

Freeport-McMoRan Sierrita Inc.  
6200 W. Duval Mine Rd.  
PO Box 527  
Green Valley, Arizona 85622-0527

December 19, 2008

**Via Certified Mail #7007 3020 0001 8578 1920**  
**Return Receipt Requested**

Ms. Cynthia S. Campbell  
Arizona Department of Environmental Quality  
Water Quality Enforcement Unit  
1110 West Washington Street  
Phoenix, Arizona 85007-2935

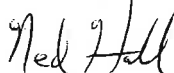
**Re:      Groundwater Monitoring Report,**  
**Fourth Quarter 2008, Mitigation Order on Consent, Docket No. P-50-06**

Dear Ms. Campbell:

Freeport-McMoRan Sierrita Inc. ("Sierrita") submits three copies of the attached Quarterly Groundwater Monitoring Report that provides the results of groundwater monitoring conducted during the fourth quarter of 2008 in the vicinity of the Sierrita Tailing Impoundment. This document was prepared by Hydro Geo Chem, Inc. as described in the Work Plan for Mitigation Order on Consent, Docket No. P-50-06.

Please do not hesitate to contact Mr. Stuart Brown at (503) 675-5252 or myself at (520) 648-8857 if you have any question regarding this submittal.

Sincerely,



E. L. (Ned) Hall  
Chief Environmental Engineer

ELH:ms  
20081219-001  
Attachment

xc:      John Broderick, Sierrita Operations  
         Chad Fretz, Sierrita Operations  
         Manager, Water Quality Programs, Freeport-McMoRan Copper & Gold Inc.  
         Stuart Brown, Bridgewater Group, Inc.

**FOURTH QUARTER 2008  
GROUNDWATER MONITORING REPORT  
TASK 2.2 OF AQUIFER CHARACTERIZATION PLAN  
MITIGATION ORDER ON CONSENT DOCKET NO. P-50-06  
PIMA COUNTY, ARIZONA**

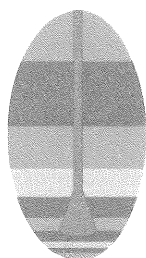
Prepared for:

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

Prepared by:

**HYDRO GEO CHEM, INC.**  
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December 18, 2008



**HYDRO GEO CHEM, INC.**

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*Environmental Science & Technology*





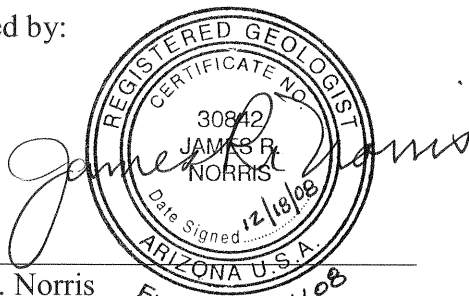
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PIMA COUNTY, ARIZONA**

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

Prepared by:

A handwritten signature of Daniel R. Simpson in black ink.

Daniel R. Simpson  
Senior Hydrogeologist

December 18, 2008



## TABLE OF CONTENTS

1.	INTRODUCTION .....	1
1.1	Scope of Groundwater Monitoring .....	1
1.1.1	Groundwater Monitoring for Task 2.2.....	1
2.	GROUNDWATER MONITORING RESULTS .....	5
2.1	Results of Monitoring for Task 2.2.....	5
2.2	Quality Assurance/Quality Control Review .....	5
3.	DISCUSSION .....	7
3.1	Sulfate Distribution .....	7
3.2	Groundwater Elevation .....	8
3.3	Time Series Graphs of Sulfate Concentration and Groundwater Elevation .....	9
4.	REFERENCES .....	11

## TABLES

1	Summary of Groundwater Monitoring for Mitigation Order Docket No. P-50-06 for Fourth Quarter 2008
2	Analytical Results for Fourth Quarter 2008 Groundwater Monitoring
3	Groundwater Elevation Data for Water Levels Collected in Fourth Quarter 2008

## FIGURES

1	Sulfate Concentrations in Groundwater Fourth Quarter 2008
2	Groundwater Elevations Fourth Quarter 2008

## APPENDICES

A	Fourth Quarter 2008 Data Verification Report for Groundwater Samples Collected By Freeport-McMoRan Sierrita Inc. and Hydro Geo Chem, Inc.
B	Analytical Data Reports from ACZ Laboratories, Inc.
C	Hydro Geo Chem, Inc. Groundwater Sampling Forms
D	Time Series Graphs of Sulfate Concentration and Groundwater Elevation



## **1. INTRODUCTION**

This data report was prepared for Freeport-McMoRan Sierrita Inc. (Sierrita), and provides the results of groundwater monitoring conducted in the fourth quarter of 2008 in the vicinity of the Sierrita Tailing Impoundment (STI). Groundwater monitoring was conducted by Sierrita pursuant to Task 2.2 of the Work Plan (Hydro Geo Chem, Inc. [HGC], 2006) to characterize sulfate in the vicinity of the STI. The Work Plan was submitted to and approved by Arizona Department of Environmental Quality (ADEQ) pursuant to the Mitigation Order on Consent Docket No. P-50-06. HGC prepared this groundwater monitoring report on behalf of Sierrita.

### **1.1 Scope of Groundwater Monitoring**

The scope of the groundwater monitoring program is described in Sections 3.3.2 and Appendix G of the Work Plan (HGC, 2006). Groundwater monitoring for Task 2.2 consists of water elevation measurement and collection of groundwater samples from wells in the vicinity of the STI.

#### **1.1.1 Groundwater Monitoring for Task 2.2**

The Work Plan identifies two purposes for the groundwater monitoring program required in Task 2.2: plume monitoring and regional monitoring. Plume monitoring is conducted quarterly at wells that are proximal to the sulfate plume in order to track the plume's location in

the aquifer. Regional monitoring to characterize regional hydrologic conditions using wells that are outside the area of the sulfate plume was completed in the third quarter of 2007 (HGC, 2007). This report presents the results of plume monitoring conducted during the fourth quarter of 2008. Pursuant to the Work Plan, the only constituent of interest for quarterly plume monitoring is sulfate.

Table 1 lists wells identified in the Work Plan for quarterly monitoring, their availability for sampling in the fourth quarter of 2008, and their sampling status. As discussed in the Work Plan, Table 1 consists of wells that are under the control of Sierrita and others that are not. Sierrita agreed to contact owners of private wells and wells owned by water companies identified in the Work Plan for sampling in order to obtain access for sampling. The Work Plan acknowledged that access to some wells may not be permitted by well owners and that some wells may be inappropriate for sampling due to their construction characteristics. Table 1 also includes a list of alternate wells identified by the Work Plan for sampling that have been used in place of wells that were unable to be sampled.

Analytical data for plume monitoring during the fourth quarter of 2008 were obtained from two sources: Sierrita and HGC. Sierrita collected groundwater samples at wells under its control and HGC collected groundwater samples at wells not under the control of Sierrita during October 2008.

Groundwater sampling and analysis methods used by Sierrita and HGC are described in the Quality Assurance Project Plan (QAPP) contained in Appendix E of the Work Plan (HGC, 2006). Results of groundwater monitoring for Task 2.2 are presented in Section 2.1.





