.967	mg/L	98.4	95	105			
WG284005ICB	ICB	06/09/10 23:01				U	mg/L		-0.03	0.03			
WG284005LFB	LFB	06/09/10 23:13	II100608-2	.5		.516	mg/L	103.2	85	115			
L82558-02AS	AS	06/10/10 0:03	II100608-2	.5	U	.55	mg/L	110	85	115			
L82558-02ASD	ASD	06/10/10 0:06	II100608-2	.5	U	.552	mg/L	110.4	85	115	0.36	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82567**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L82567-01	WG284329	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L82567-02	WG284329	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L82567-03	WG284329	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L82567-04	WG284329	Sulfate	375.4 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82567**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
ZS01KU

ACZ Project ID: L82567
Date Received: 06/08/2010 10:42
Received By: gac
Date Printed: 6/9/2010

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)
1040		0.8	12

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

Notes

FMI Gold & Copper - Sierrita
ZS01KU

ACZ Project ID: L82567
Date Received: 06/08/2010 10:42
Received By: gac
Date Printed: 6/9/2010

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
L82567-01	M-10		Y									<input type="checkbox"/>
L82567-02	TRI20100604A		Y									<input type="checkbox"/>
L82567-03	TRI20100604B		Y									<input type="checkbox"/>
L82567-04	RT-1									X		<input type="checkbox"/>

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



Laboratories, Inc.

C82567

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

CHAIN of CUSTODY

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name:

Company:

E-mail:

Telephone:

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

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

X

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01KU

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

of Containers

TB-ANNUAL

TB-SUPPLEM

TB-ANNUAL

TB-SUPPLEM

TB-ANNUAL

TB-SUPPLEM

TB-ANNUAL

TB-SUPPLEM

TB-ANNUAL

TB-SUPPLEM

M-10

06-04-10 09:38

GW

3

X

TRI20100604A

06-04-10

GW

3

X

TRI20100604B

06-04-10

GW

3

X

RT-1

06-04-10 11:10

GW

2

X

RT-1

06-04-10 09:38

GW

2

X

RT-1

06-04-10 09:38

GW

2

X

RT-1

06-04-10 09:38

GW

2

X

RT-1

06-04-10 09:38

GW

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06-04-10 09:38

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RT-1

06-04-10 09:38

GW

2

X

RT-1

06-04-10 09:38

GW

2

X

RT-1

06-04-10 09:38

GW

2

X

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7545

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

7/2/10 15:30

6-7-10 15:30

X

6-8-10 1045

Aaron Hilshorst
Phelps Dodge Sierrita
P.O. Box 527
6200 West Duval Mine Road
Green Valley, AZ 85622-0527

July 06, 2010

Cc: **Ben Daigneau**

Project ID: ZS01KU
ACZ Project ID: L82739– **SULFATE ONLY**

Aaron Hilshorst:

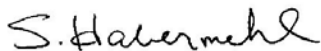
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 17, 2010. This project was assigned to ACZ's project number, L82739. Please reference this number in all future inquiries.

At the request of Phelps Dodge Sierrita, Inc. (PDSI), this laboratory report has been prepared to contain only information specific to samples and analytes identified by PDSI as evaluated pursuant to Mitigation Order No. P-500-06 with Arizona Department of Environmental Quality. Samples and analytes unrelated to the Mitigation Order, but which may be identified on the chain of custody and sample receipt, have been reported to PDSI in a separate report.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L82739. 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 the requirements of NELAC.

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

ACZ disposes of samples and sub-samples thirty days after the analytical results are reported to the client. That time frame has elapsed for this project. 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. Please notify your Project Manager if you have other needs. If you have any questions, please contact your Project Manager or Customer Service Representative.



Scott Habermehl has reviewed
and approved this report.



FMI Gold & Copper - Sierrita

Project ID: ZS01KU

Sample ID: M-9

ACZ Sample ID: **L82739-01**

Date Sampled: 06/16/10 15:09

Date Received: 06/17/10

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	77		*	mg/L	5	30	07/01/10 11:40	aml

Arizona license number: AZ0102

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>

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82739**

Project ID: **ZS01KU**

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284852													
WG284852ICV	ICV	06/23/10 23:14	MS100329-2	.05		.05435	mg/L	108.7	90	110			
WG284852ICB	ICB	06/23/10 23:19				.00071	mg/L		-0.0011	0.0011			
WG284852LFB	LFB	06/23/10 23:29	MS100617-3	.05005		.05177	mg/L	103.4	85	115			
L82692-11AS	AS	06/24/10 0:48	MS100617-3	.05005	.0007	.06102	mg/L	120.5	70	130			
L82692-11ASD	ASD	06/24/10 0:53	MS100617-3	.05005	.0007	.06067	mg/L	119.8	70	130	0.58	20	

Cadmium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284938													
WG284938ICV	ICV	06/23/10 20:03	II100510-1	2		1.963	mg/L	98.2	95	105			
WG284938ICB	ICB	06/23/10 20:07				U	mg/L		-0.015	0.015			
WG284938LFB	LFB	06/23/10 20:20	II100608-2	.5		.5036	mg/L	100.7	85	115			
L82715-02AS	AS	06/23/10 20:29	II100608-2	.5	U	.5279	mg/L	105.6	85	115			
L82715-02ASD	ASD	06/23/10 20:32	II100608-2	.5	U	.5228	mg/L	104.6	85	115	0.97	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	100		99.92	mg/L	99.9	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.6	0.6			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	67.99734		66.58	mg/L	97.9	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	67.99734	54.7	122.81	mg/L	100.2	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	67.99734	54.7	125.47	mg/L	104.1	85	115	2.14	20	

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	2		1.992	mg/L	99.6	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.03	0.03			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	.5		.509	mg/L	101.8	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	.5	U	.523	mg/L	104.6	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	.5	U	.534	mg/L	106.8	85	115	2.08	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284660													
WG284660LCSW1	LCSW	06/18/10 16:47	PCN34415	1408.8		1422	µmhos/cm	100.9	90	110			
WG284660LCSW4	LCSW	06/18/10 20:05	PCN34415	1408.8		1413	µmhos/cm	100.3	90	110			
WG284660LCSW7	LCSW	06/18/10 23:32	PCN34415	1408.8		1398	µmhos/cm	99.2	90	110			
L82755-01DUP	DUP	06/19/10 2:34			1790	1787	µmhos/cm				0.2	20	
WG284660LCSW10	LCSW	06/19/10 2:42	PCN34415	1408.8		1386	µmhos/cm	98.4	90	110			
WG284660LCSW13	LCSW	06/19/10 5:38	PCN34415	1408.8		1370	µmhos/cm	97.2	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82739**

Project ID: **ZS01KU**

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	2		1.959	mg/L	98	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.03	0.03			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	.5		.506	mg/L	101.2	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	.5	U	.516	mg/L	103.2	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	.5	U	.524	mg/L	104.8	85	115	1.54	20	