## **2. GROUNDWATER MONITORING RESULTS**

### **2.1 Results of Monitoring for Task 2.2**

Analytical results and groundwater elevation data for the fourth quarter of 2008 are tabulated in Table 2 and Table 3, respectively. Figure 1 shows the concentrations of dissolved sulfate in the wells sampled in the fourth quarter 2008. Comparison of dissolved and total sulfate concentrations in Table 2 indicates negligible difference between the two measurements. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 2 shows groundwater elevations in the fourth quarter 2008. Groundwater elevations were calculated using the depth to water measurements made under static (non-pumping) conditions for all wells shown. Water level data for the IW-series wells were not used to estimate groundwater elevation contours for Figure 2 because the depth to water was measured while the wells were pumping.

### **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 and HGC during the fourth quarter of 2008, and is included in Appendix A.

Analytical laboratory reports for samples collected by Sierrita and HGC in the fourth quarter of 2008 are provided in portable document format on the compact disc in Appendix B. Copies of groundwater sampling forms for samples collected by HGC are in Appendix C.

As determined by the analytical data verification review, all data for samples collected in the fourth quarter of 2008 by HGC and Sierrita are of acceptable quality for use in the aquifer characterization being conducted pursuant to the Work Plan.

### **3. DISCUSSION**

This data report provides the results of groundwater monitoring conducted in the vicinity of the STI for the fourth quarter of 2008. As presented in Table 1, during this monitoring period 76 wells were identified for quarterly quality sampling and 69 wells were identified for water level monitoring. Groundwater samples were collected from 70 plume area wells and depths to water measurements were collected at 85 wells.

Groundwater samples and water level measurements were not collected from all the wells identified in the Work Plan for a variety of reasons, including owner limitations on access, unsuitable well construction, inability to contact the owner, obstruction in well, or a well no longer existing. The specific reason(s) for not sampling these wells are provided in Table 1. In some cases, alternate wells were identified and sampled as described in Table 1. Overall, groundwater monitoring conducted during the fourth quarter of 2008 is deemed to have met the objective of identifying the location of the sulfate plume from STI.

#### **3.1 Sulfate Distribution**

Figure 1 shows the distribution of sulfate concentrations. The concentration contours shown in Figure 1 are inferred assuming that sulfate concentrations in the aquifer are spatially correlated, although a strict linear interpolation was not applied. Sulfate concentration contours of 50, 100, 250, 500, 1000, and 1500 milligrams per liter (mg/L) are shown as requested by

ADEQ (2006). The contours are based on the highest sulfate concentration measured in co-located wells.

Based on the sulfate concentration data on Figure 1, 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 south of the MO-2007-1 wells.

### **3.2 Groundwater Elevation**

Groundwater elevations are shown on Figure 2. Groundwater elevations decrease from west to east in the immediate vicinity of STI, and from south to north across the central portion of the study area near Green Valley. Comparison of the fourth quarter 2008 water elevations with those observed in previous quarters indicates no substantive difference in groundwater elevations and consequent flow directions. The overall pattern of groundwater flow indicated by groundwater elevations is consistent with expected regional groundwater flow patterns in the southern portion of the Tucson groundwater basin (e.g., Mason and Liciniu, 2006; Pima Association of Governments, 1983a and 1983b).

The water elevations in co-located wells screened at different depths vary by less than four feet in the north part of the study area. In the south half of the study area, the deepest screened interval at co-located wells at MH-13, MO-2007-5, and MO-2007-6 have lower water

elevations than the more shallow wells. The vertical water level differences as calculated between the shallowest and deepest screened intervals at the MH-13, MO-2007-5, and MO-2007-6 wells range from 7.70 to 12.31 feet.

### **3.3 Time Series Graphs of Sulfate Concentration and Groundwater Elevation**

Time series graphs of sulfate concentration and groundwater elevation for ESP-, CW-, MO-, and GVDWID wells in the vicinity of the edge of the plume, and wells MH-28 and MH-29 near the interceptor wellfield are presented in Appendix D. Because of variability in the sulfate and water elevation data, assessment of trends is somewhat subjective and should be considered provisional subject to additional verification. Inspection of the time series graphs of wells at the edge of the plume indicates that sulfate concentration trends appear to increase gradually over time in CW-7, ESP-4, MO-2007-1B, and MO-2007-1C and decrease in GV-02-GVDWID, MO-2007-2, MO-2007-3C, MO-2007-6A, and MO-2007-6B.

Groundwater elevations are also variable over time, making interpretation of seasonal or long-term trends difficult. In general, water level elevation data for active production wells show the largest range of variation over time (up to approximately 26 feet in CW-10), whereas the range of groundwater elevation change over time in monitoring wells tends to be approximately 3 feet or less. Sulfate concentration and groundwater elevation data for the time series graphs is presented in Table D.1.



#### **4. REFERENCES**

- Arizona Department of Environmental Quality. 2006. Correspondence from Robert Casey to John Brack, Regarding: Mitigation Order on Consent, Docket P-50-06-Work Plan Response. September 22, 2006.
- Hydro Geo Chem, Inc. (HGC). 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.
- HGC. 2007. Third Quarter 2007. Groundwater Monitoring Report, Tasks 2.2, 2.3, and 2.4 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06. September 26, 2007.
- Mason, Dale E. and Bata Liciniu. 2006. Regional Groundwater Flow Model of the Tucson Active Management Area; Tucson, Arizona. Simulation and Application Modeling Report No. 13. Arizona Department of Water Resources.
- Pima Association of Governments (PAG). 1983a. Region Wide Groundwater Quality in the Upper Santa Cruz Basin Mines Task Force Area. September 1983.
- PAG. 1983b. Ground-Water Monitoring in the Tucson Copper Mining District. September 1983.





## TABLES



**TABLE 1**  
**Summary of Groundwater Monitoring for Mitigation Order Docket No. P-50-06 for Fourth Quarter 2008**

Well Name	ADWR 55 Well Registry Number	Owner	Purpose	Casing or Well Depth (feet)	Work Plan Specification		Q4-2008 Monitoring		Status	Substitute Well
					Water Level Measurement	Water Quality Sampling	Water Level Measured?	Water Quality Sample Collected?		
WELLS FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY SIERRITA										
ESP-1	623102	Sierrita	Plume Monitoring	1020	Q	Q	YES	YES	Water quality sample collected in October 2008	
ESP-2	623103	Sierrita	Plume Monitoring	1044	Q	Q	YES	YES	Water quality sample collected in October 2008	
ESP-3	623104	Sierrita	Plume Monitoring	1043	Q	Q	YES	YES	Water quality sample collected in October 2008	
ESP-4	623105	Sierrita	Plume Monitoring	1045	Q	Q	YES	YES	Water quality sample collected in October 2008	
ESP-5	623106	Sierrita	Plume Monitoring	950	Q	-	YES	NO	Well identified for water level measurement only	55-515867
IW-1	623129	Sierrita	Plume Monitoring	855	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-2	623130	Sierrita	Plume Monitoring	1035	Q	Q	NO	NO	Well abandonment planned	
IW-2A	216464	Sierrita	Plume Monitoring	1041	Q	Q	NO	YES	Water quality sample collected October in 2008; no access to well casing to collect water level measurement	
IW-3A	623131	Sierrita	Plume Monitoring	1047	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-4	623132	Sierrita	Plume Monitoring	946	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-5	623133	Sierrita	Plume Monitoring	956	-	Q	NO	YES	Water quality sample collected in October 2008; obstruction in well prevented water level measurement	
IW-6A	545565	Sierrita	Plume Monitoring	492	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-8	508236	Sierrita	Plume Monitoring	783	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-9	508238	Sierrita	Plume Monitoring	853	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-10	508237	Sierrita	Plume Monitoring	831	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-11	508235	Sierrita	Plume Monitoring	605	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-12	545555	Sierrita	Plume Monitoring	625	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-13	545556	Sierrita	Plume Monitoring	495	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-14	545557	Sierrita	Plume Monitoring	550	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-15	545558	Sierrita	Plume Monitoring	548	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-16	545559	Sierrita	Plume Monitoring	470	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-17	545560	Sierrita	Plume Monitoring	502	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-18	545561	Sierrita	Plume Monitoring	508	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-19	545562	Sierrita	Plume Monitoring	544	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-20	545563	Sierrita	Plume Monitoring	506	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-21	545564	Sierrita	Plume Monitoring	620	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-22	200554	Sierrita	Plume Monitoring	590	-	Q	YES	YES	Water quality sample collected in October 2008	
IW-23	200555	Sierrita	Plume Monitoring	964	-	Q	NO	YES	Water quality sample collected in October 2008; obstruction in well prevented water level measurement	
IW-24	200556	Sierrita	Plume Monitoring	880	-	Q	YES	YES	Water quality sample collected in October 2008	
MH-1	803629	Sierrita	Plume Monitoring	520	Q	-	YES	NO	Well identified for water level measurement only	
MH-3	803630	Sierrita	Plume Monitoring	535	Q	-	YES	NO	Well identified for water level measurement only	
MH-4	803631	Sierrita	Plume Monitoring	540	Q	-	NO	NO	Obstruction in well prevented water level measurement	
MH-5	803632	Sierrita	Plume Monitoring	640	Q	-	YES	NO	Well identified for water level measurement only	
MH-6	803633	Sierrita	Plume Monitoring	960	Q	-	YES	NO	Well identified for water level measurement only	
MH-7	803634	Sierrita	Plume Monitoring	1100	Q	-	YES	NO	Well identified for water level measurement only	
MH-9	803635	Sierrita	Plume Monitoring	1400	Q	-	YES	NO	Well identified for water level measurement only	
MH-10	803636	Sierrita	Plume Monitoring	600	Q	Q	YES	YES	Water quality sample collected in November 2008	

**TABLE 1**  
**Summary of Groundwater Monitoring for Mitigation Order Docket No. P-50-06 for Fourth Quarter 2008**

Well Name	ADWR 55 Well Registry Number	Owner	Purpose	Casing or Well Depth (feet)	Work Plan Specification		Q4-2008 Monitoring		Status	Substitute Well
					Water Level Measurement	Water Quality Sampling	Water Level Measured?	Water Quality Sample Collected?		
MH-11	803637	Sierrita	Plume Monitoring	820	Q	Q <sup>1</sup>	YES	YES	Water quality sample collected in November 2008	
MH-12	803638	Sierrita	Plume Monitoring	800	Q	Q <sup>1</sup>	YES	NO	Casing appears to be collapsed at about 415 ft bgs; water level measurement collected in November 2008	
MH-13A	904071	Sierrita	Plume Monitoring	660	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-13B	904072	Sierrita	Plume Monitoring	960	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-13C	904073	Sierrita	Plume Monitoring	1360	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-14	528098	Sierrita	Plume Monitoring	561	Q	-	YES	NO	Well identified for water level measurement only	
MH-15E	528094	Sierrita	Plume Monitoring	467	Q	-	YES	NO	Well identified for water level measurement only	
MH-15W	528093	Sierrita	Plume Monitoring	466	Q	-	YES	NO	Well identified for water level measurement only	
MH-16E	528100	Sierrita	Plume Monitoring	460	Q	-	YES	NO	Well identified for water level measurement only	
MH-16W	528099	Sierrita	Plume Monitoring	460	Q	-	YES	NO	Well identified for water level measurement only	
MH-24	563799	Sierrita	Plume Monitoring	468	Q	-	YES	NO	Well identified for water level measurement only	
MH-25A	201528	Sierrita	Plume Monitoring	530	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-25B	208429	Sierrita	Plume Monitoring	680	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-25C	208426	Sierrita	Plume Monitoring	1101	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-26A	201527	Sierrita	Plume Monitoring	538	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-26B	208427	Sierrita	Plume Monitoring	735	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-26C	208428	Sierrita	Plume Monitoring	910	Q	Q	YES	NO	Pump Failure; water level measurement collected in October 2008	
MH-28	903648	Sierrita	Plume Monitoring	490	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-29	903649	Sierrita	Plume Monitoring	475	Q	Q	YES	YES	Water quality sample collected in October 2008	
MH-30	903884	Sierrita	Plume Monitoring	920	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-1A	907342	Sierrita	Plume Monitoring	610	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-1B	907210	Sierrita	Plume Monitoring	910	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-1C	907209	Sierrita	Plume Monitoring	1190	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-2	906765	Sierrita	Plume Monitoring	685	Q	Q	YES	NO	Pump Failure; water level measurement collected in October 2008	
MO-2007-3B	906816	Sierrita	Plume Monitoring	950	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-3C	906817	Sierrita	Plume Monitoring	1330	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-4A	907213	Sierrita	Plume Monitoring	570	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-4B	907212	Sierrita	Plume Monitoring	950	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-4C	907211	Sierrita	Plume Monitoring	1140	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-5B	907456	Sierrita	Plume Monitoring	970	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-5C	907457	Sierrita	Plume Monitoring	1360	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-6A	907607	Sierrita	Plume Monitoring	620	Q	Q	YES	YES	Water quality sample collected in October 2008	
MO-2007-6B	907606	Sierrita	Plume Monitoring	950	Q	Q	YES	YES	Water quality sample collected in October 2008	
PZ-7	561870	Sierrita	Plume Monitoring	155	Q	Q	YES	YES	Water quality sample collected in October 2008	
PZ-8	561866	Sierrita	Plume Monitoring	280	Q	Q	YES	YES	Water quality sample collected in October 2008	
PZ-9	561859	Sierrita	Plume Monitoring	230	Q	Q	NO	NO	Piezometer is Dry	
WELLS FOR QUARTERLY [PLUME] MONITORING NOT CONTROLLED BY SIERRITA										
1350	ND	TBPI	Plume Monitoring	ND	Q	-	YES	NO	Well identified for water level measurement only	