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	2		1.976	mg/L	98.8	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.06	0.06			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	1		1.01	mg/L	101	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	1	.04	1.075	mg/L	103.5	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	1	.04	1.104	mg/L	106.4	85	115	2.66	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284852													
WG284852ICV	ICV	06/23/10 23:14	MS100329-2	.05		.05373	mg/L	107.5	90	110			
WG284852ICB	ICB	06/23/10 23:19				U	mg/L		-0.00022	0.00022			
WG284852LFB	LFB	06/23/10 23:29	MS100617-3	.05005		.05368	mg/L	107.3	85	115			
L82692-11AS	AS	06/24/10 0:48	MS100617-3	.05005	.0011	.05444	mg/L	106.6	70	130			
L82692-11ASD	ASD	06/24/10 0:53	MS100617-3	.05005	.0011	.05473	mg/L	107.2	70	130	0.53	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	100		100.75	mg/L	100.8	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.6	0.6			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	50.00131		48.79	mg/L	97.6	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	50.00131	11.4	63.17	mg/L	103.5	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	50.00131	11.4	64.39	mg/L	106	85	115	1.91	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	2		1.9568	mg/L	97.8	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.015	0.015			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	.5		.5274	mg/L	105.5	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	.5	.006	.5488	mg/L	108.6	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	.5	.006	.5574	mg/L	110.3	85	115	1.55	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82739**

Project ID: **ZS01KU**

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284660													
WG284660LCSW3	LCSW	06/18/10 17:02	PCN33150	6		6.05	units	100.8	98	102			
WG284660LCSW6	LCSW	06/18/10 20:20	PCN33150	6		6.06	units	101	98	102			
WG284660LCSW9	LCSW	06/18/10 23:48	PCN33150	6		6.05	units	100.8	98	102			
L82755-01DUP	DUP	06/19/10 2:34			8.2	8.23	units				0.4	20	
WG284660LCSW12	LCSW	06/19/10 2:52	PCN33150	6		6.03	units	100.5	98	102			
WG284660LCSW15	LCSW	06/19/10 5:53	PCN33150	6		6.05	units	100.8	98	102			

Sulfate

375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG285374													
WG285374ICB	ICB	07/01/10 10:28				U	mg/L		-3	3			
WG285374ICV	ICV	07/01/10 10:28	WI100626-1	20		20.1	mg/L	100.5	90	110			
WG285374LFB	LFB	07/01/10 11:32	WI100506-1	10.04		9.5	mg/L	94.6	90	110			
L82753-01AS	AS	07/01/10 11:32	WI100506-1	10.04	U	13	mg/L	129.5	90	110			M1
L82739-01DUP	DUP	07/01/10 11:40			77	77.8	mg/L				1	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG284709													
WG284709ICV	ICV	06/21/10 20:54	II100510-1	2		1.965	mg/L	98.3	95	105			
WG284709ICB	ICB	06/21/10 20:58				U	mg/L		-0.03	0.03			
WG284709LFB	LFB	06/21/10 21:11	II100608-2	.5		.513	mg/L	102.6	85	115			
L82739-01AS	AS	06/21/10 21:17	II100608-2	.5	.18	.698	mg/L	103.6	85	115			
L82739-01ASD	ASD	06/21/10 21:20	II100608-2	.5	.18	.712	mg/L	106.4	85	115	1.99	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82739**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L82739-01	WG285374	Sulfate	375.4 - Turbidimetric	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L82739**

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Sulfate

375.4 - Turbidimetric

FMI Gold & Copper - Sierrita
ZS01KU

ACZ Project ID: L82739
Date Received: 06/17/2010 10:14
Received By: gac
Date Printed: 6/18/2010

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)
2929	0.6	13

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

Notes

FMI Gold & Copper - Sierrita
ZS01KU

ACZ Project ID: L82739
Date Received: 06/17/2010 10:14
Received By: gac
Date Printed: 6/18/2010

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
L82739-01	M-9		Y									<input type="checkbox"/>

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



Laboratories, Inc.

L80739

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

CHAIN of CUSTODY

Report to:

Name: Aaron Hilshorst

Company: Freeport-McMoRan Sierrita Inc.

E-mail: aaron_hilshorst@fmi.com

Address: 6200 W. Duval Mine Road

Green Valley, AZ 85614

Telephone: 520-648-8844

Copy of Report to:

Name: Ben Daigneau

Company: Clear Creek Associates

E-mail:

Telephone:

Invoice to:

Name:

Company:

E-mail:

Address:

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.

Are samples for CO DW Compliance Monitoring?

YES

NO

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: ZS01KU

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material? Yes No

of Containers

TB-ANNUAL

SAMPLE IDENTIFICATION

DATE: TIME

Matrix

M-9

06/16/10 15:09

GW

3

x

Matrix

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

REMARKS

UPS Tracking # 1Z 867 7E4 23 1000 7563

Copy of report to Ben Daigneau contains only "SO4" results with QC Summary.

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

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

17/06/10

6-16-10 15:30

[Signature]

6-17-10 10/14

APPENDIX C

TIME SERIES GRAPHS OF SULFATE CONCENTRATION

TABLE C.1
Sulfate Concentration Over Time

Date and dissolved sulfate concentration reported in milligrams per liter (mg/l)																
Well ID	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010
CW-6	12/04/06 46.2	01/03/07 49.2	05/14/07 68.7	07/10/07 57.6	10/02/07 54.2	01/08/08 48.9	04/15/08 51.2	07/08/08 47.9	10/07/08 51.5	02/06/09 48.2	04/22/09 47.9	09/17/09 70	11/05/09 59.7	02/10/10 46.6	05/14/10 52.1	07/27/10 55.2
CW-9	12/04/06 44.5	01/03/07 44.9	05/14/07 47.8	07/10/07 46.7	10/02/07 46.4	01/08/08 47.3	04/15/08 43.7	07/08/08 44.1	10/07/08 43.5	02/06/09 45.1	04/22/09 44.3	07/30/09 43.8	11/05/09 44.7	02/10/10 43.4	05/14/10 44.2	07/27/10 44.1
CW-10	12/04/06 37.2	01/24/07 48.6	05/14/07 52.8	07/10/07 51.7	10/02/07 47.7	01/08/08 45.3	04/15/08 50.8	07/08/08 50.5	10/07/08 48.3	02/06/09 51.3	04/22/09 47.9	07/30/09 49.2	11/20/09 49.9	02/10/10 44.9	05/14/10 49.1	07/27/10 48.9
GV-01-GVDWID		01/09/07 40.9	04/10/07 43.2	07/11/07 41.5	10/03/07 43.8	01/07/08 45.7	04/16/08 44.1	07/07/08 45.2	11/25/08 39	03/03/09 42.3	04/22/09 40.6	07/29/09 44.3	11/04/09 45.1	01/27/10 47.0	04/01/10 48.5	07/28/10 39.4
GV-02-GVDWID		01/09/07 103	04/10/07 106	07/11/07 98	10/03/07 100	01/07/08 98	04/16/08 97	07/07/08 93.2	11/25/08 93.5	02/04/09 98.8	04/22/09 79.5	07/29/09 91.6	11/04/09 93.2	01/27/10 94.9	04/01/10 99.5	07/28/10 83
ESP-1	12/04/06 262	01/03/07 242	05/14/07 113	07/10/07 94	10/12/07 110	01/23/08 100	04/18/08 102	07/25/08 104	10/30/08 121	01/29/09 113	04/16/09 130	NS	11/10/09 173	NS	4/28/10 204	NS
ESP-2	12/04/06 29.6	01/03/07 31.3	05/14/07 28.4	07/10/07 28.6	10/12/07 30	01/23/08 30	04/18/08 27.6	07/25/08 26.8	10/30/08 30.1	01/29/09 27.8	04/16/09 28.2	NS	11/10/09 28.9	NS	4/28/10 28.7	NS
ESP-3	12/04/06 36.2	01/03/07 37.5	05/14/07 36.6	07/10/07 36.6	10/12/07 40	01/23/08 30	04/18/08 35.7	07/25/08 34	10/30/08 36.8	01/29/09 35.2	04/16/09 35.3	NS	11/12/09 39.5	NS	4/28/10 35.8	NS
MO-2007-1A				08/08/07 19.2	10/09/07 20	01/24/08 20	04/09/08 21	07/14/08 16.6	10/17/08 17.9	01/16/09 18.1	04/01/09 18.2	07/01/09 16.3	10/22/09 16.6	NS	04/16/10 18.5	NS
MO-2007-1B				08/02/07 18.9	10/09/07 30	01/24/08 30	04/09/08 35	07/14/08 39.8	10/17/08 54.3	01/16/09 69.7	04/01/09 84.1	07/01/09 99	10/22/09 143	NS	04/16/10 230	NS
MO-2007-1C				07/31/07 112	10/09/07 90	01/24/08 140	04/09/08 149	07/14/08 165	10/21/08 146	01/16/09 233	04/01/09 229	07/01/09 236	10/22/09 301	NS	04/16/10 320	NS
NP-2			06/04/07 41.2	08/13/07 41.7	11/06/07 41.7	01/11/08 43.5	04/17/08 40	07/11/08 40.5	10/09/08 39.7	02/09/09 42.4	04/24/09 32.1	09/17/09 40	NS		04/22/10 41.9	08/05/10 41.2
MO-2007-3B				09/10/07 38	10/09/07 40	01/21/08 40	04/16/08 37	07/14/08 37.8	10/22/08 42.4	01/19/09 36.9	04/01/09 38.2	07/27/09 37.2	10/22/09 39.1	01/20/10 37.9	04/22/10 41.9	07/21/10 38.7
MO-2007-3C				07/05/07 136	10/10/07 110	01/21/08 130	04/15/08 127	07/14/08 126	10/21/08 103	01/19/09 113	04/01/09 115	07/22/09 107	10/22/09 108	01/20/10 103	04/14/10 110	07/21/10 101
MO-2007-4A					10/09/07 37	01/22/08 40	04/16/08 33.1	07/17/08 34.8	10/22/08 40.1	01/19/09 35.9	04/02/09 36.7	07/01/09 36.3	10/26/09 35.7	01/26/10 36.0	04/14/10 37.0	07/21/10 34.9
MO-2007-4B					10/11/07 37.6	01/07/08 60	04/16/08 33.6	07/18/08 35.5	10/22/08 37.4	01/21/09 32.9	04/02/09 34.6	07/01/09 34.7	10/26/09 34.5	01/26/10 34.1	04/14/10 35.1	07/21/10 34
MO-2007-4C				08/16/07 78.7	10/12/07 80.1	01/22/08 80	04/16/08 80	07/18/08 78.6	10/22/08 84.9	01/21/09 78.5	04/02/09 81	07/01/09 82.7	10/26/09 83.9	01/26/10 83.2	04/14/10 87.7	07/21/10 85.6
MO-2007-6A					10/02/07 26.5	01/22/08 30	04/18/08 20.5	07/24/08 16.9	10/23/08 18.6	01/22/09 26.9	04/02/09 23.7	07/22/09 19.8	10/26/09 23.5	01/20/10 24.6	04/21/10 34.7	08/10/10 26.8
MO-2007-6B					10/04/07 93.6	01/22/08 80	04/17/08 90.4	07/24/08 81.5	10/23/08 63.2	01/22/09 84.5	04/02/09 75.7	07/22/09 63.5	10/26/09 62.1	01/20/10 69.7	04/21/10 57.9	08/10/10 68.8
MO-2009-1											04/24/09 62.1	07/29/09 97.7	11/03/09 109	01/25/10 82.1	04/20/10 99	08/10/10 109

FIGURE C.1
SULFATE CONCENTRATION OVER TIME FOR WELLS
MO-2007-4A, MO-2007-4B, MO-2007-4C, AND CW-6

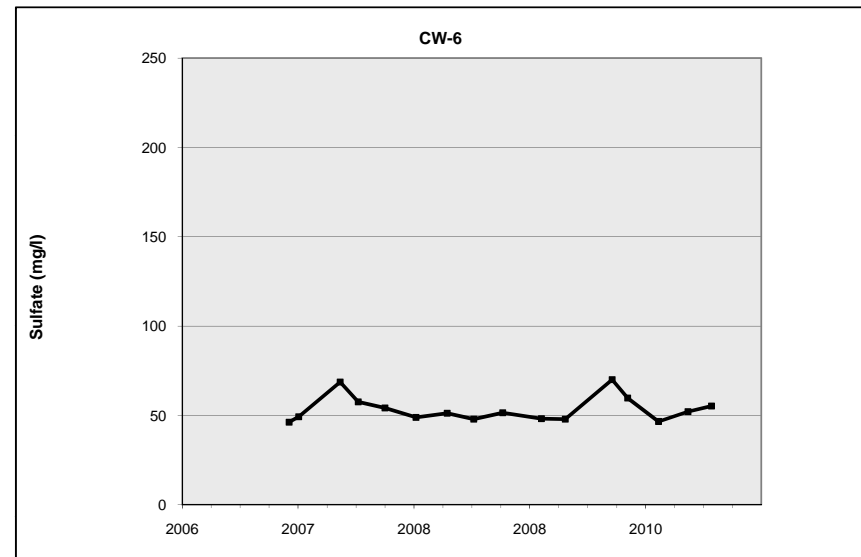
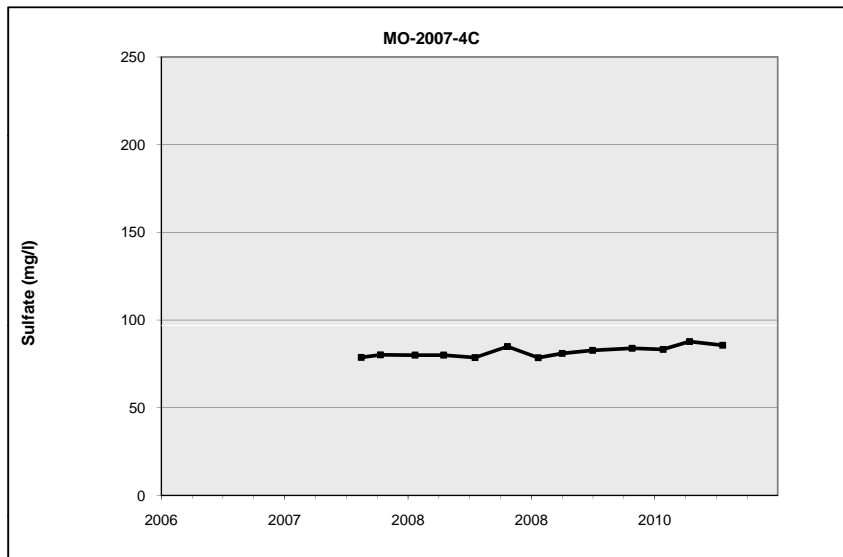
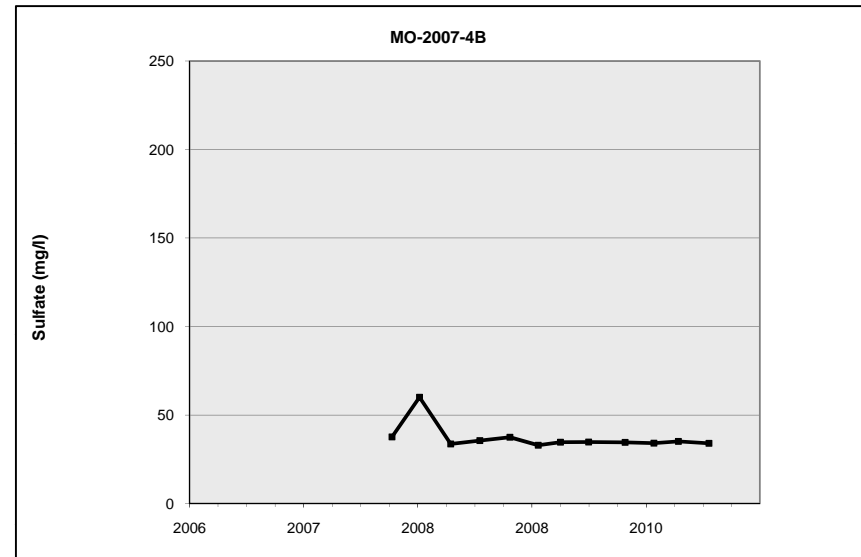
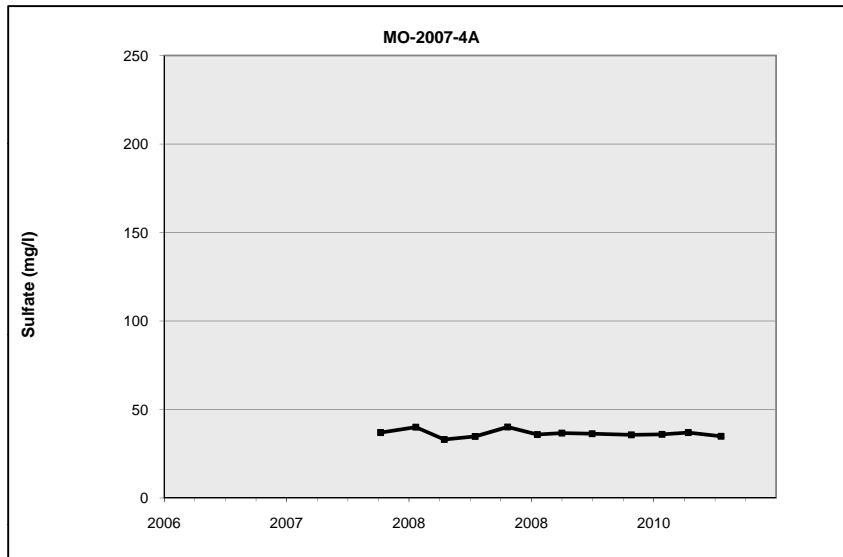