**TABLE 1**  
**Summary of Groundwater Monitoring for Mitigation Order Docket No. P-50-06 for Fourth Quarter 2008**

Well Name	ADWR 55 Well Registry Number	Owner	Purpose	Casing or Well Depth (feet)	Work Plan Specification		Q4-2008 Monitoring		Status	Substitute Well
					Water Level Measurement	Water Quality Sampling	Water Level Measured?	Water Quality Sample Collected?		
CC OF GV	501760	CC of GV	Plume Monitoring	955	Q	Q	YES	YES	Water quality sample collected in October 2008	55-640274
CW-3	627483	CWC	Plume Monitoring	501	Q	Q	YES	YES	Water quality sample collected in October 2008	
CW-6	627485	CWC	Plume Monitoring	840	Q	Q	YES	YES	Water quality sample collected in October 2008	
CW-7	502546	CWC	Plume Monitoring	1065	Q	Q	YES	NO	Well has been disconnected; water level only	
CW-8	543600	CWC	Plume Monitoring	1200	Q	Q	YES	NO	Well has been disconnected; water level only	
CW-9	588121	CWC	Plume Monitoring	1000	Q	Q	YES	YES	Water quality sample collected in October 2008	
CW-10	207982	CWC	Plume Monitoring	1140	Q	Q	YES	YES	Water quality sample collected in October 2008	
GV-01-GVDWID	603428	GVDWID	Plume Monitoring	645	Q	Q	YES	YES	Water quality sample collected in October 2008	
GV-02-GVDWID	603429	GVDWID	Plume Monitoring	560	Q	Q	YES	YES	Water quality sample collected in October 2008	
GV-SI-GVDWID	208825	GVDWID	Plume Monitoring	650	Q	Q	YES	YES	Water quality sample collected in October 2008	
HAVEN GOLF	515867	Haven Golf	Plume Monitoring	500	Q	Q	NO	YES	Water quality sample collected in October 2008; obstruction in well prevented water level measurement	55-623106
I-9	608526	TBPI	Plume Monitoring	900	Q	Q	NO	NO	Well abandonment completed October 2007	None
I-10	608525	TBPI	Plume Monitoring	932	Q	Q	YES	YES	Water quality sample collected in October 2008	
M-6	87388	TBPI	Plume Monitoring	660	Q	Q	NO	NO	Water quality sample collected in October 2008	M-9, 55-501652
M-8	87390	TBPI	Plume Monitoring	660	Q	Q	YES	YES	Water quality sample collected in October 2008	
M-9	501652	TBPI	Plume Monitoring	440	Q	Q	YES	YES	Water quality sample collected in October 2008	55-87388
M-10	501653	TBPI	Plume Monitoring	1050	Q	Q	YES	YES	Water quality sample collected in October 2008	
M-20	906595	TBPI	Plume Monitoring	780	Q	Q <sup>1</sup>	YES	YES	Water quality sample collected in October 2008	
NP-2	605898	CWC	Plume Monitoring	515	Q	Q	YES	YES	Water quality sample collected in October 2008	
SCHNEIKER	611220	Schneiker	Plume Monitoring	495	Q	Q	NO	NO	Owner did not respond to access request	
TMM-1 <sup>2</sup>	616156	Pima County	Plume Monitoring	500	Q	Q	YES	YES	Water quality sample collected in October 2008	None

<sup>1</sup> MH-11, MH-12 and M-20 added to sampling list after Work Plan approved

<sup>2</sup> Formally listed as Davis-Monthan (55-804995) and PC Parks (55-616156) wells; determined to be the same well located at the Titan Missile Museum (TMM)

ADWR = Arizona Department of Water Resources

Sierrita = Freeport-McMoRan Sierrita Inc.

Q = Quarterly

TBPI = Twin Buttes Properties, Inc.

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

**TABLE 2**  
**Analytical Results for Fourth Quarter 2008 Groundwater Monitoring**

Well Name	ADWR 55 Well Registry Number	Sample Date	pH (SU)	Specific Conductance (µS/cm)	Temperature (°C)	Sulfate, dissolved (mg/L)	Sulfate, total (mg/L)
WELLS FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY SIERRITA							
ESP-1	623102	10/30/08	7.55	576	26.9	121	NA
ESP-2	623103	10/30/08	7.22	374	27.5	30.1	NA
ESP-2 DUP	623103	10/30/08	7.22	374	27.5	30.0	NA
ESP-3	623104	10/30/08	7.58	375	27.8	36.8	NA
ESP-4	623105	10/30/08	7.23	962	25.9	489	NA
IW-1	623129	10/24/08	7.01	1201	30.9	700	NA
IW-2A	216464	10/24/08	7.43	473	30.3	60	NA
IW-3A	623131	10/27/08	6.97	1679	28.7	1450	NA
IW-4	623132	10/24/08	6.92	1924	27.9	1630	NA
IW-5	623133	10/27/08	6.57	1886	26.8	1720	NA
IW-6A	545565	10/24/08	6.61	1999	25.5	1930	NA
IW-8	508236	10/24/08	6.85	1976	27.4	1890	NA
IW-9	508238	10/24/08	6.88	1981	28.6	1720	NA
IW-9 DUP	508238	10/24/08	6.88	1981	28.6	1720	NA
IW-10	508237	10/24/08	6.77	1969	27.0	1730	NA
IW-11	508235	10/24/08	6.89	1958	26.3	2260	NA
IW-12	545555	10/24/08	6.81	1879	26.5	1520	NA
IW-13	545556	10/24/08	6.70	1999	26.1	1930	NA
IW-14	545557	10/24/08	6.51	1929	26.4	1840	NA
IW-15	545558	10/24/08	6.60	1892	26.0	1850	NA
IW-16	545559	10/24/08	6.35	1879	25.7	1850	NA
IW-17	545560	10/24/08	6.70	1864	27.0	1720	NA
IW-18	545561	10/24/08	6.34	1883	27.1	1680	NA
IW-19	545562	10/24/08	6.60	1685	28.7	1710	NA
IW-20	545563	10/24/08	6.81	1779	28.6	1600	NA
IW-21	545564	10/24/08	6.91	1833	29.7	1640	NA
IW-22	200554	10/24/08	6.89	1929	26.4	1720	NA
IW-23	200555	10/24/08	6.81	1966	27.9	1780	NA
IW-24	200556	10/24/08	6.71	1058	28.1	1640	NA
MH-10	803636	11/04/08	7.02	1856	26.0	1450	NA
MH-11	803637	11/07/08	7.01	1350	27.1	1560	NA
MH-13A	904071	10/20/08	7.07	1984	27.7	1800	NA
MH-13B	904072	10/20/08	7.34	1627	29.6	1080	NA
MH-13C	904073	10/20/08	8.90	380	32.8	60	NA
MH-25A	201528	10/17/08	7.84	333	27.5	50	NA
MH-25B	208429	10/17/08	7.74	1768	28.8	1660	NA
MH-25C	208426	10/17/08	7.17	1624	30.4	1270	NA
MH-26A	201527	10/17/08	7.70	327	27.4	20	NA
MH-26B	208427	10/20/08	7.16	1760	29.2	1650	NA
MH-28	903548	10/06/08	6.97	3500	26.7	1910	NA
MH-29	903649	10/06/08	6.95	3300	26.9	1740	NA
MH-30	903884	10/06/08	6.95	3900	29.8	1810	NA
MO-2007-1A	907342	10/17/08	7.46	357	27.7	17.9	NA
MO-2007-1B	907210	10/17/08	7.56	423	28.1	54.3	NA
MO-2007-1C	907209	10/21/08	7.80	573	29.8	146	NA
MO-2007-3B	906816	10/22/08	7.69	379	28.1	42.4	NA
MO-2007-3B DUP	906816	10/22/08	7.69	379	28.1	41.6	NA

**TABLE 2**  
**Analytical Results for Fourth Quarter 2008 Groundwater Monitoring**

Well Name	ADWR 55 Well Registry Number	Sample Date	pH (SU)	Specific Conductance (µS/cm)	Temperature (°C)	Sulfate, dissolved (mg/L)	Sulfate, total (mg/L)
MO-2007-3C	906817	10/21/08	8.07	519	32.9	103	NA
MO-2007-4A	907213	10/22/08	7.58	420	26.9	40.1	NA
MO-2007-4B	907212	10/22/08	7.73	407	30.8	34.7	NA
MO-2007-4C	907211	10/22/08	8.45	467	31.8	85.9	NA
MO-2007-5B	907456	10/23/08	7.87	1086	26.8	412	NA
MO-2007-5C	907457	10/23/08	9.11	728	30.2	257	NA
MO-2007-6A	907607	10/23/08	7.49	388	25.8	18.6	NA
MO-2007-6B	907606	10/23/08	8.01	446	28.9	63.2	NA
PZ-7	561870	10/14/08	8.31	1300	25.0	420	NA
PZ-8	561866	10/08/08	7.22	1400	28.2	460	NA
WELLS FOR QUARTERLY [PLUME] MONITORING NOT CONTROLLED BY SIERRITA							
CC of GV	501760	10/09/08	7.26	476	24.8	72.4	68
CW-3	627483	10/06/08	7.50	430	25.3	56.2	60.1
CW-6	627485	10/07/08	7.52	431	26.6	51.5	54.6
CW-6 DUP	627485	10/07/08	7.52	431	26.6	51.5	54.7
CW-9	588121	10/07/08	7.50	395	27.7	43.5	46
CW-10	207982	10/07/08	7.59	380	30.5	48.3	50.3
GV-01-GVDWID	603428	10/09/08	7.25	414	26.6	39	36
GV-02-GVDWID	603429	10/09/08	7.18	599	24.2	93.5	90
GV-SI-GVDWID	208825	10/09/08	7.44	352	26.7	5.4	6
HAVEN GOLF	515867	10/07/08	7.31	588	27.8	92.3	99
I-10	608525	10/28/08	7.18	1034	29.7	526	NA
M-8	087390	10/28/08	7.67	406	27.8	26.3	NA
M-8 DUP	087390	10/28/08	7.67	406	27.8	26.2	NA
M-9	501652	10/28/08	7.66	503	30.3	74.8	NA
M-10	501653	10/28/08	8.08	521	28.1	97.1	NA
M-20	906595	10/28/08	7.03	1688	28.2	1660	NA
NP-2	605898	10/06/08	7.57	405	25.1	39.7	42.1
TMM-1	616156	10/09/08	8.14	281	29.7	<0.5	<1

SU = Standard Units  
µS/cm = microsiemens per centimeter  
°C = degrees Celsius  
NA = Not Analyzed  
mg/L = milligrams per liter  
DUP = Duplicate sample



**TABLE 3**  
**Groundwater Elevation Data for Water Levels Collected in Fourth Quarter 2008**

Well Name	ADWR 55 Well Registry Number	Survey Source	UTM North	UTM East	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
WELLS FOR QUARTERLY [PLUME] MONITORING CONTROLLED BY SIERRITA								
ESP-1	623102	Sierrita	3526448.677	499969.682	2954.27	10/30/08	355.47	2598.80
ESP-2	623103	Sierrita	3526924.656	500241.637	2934.60	10/30/08	344.82	2589.78
ESP-3	623104	Sierrita	3527377.239	500234.067	2935.18	10/30/08	361.12	2574.06
ESP-4	623105	Sierrita	3526132.758	499916.830	2958.60	10/30/08	355.42	2603.18
ESP-5	623106	Sierrita	3527082.232	502007.895	2820.00	11/03/08	228.92	2591.08
IW-1	623129	Sierrita	3521277.779	496905.892	3144.69	10/24/08 <sup>1</sup>	404.80	2739.89
IW-3A	623131	Sierrita	3521722.640	497366.220	3121.45	10/24/08 <sup>1</sup>	141.50	2979.95
IW-4	623132	Sierrita	3522465.879	497371.700	3137.06	10/24/08 <sup>1</sup>	452.10	2684.96
IW-6A	545565	Sierrita	3523708.756	497381.226	3132.26	10/24/08 <sup>1</sup>	419.33	2712.93
IW-8	508236	Sierrita	3522020.520	497368.253	3122.19	10/24/08 <sup>1</sup>	436.92	2685.27
IW-9	508238	Sierrita	3522207.639	497369.791	3102.94	10/24/08 <sup>1</sup>	475.03	2627.91
IW-10	508237	Sierrita	3523122.199	497370.367	3129.64	10/24/08 <sup>1</sup>	468.33	2661.31
IW-11	508235	Sierrita	3523428.954	497371.414	3127.20	10/24/08 <sup>1</sup>	433.01	2694.19
IW-12	803638	Sierrita	3523969.869	497364.911	3138.18	10/24/08 <sup>1</sup>	425.90	2712.28
IW-13	545556	Sierrita	3524166.673	497363.820	3143.35	10/24/08 <sup>1</sup>	410.95	2732.40
IW-14	545557	Sierrita	3524373.122	497367.126	3146.42	10/24/08 <sup>1</sup>	467.07	2679.35
IW-15	545558	Sierrita	3524567.261	497372.873	3152.02	10/24/08 <sup>1</sup>	430.49	2721.53
IW-16	545559	Sierrita	3524782.868	497370.651	3162.85	10/24/08 <sup>1</sup>	408.29	2754.56
IW-17	545560	Sierrita	3525002.869	497373.717	3160.76	10/24/08 <sup>1</sup>	428.45	2732.31
IW-18	545561	Sierrita	3525169.771	497374.056	3171.15	10/24/08 <sup>1</sup>	446.30	2724.85
IW-19	545562	Sierrita	3525343.392	497373.630	3155.39	10/24/08 <sup>1</sup>	451.08	2704.31
IW-20	545563	Sierrita	3525568.770	497364.739	3164.21	10/24/08 <sup>1</sup>	424.14	2740.07
IW-21	545564	Sierrita	3525773.266	497374.585	3171.37	10/24/08 <sup>1</sup>	443.08	2728.29
IW-22	200554	Sierrita	3523273.592	497369.590	3128.25	10/24/08 <sup>1</sup>	455.89	2672.36
IW-24	200556	Sierrita	3522633.594	497371.670	3113.29	10/24/08 <sup>1</sup>	466.99	2646.30
MH-1	803629	Sierrita	3525872.911	497372.392	3179.27	11/14/08	441.45	2737.82
MH-3	803630	Sierrita	3525270.181	497472.430	3155.87	10/24/08	426.10	2729.77
MH-5	803632	Sierrita	3523725.339	497477.352	3123.47	11/14/08	391.98	2731.49
MH-6	803633	Sierrita	3522770.451	497436.646	3133.97	11/14/08	379.50	2754.47
MH-7	803634	Sierrita	3522016.471	497502.475	3111.23	11/14/08	373.20	2738.03
MH-9	803635	Sierrita	3521252.607	496438.181	3162.57	11/14/08	371.70	2790.87