FIGURE C.2
SULFATE CONCENTRATION OVER TIME FOR WELLS
NP-2, MO-2007-3B, MO-2007-3C, AND CW-9

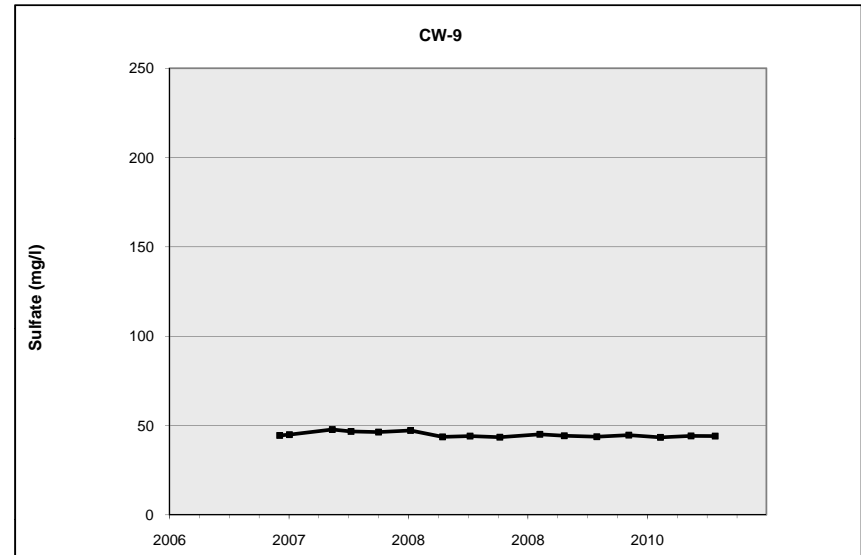
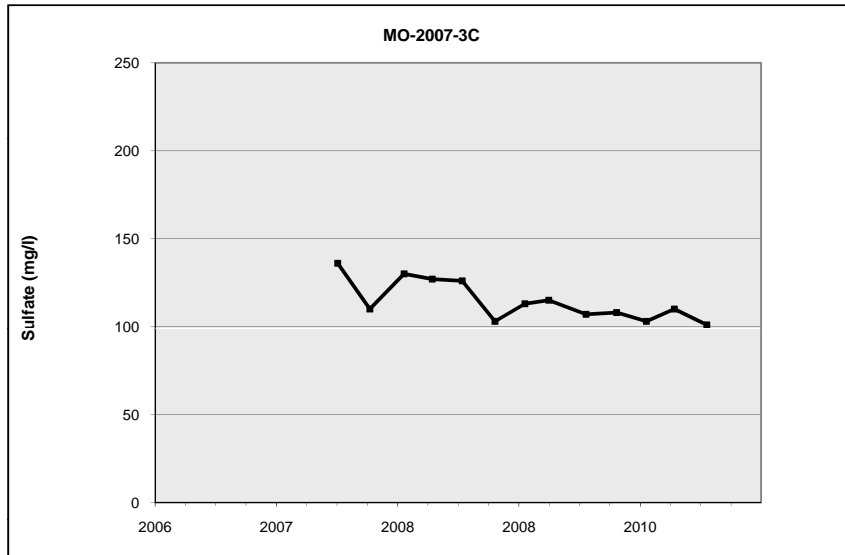
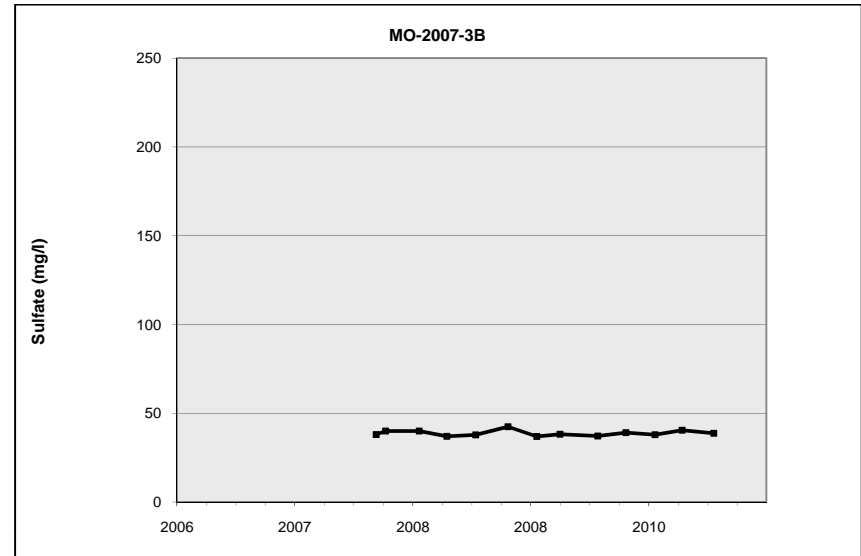
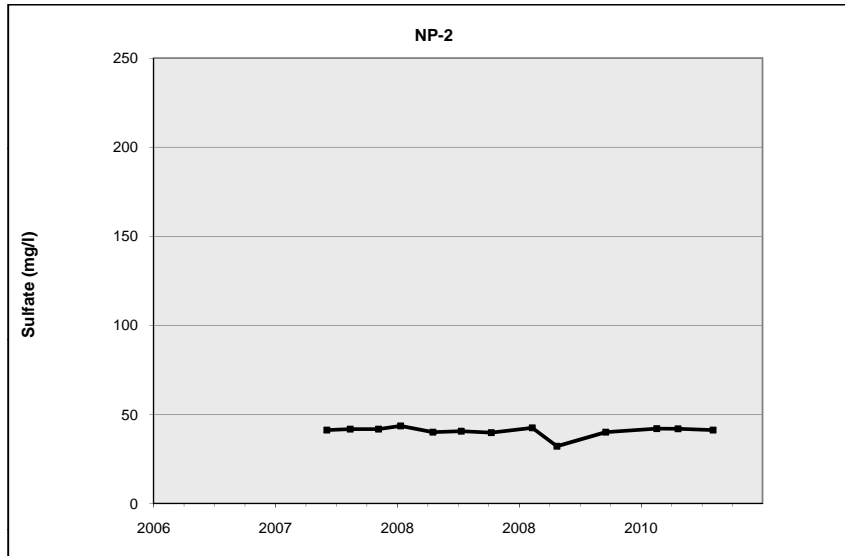