**TABLE 3**  
**Groundwater Elevation Data for Water Levels Collected in Fourth Quarter 2008**

Well Name	ADWR 55 Well Registry Number	Survey Source	UTM North	UTM East	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
MH-10	803636	Sierrita	3521236.861	495717.770	3187.84	11/04/08	360.00	2827.84
MH-11	803637	Sierrita	3524463.648	498749.381	3041.76	11/07/08	376.85	2664.91
MH-12	803638	Sierrita	3525207.002	498772.161	3055.08	11/10/08	425.75	2629.33
MH-13A	904071	Sierrita	3523793.443	498823.857	3026.23	10/20/08	334.64	2691.59
MH-13B	904072	Sierrita	3523787.358	498829.881	3025.63	10/20/08	339.14	2686.49
MH-13C	904073	Sierrita	3523793.032	498797.461	3028.46	10/20/08	344.57	2683.89
MH-14	528098	Sierrita	3525269.340	497517.626	3150.77	10/06/08	426.03	2724.74
MH-15E	528094	Sierrita	3523274.327	497584.800	3111.37	10/24/08	388.51	2722.86
MH-15W	528093	Sierrita	3523275.003	497524.067	3117.07	10/06/08	394.00	2723.07
MH-16E	528100	Sierrita	3521870.233	497576.673	3097.72	10/24/08	357.62	2740.10
MH-16W	528099	Sierrita	3521870.818	497516.074	3100.24	10/08/08	360.03	2740.21
MH-24	563799	Sierrita	3523709.046	497390.515	3131.16	11/14/08	396.88	2734.28
MH-25A	201528	Sierrita	3526510.175	498880.349	3056.57	10/17/08	457.49	2599.08
MH-25B	208429	Sierrita	3526515.244	498870.343	3058.22	10/17/08	458.39	2599.83
MH-25C	208426	Sierrita	3526491.132	498874.666	3057.24	10/17/08	457.49	2599.75
MH-26A	201527	Sierrita	3527818.233	498852.692	3070.89	10/17/08	498.23	2572.66
MH-26B	208427	Sierrita	3527814.016	498839.900	3069.11	10/20/08	495.31	2573.80
MH-26C	208428	Sierrita	3527806.770	498865.240	3070.50	10/20/08	496.78	2573.72
MH-28	903548	Sierrita	3524609.980	497471.427	3142.18	10/06/08	402.17	2740.01
MH-29	903649	Sierrita	3522805.518	497604.326	3123.15	10/07/08	381.52	2741.63
MH-30	903884	Sierrita	3525926.812	496682.307	3232.45	10/06/08	417.11	2815.34
MO-2007-1A	907342	Sierrita	3529331.380	500016.947	2967.65	10/17/08	431.02	2536.63
MO-2007-1B	907210	Sierrita	3529325.119	500021.574	2966.82	10/17/08	431.64	2535.18
MO-2007-1C	907209	Sierrita	3529328.959	500013.405	2968.58	10/21/08	429.49	2539.09
MO-2007-2	906765	Sierrita	3527621.102	497912.410	3153.83	10/17/08	578.54	2575.29
MO-2007-3B	906816	Sierrita	3528508.801	500522.491	2912.15	10/22/08	361.77	2550.38
MO-2007-3C	906817	Sierrita	3528508.743	500529.713	2911.90	10/21/08	361.99	2549.91
MO-2007-4A	907213	Sierrita	3525634.956	500383.682	2923.63	10/22/08	309.65	2613.98
MO-2007-4B	907212	Sierrita	3525613.952	500380.947	2923.57	10/22/08	310.77	2612.80
MO-2007-4C	907211	Sierrita	3525624.484	500382.217	2923.66	10/22/08	311.41	2612.25
MO-2007-5B	907456	Sierrita	3523743.376	500013.850	2944.35	10/23/08	272.16	2672.19
MO-2007-5C	907457	Sierrita	3523736.459	500014.152	2944.91	10/23/08	285.03	2659.88