FIGURE C.3

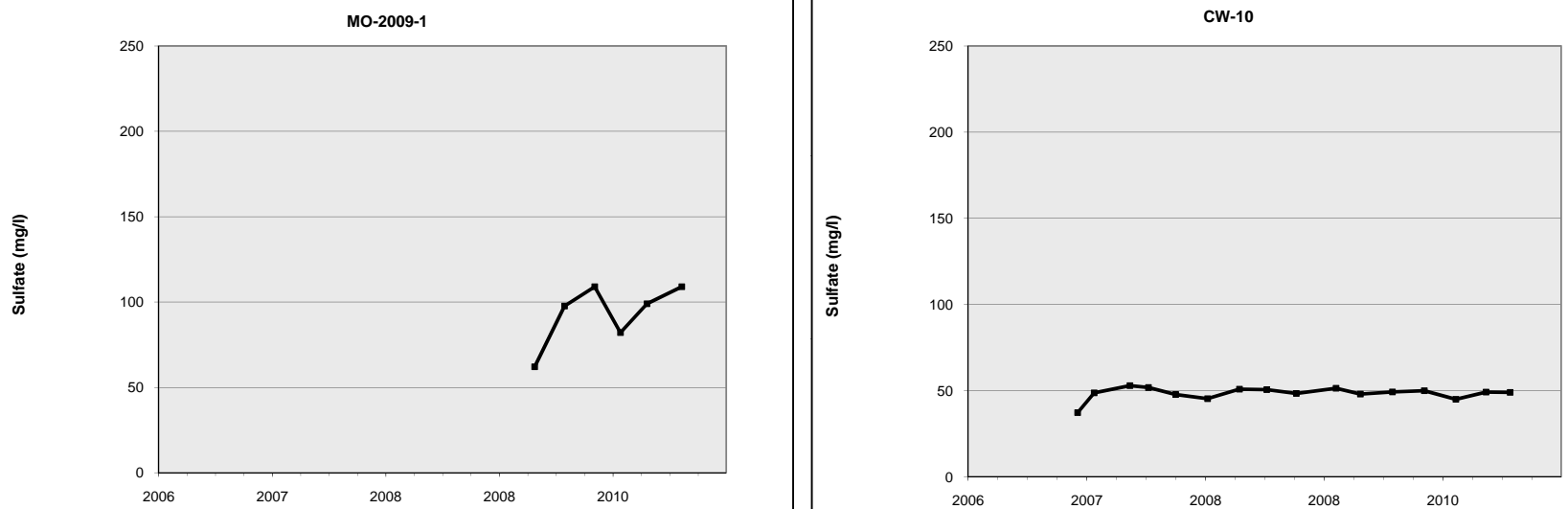


FIGURE C.4
SULFATE CONCENTRATION OVER TIME FOR WELLS
GV-01-GVDWID, GV-02-GVDWID, MO-2007-6A, AND MO-2007-6B

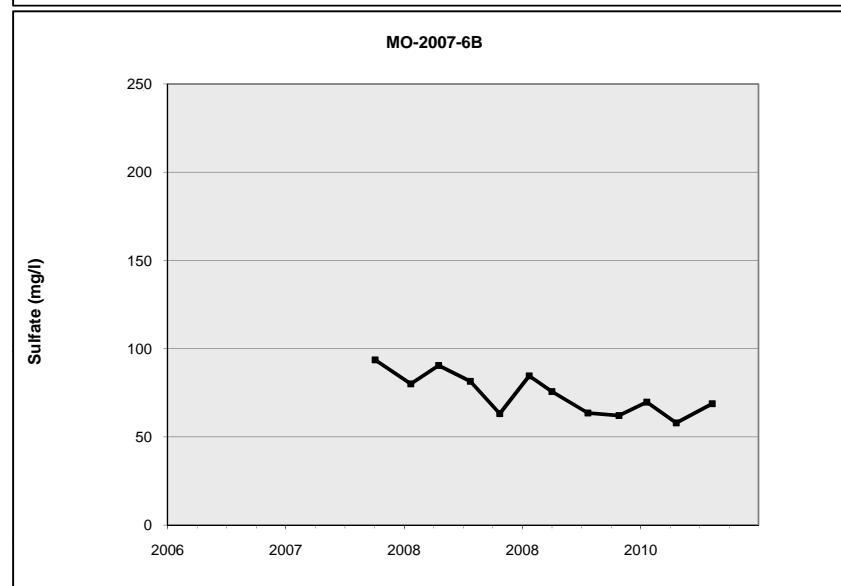
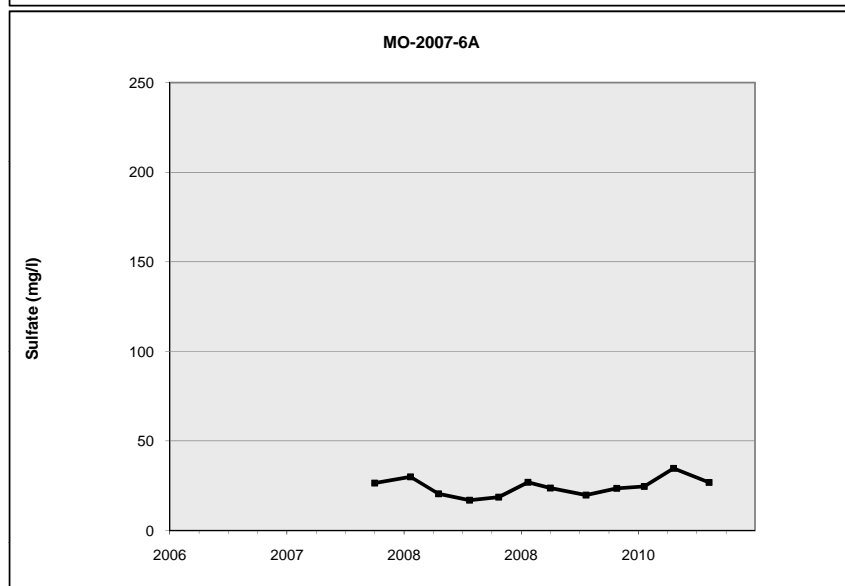
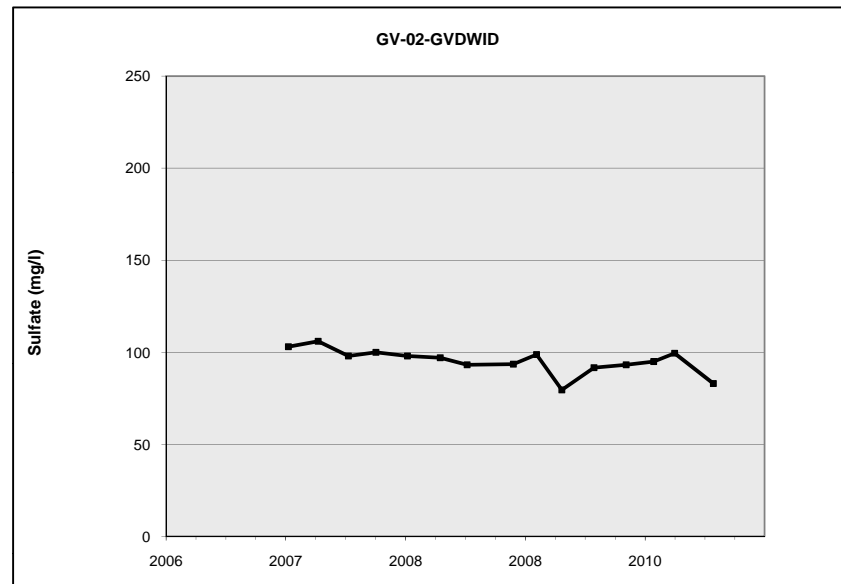
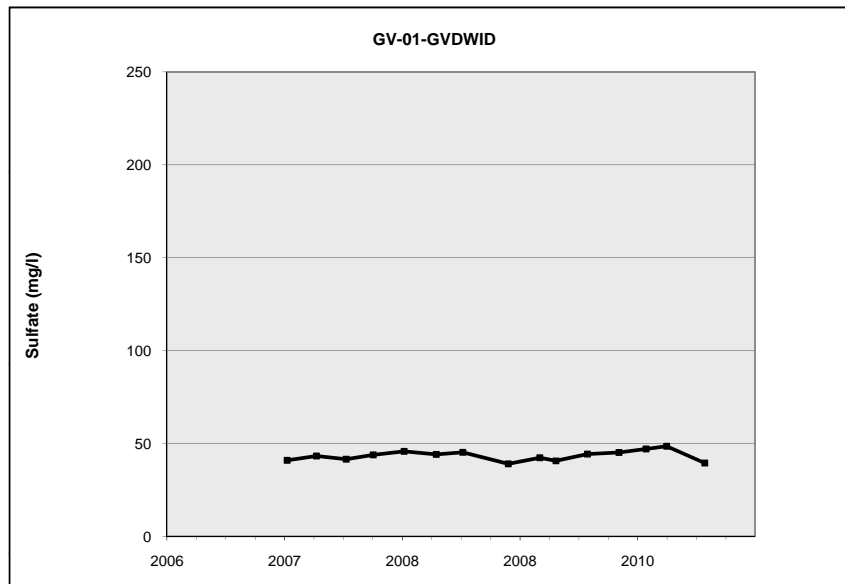