**TABLE 3**  
**Groundwater Elevation Data for Water Levels Collected in Fourth Quarter 2008**

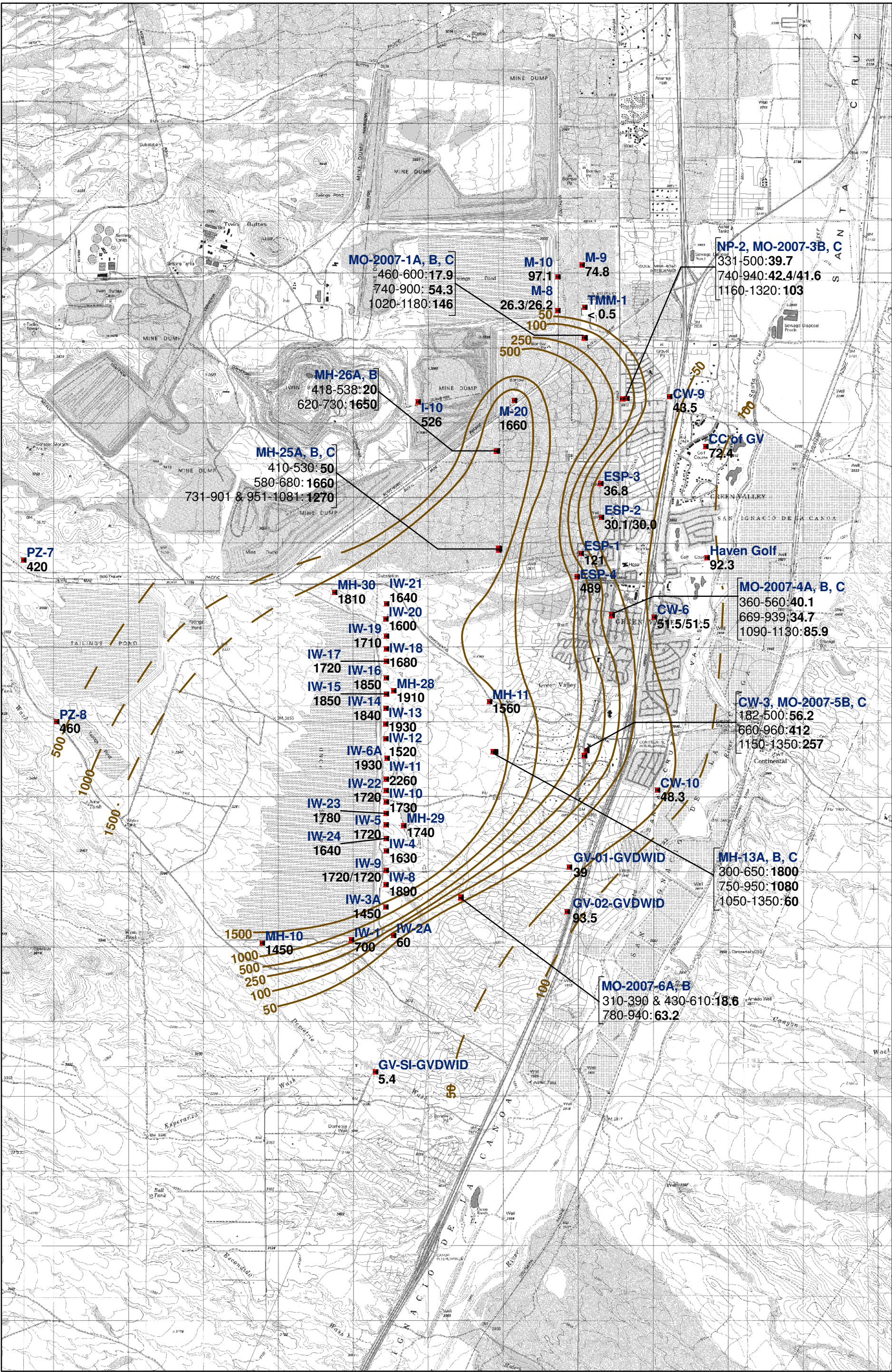
Well Name	ADWR 55 Well Registry Number	Survey Source	UTM North	UTM East	Measuring Point Elevation (ft amsl)	Date	Depth to Water (feet)	Groundwater Elevation (ft amsl)
MO-2007-6A	907607	Sierrita	3521842.050	498367.161	3043.37	10/23/08	307.85	2735.52
MO-2007-6B	907606	Sierrita	3521849.495	498367.887	3043.05	10/23/08	318.17	2724.88
PZ-7	561870	Sierrita	3526357.485	492533.171	3549.17	10/14/08	139.73	3409.44
PZ-8	561866	Sierrita	3524196.243	492972.681	3480.36	10/08/08	222.49	3257.87
PZ-9	561859	Sierrita	3525568.717	493180.504	3508.07	11/14/08	Dry	<3280
WELLS FOR QUARTERLY [PLUME] MONITORING NOT CONTROLLED BY SIERRITA								
1350	ND	TBPI	3528452.906	499357.609	3033.25	11/05/08	479.21	2554.04
CC OF GV	501760	HGC	3527876.220	501635.382	2823.45	11/14/08	263.13	2560.32
CW-3	627483	HGC	3523809.985	500047.663	2941.71	10/06/08	271.78	2669.93
CW-6	627485	CWC	3525794.239	500891.072	2867.00	10/07/08	256.30	2610.70
CW-7	502546	CWC	3528094.155	499659.842	2987.50	10/07/08	429.80	2557.70
CW-8	543600	CWC	3525661.191	499798.520	2957.50	10/07/08	342.75	2614.75
CW-9	588121	CWC	3528740.784	501072.040	2834.30	10/07/08	316.05	2518.25
CW-10	207982	CWC	3523455.502	500913.364	2868.50	10/07/08	190.65	2677.85
GV-01-GVDWID	603428	HGC	3522254.157	499812.869	2942.35	11/25/08	228.00	2714.35
GV-02-GVDWID	603429	HGC	3521654.457	499786.207	2930.47	11/25/08	199.58	2730.89
GV-SI-GVDWID	208825	HGC	3519509.930	497227.175	3042.65	11/06/08	246.00	2796.65
I-10	608525	Sierrita	3528469.536	497797.957	3210.58	10/24/08	660.82	2549.76
M-8	87390	Sierrita	3529692.237	499658.916	2999.53	10/28/08	468.82	2530.71
M-9	501652	Sierrita	3530303.954	499984.173	2973.81	10/28/08	457.72	2516.09
M-10	501653	Sierrita	3530143.114	499659.027	3005.68	10/28/08	483.70	2521.98
M-20	906595	TBPI	3528491.771	499082.070	3054.00	10/28/08	498.00	2556.00
NP-2	605898	HGC	3528517.116	500582.904	2906.56	10/09/08	356.24	2550.32
TMM-1	616156	HGC	3529736.231	500018.323	2967.08	10/09/08	439.80	2527.28

UTM = Universal Transverse Mercator, Zone 12 Band S  
ft amsl = feet above mean sea level  
<sup>1</sup>Water level measurement was collected under dynamic conditions and not used for contouring  
HGC = Hydro Geo Chem, Inc.

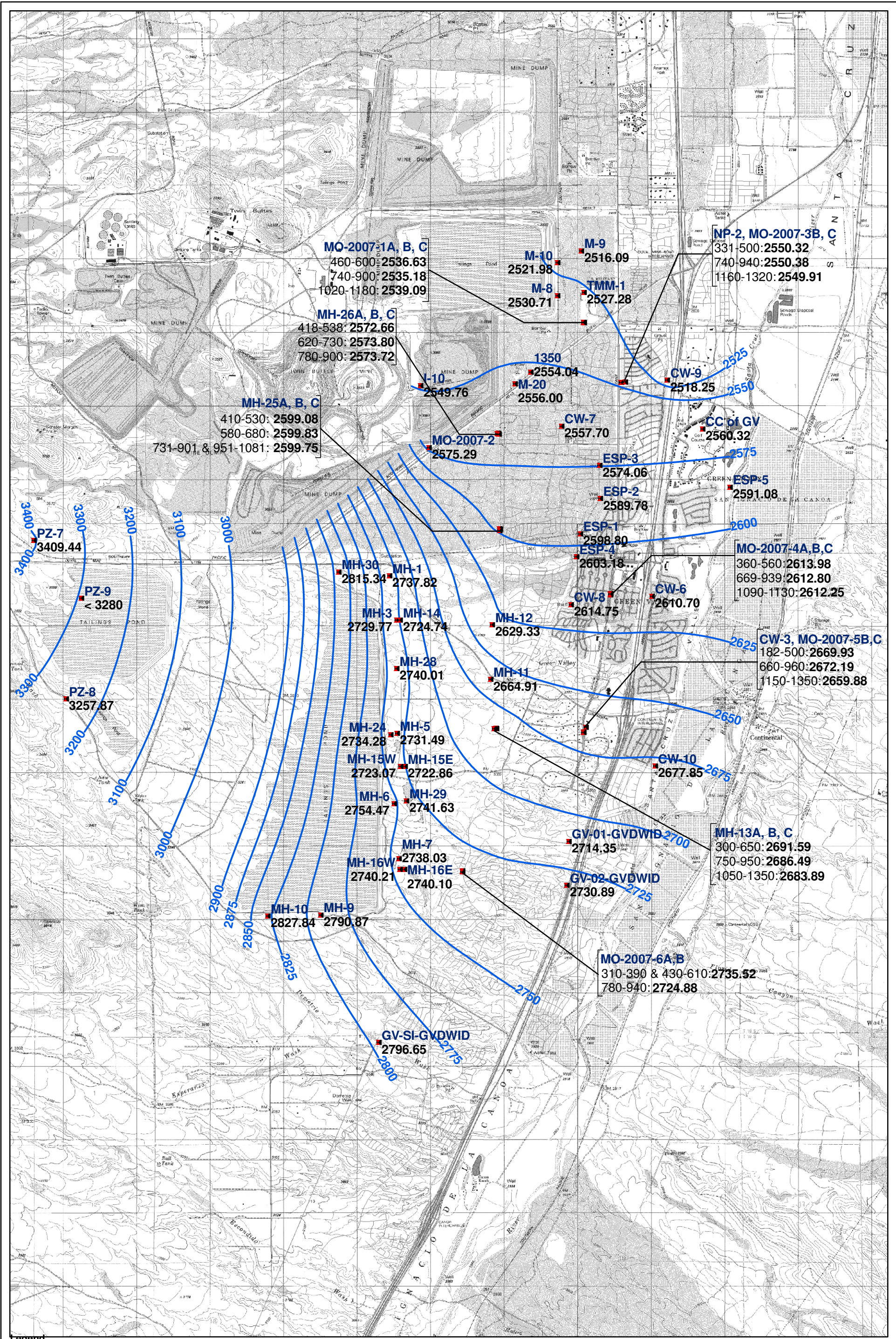
## FIGURES













**APPENDIX A**

**FOURTH QUARTER 2008  
DATA VERIFICATION REPORT FOR GROUNDWATER SAMPLES  
COLLECTED BY FREEPORT-MCMORAN SIERRITA INC.  
AND HYDRO GEO CHEM, INC.**