FIGURE C.5
SULFATE CONCENTRATION OVER TIME FOR WELLS
MO-2007-1A, MO-2007-1B, AND MO-2007-1C

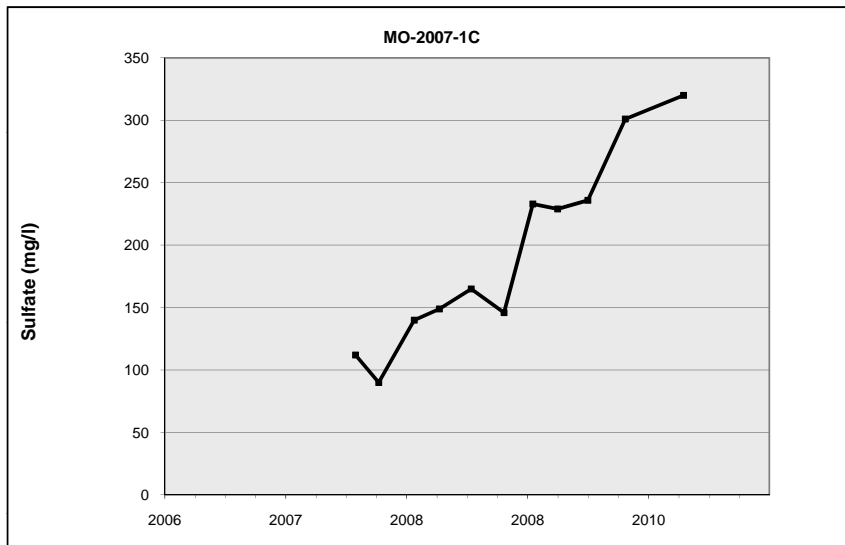
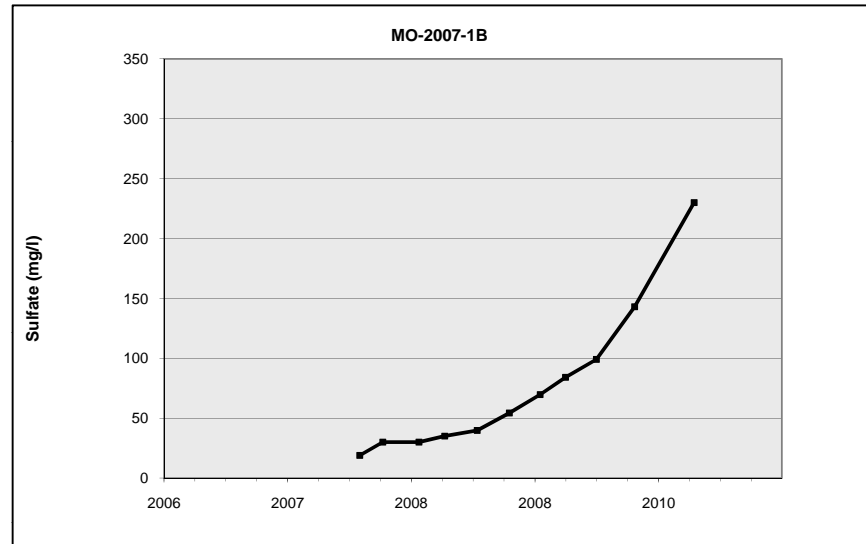
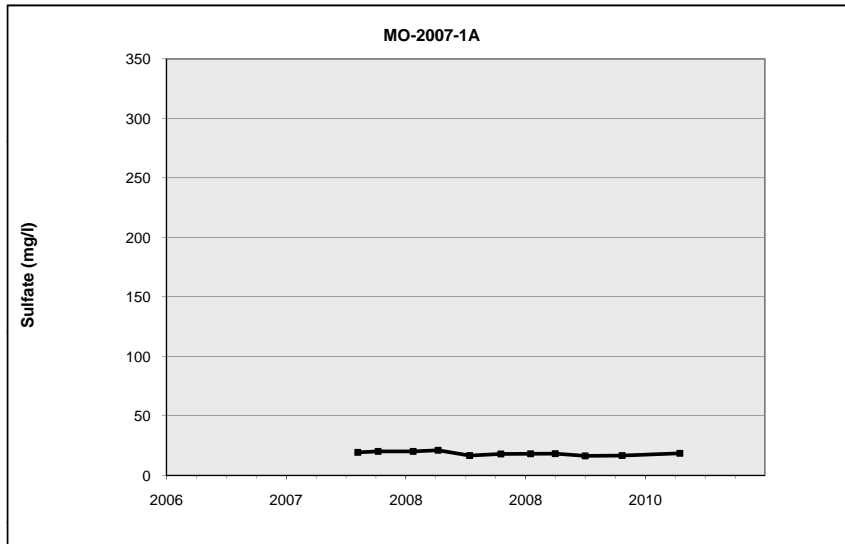
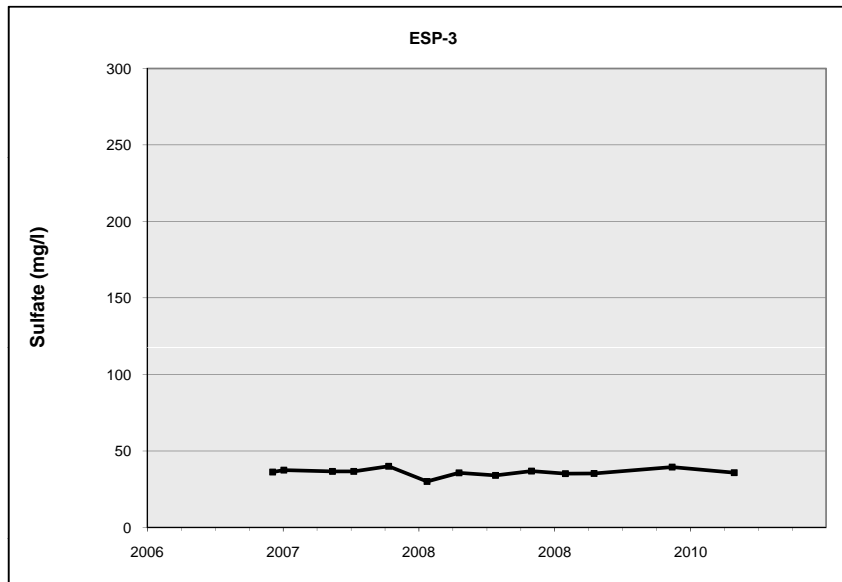
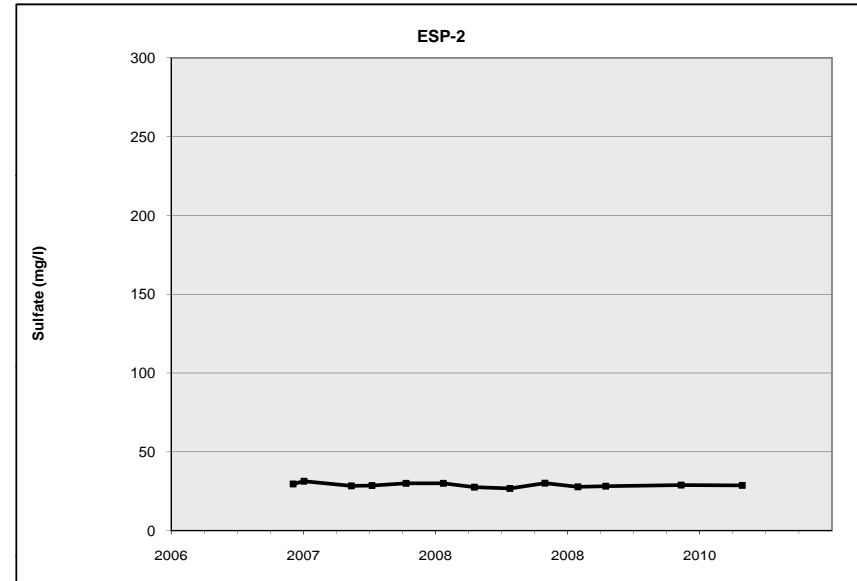
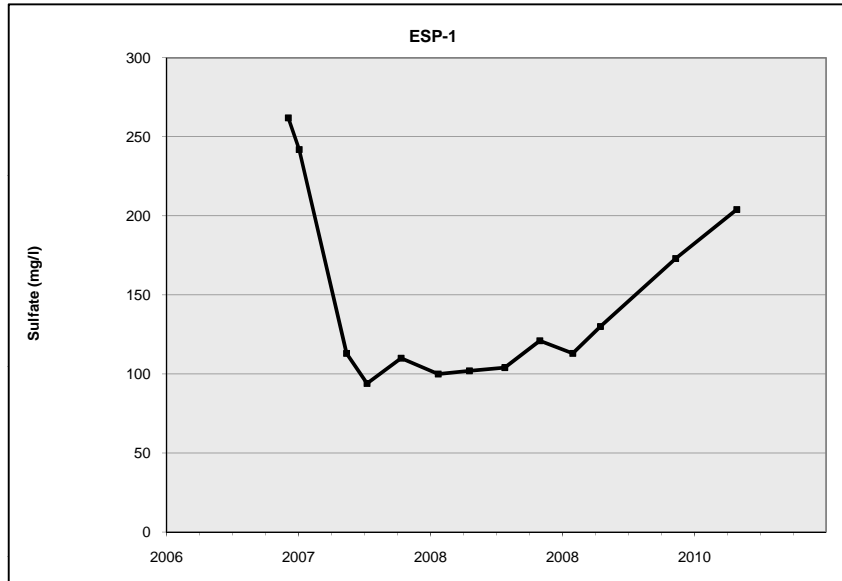
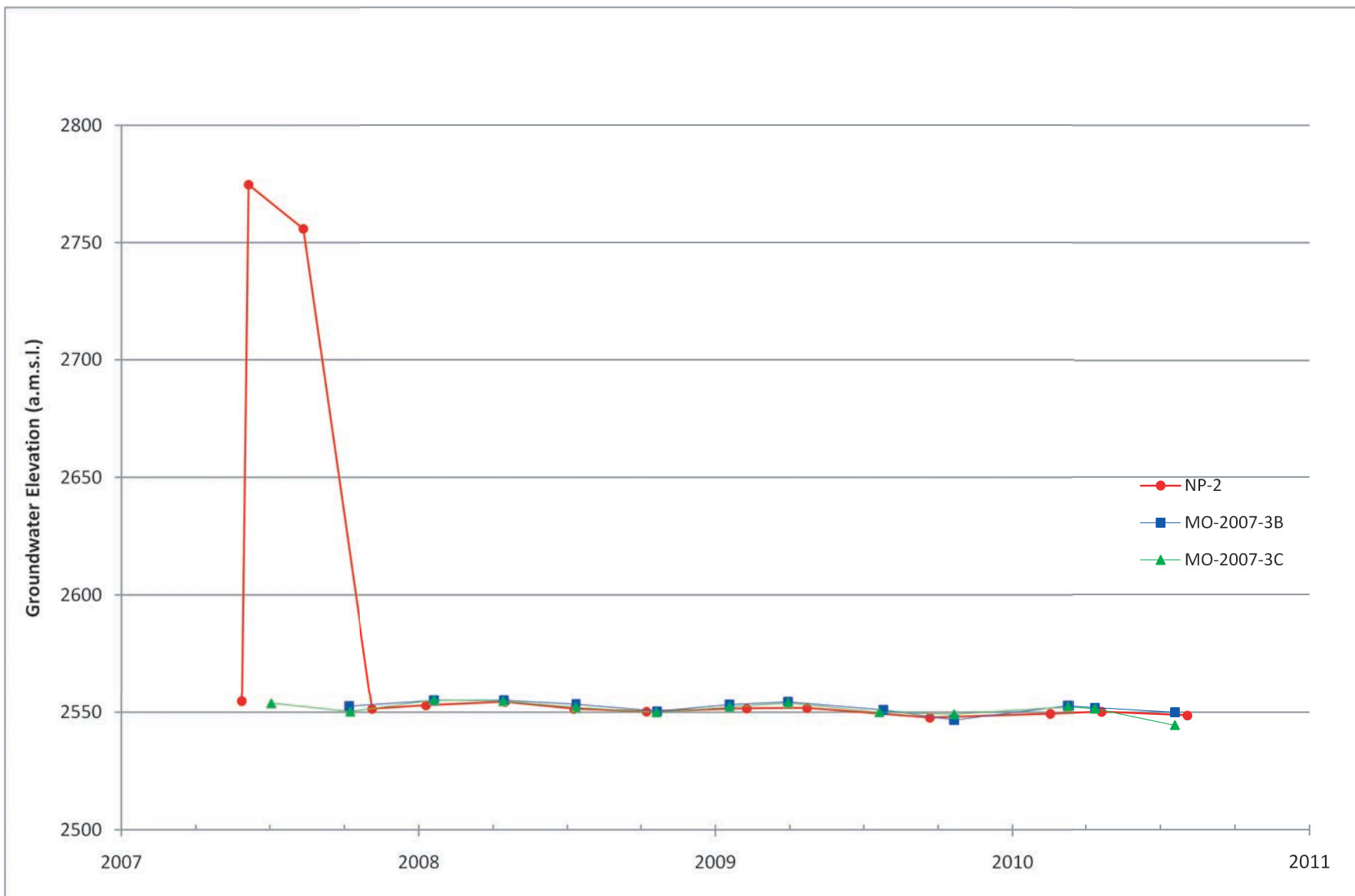


FIGURE C.6
SULFATE CONCENTRATION OVER TIME FOR WELLS
ESP-1, ESP-2, AND ESP-3



APPENDIX D

TIME SERIES GRAPHS OF GROUNDWATER ELEVATION



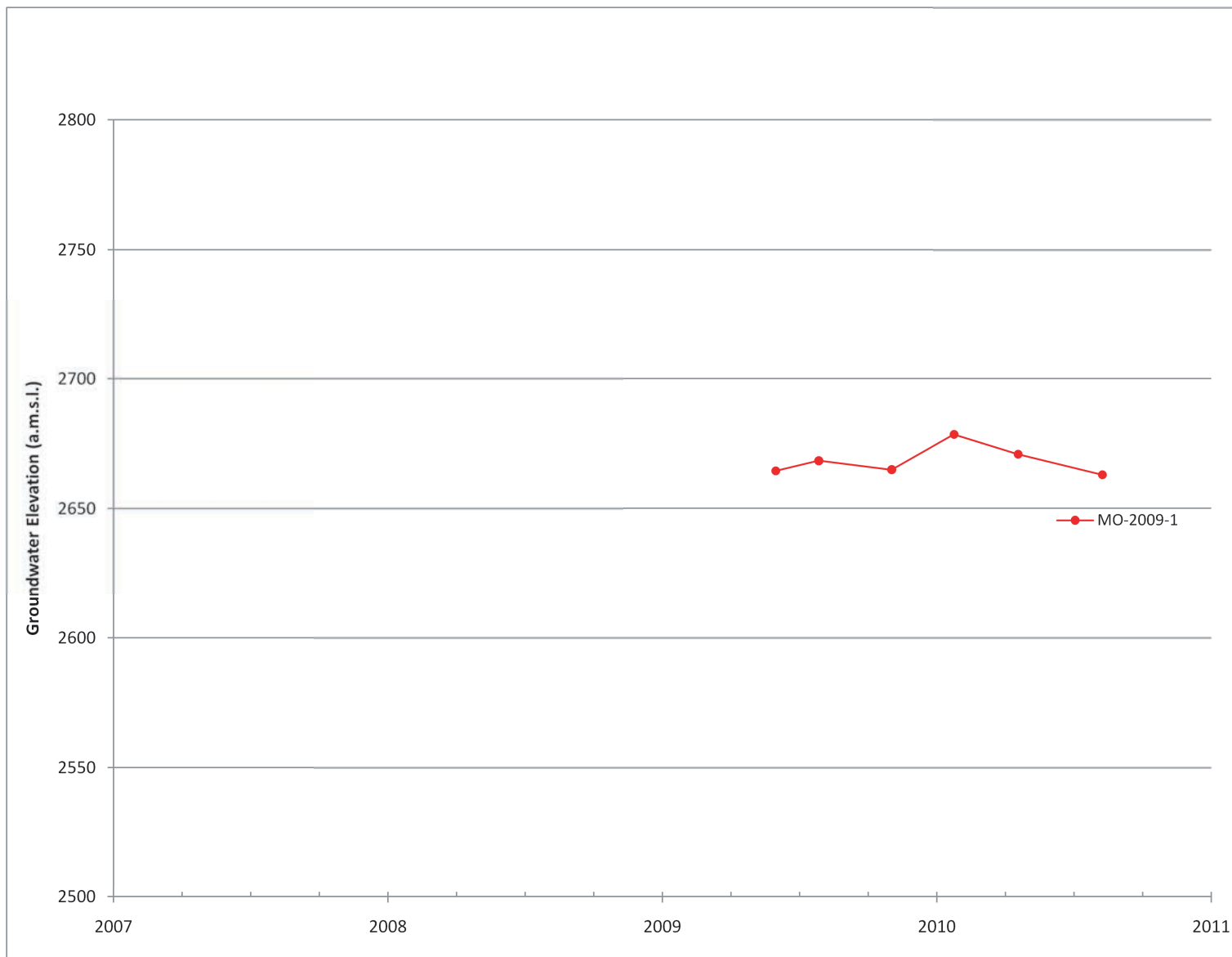
File ID
055039-038
Date
9/1/10

Figure D.1
Groundwater Elevation over Time
for Sentinel Wells NP-2, MO-2007-3B,
and MO-2007-3C



File ID	055039-039
Date	9/1/10

Figure D.2
Groundwater Elevation over Time
for Sentinel Wells MO-2007-4A,
MO-2007-4B, and MO-2007-4C



File ID	055039-040
Date	9/1/10

Figure D.3
Groundwater Elevation over Time
for Sentinel Well MO-2009-1



File ID	055039-041
Date	9/1/10

Figure D.4
Groundwater Elevation over Time
for Sentinel Well MO-2007-6A and
MO-2007-6B