**APPENDIX A**

**FOURTH QUARTER 2008**

**DATA VERIFICATION REPORT FOR GROUNDWATER SAMPLES**

**COLLECTED BY FREEPORT-MCMORAN SIERRITA INC.**

**AND HYDRO GEO CHEM, INC.**

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December 18, 2008



## TABLE OF CONTENTS

1.	INTRODUCTION .....	2
2.	HGC FIELD OPERATIONS .....	3
2.1	Water Level Monitoring .....	3
2.2	Groundwater Sampling .....	4
2.2.1	Pre-Sampling Field Activities .....	4
2.2.2	Well Purging, Field Measurements, and Sample Collection .....	5
2.2.3	Post-Sampling Field Activities .....	6
3.	SAMPLE HANDLING .....	7
4.	LABORATORY QUALITY CONTROL .....	9
4.1	Licensure .....	9
4.2	Analytical Methods .....	9
4.3	Method Detection Limits (MDLs) and Practical Quantification Limits (PQLs) ..	10
4.4	Timeliness .....	10
4.5	Quality Control Measurements .....	11
4.5.1	Preparation Blanks, Calibration Blanks, and Calibration Verification Standards .....	11
4.5.2	Analytical Spikes and Analytical Spike Duplicates .....	12
4.5.3	Laboratory Control Samples .....	12
4.5.4	Laboratory Duplicate Samples .....	12
4.5.5	Field Blank Samples .....	13
5.	DATA QUALITY INDICATORS .....	15
5.1	Precision .....	15
5.2	Bias .....	17
5.3	Accuracy .....	17
5.4	Representativeness .....	17
5.5	Comparability .....	18
5.6	Completeness .....	18
5.7	Sensitivity .....	18
6.	REFERENCES .....	19

## TABLE

### A.1 ACZ Project ID and Associated Wells



## 1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the fourth quarter 2008 (Q4-2008) by Freeport-McMoRan Sierrita Inc. (Sierrita), and Hydro Geo Chem, Inc. (HGC) pursuant to Mitigation Order on Consent Docket No. P-50-06 (MO). Sierrita conducted groundwater sampling and analysis at wells under its control with the exception of Twin Buttes Properties, Inc. (TBPI) wells I-10, M-8, M-9, M-10 and M-20 which were sampled by Sierrita with the permission of TBPI. HGC collected groundwater samples from wells outside the control of Sierrita. All analytical results for groundwater samples collected for this project during the fourth quarter of 2008 were provided to HGC by ACZ Laboratories, Inc. (ACZ) for preparation of the Q4-2008 Groundwater Monitoring Report.

Quality assurance (QA) and quality control (QC) procedures are specified in the *Quality Assurance Project Plan for Aquifer Characterization Plan (QAPP)* (Appendix E of HGC, 2006) for field sampling, chain-of-custody (COC) documentation, laboratory analysis, and reporting. This report does not review field sampling or sample handling for samples collected by Sierrita since this information is evaluated following the provisions of the *Quality Assurance/Quality Control Plan for Water Monitoring, Phelps Dodge Sierrita, Inc.* (PDSI, 2005). This report does review field sampling for samples collected by HGC. Additionally, sample handling and laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) given in the QAPP.

Appendix C of the main text of this report contains laboratory reports for Q4-2008 samples collected by Sierrita and HGC including COC forms, laboratory correspondence, QC summaries, data qualifiers, and any case narratives. The Q4-2008 analytical results for all 79 samples collected by Sierrita and HGC and are contained in 18 reports having the ACZ Project numbers identified in Table A.1.

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

## **2. HGC FIELD OPERATIONS**

Field operations for this project consisted of the following for all monitoring wells sampled by HGC:

- Static water level measurement,
- Well purging,
- Collection of water quality field parameters (pH, specific conductance [SC] in microsiemens per centimeter [ $\mu\text{S}/\text{cm}$ ], and temperature in degrees Celsius [ $^{\circ}\text{C}$ ]),
- Collection of groundwater samples for water quality analysis,
- Collection of groundwater quality assurance and quality control samples, and
- Equipment decontamination.

All documentation of field activities was evaluated for quality assurance and has been deemed to have met the documentation requirements stated in the QAPP.

### **2.1 Water Level Monitoring**

Static water level measurements were collected by HGC at 11 wells during the fourth quarter of 2008. To accommodate Green Valley Domestic Water Improvement District's (GVDWID) pumping schedule it is not always possible to collect static water levels because certain wells cannot be shutdown. Water level measurements from wells GV-SI-GVDWID and GV-01-GVDWID and GV-02-GVDWID were collected on November 6, 2008 and November 25, 2008, respectively by GVDWID personnel and provided to HGC. In all cases, the wells were allowed to come to static conditions before collecting the water level measurement. Before



measuring the static water level at each well, the battery on the water level indicator was checked and the sensitivity level was adjusted, if necessary. Each measurement was collected and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

## **2.2 Groundwater Sampling**

During this monitoring period groundwater samples were collected from wells designated for sampling in the quarterly monitoring schedule of the Work Plan. More detailed information regarding the wells sampled for water quality and water level measurements is listed in Table 1 of the main text.

### **2.2.1 Pre-Sampling Field Activities**

On each day of sampling, the pH<sup>1</sup> and SC<sup>2</sup> probe was calibrated. In addition, the water level indicator was checked for a signal, which indicates a working meter and battery strength. On each day where sampling extended for more than half a day, a mid-day calibration check was performed on the pH and SC probe to ensure accurate measurement.

In addition to calibrating the instruments each day, measures were taken to 1) properly decontaminate field equipment, 2) ensure the appropriate storage and transport temperature

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<sup>1</sup> Field pH meter was calibrated using a two point calibration and pH buffers 4 and 7

<sup>2</sup> Field SC meter was calibrated using a standard stock solution of 1413  $\mu\text{S}/\text{cm}$

of the samples, and 3) document activities related to the collection of groundwater samples as part of this project. These objectives were met by 1) replenishing or obtaining supplies of deionized water and ice daily, 2) use of the proper preservative and sample collection containers, 3) properly packing the samples on ice during field activities, 4) using deionized water to properly decontaminate field equipment prior to the start of sampling each day and after sampling at each well, and 5) obtaining the appropriate field notebook in order to document field activities related to the groundwater monitoring program.

### 2.2.2 Well Purging, Field Measurements, and Sample Collection

Ideally, three wetted casing volumes were purged from each well prior to sampling. However, when three casing volumes could not be purged, this information was noted on the groundwater sampling form (Appendix C) of each well for which this was the case. In cases where purging was necessary prior to sample collection the purge water was discharged to the ground surface.

Field measurements were collected at varying intervals during well purging at each well where a water quality sample was collected. Field parameters were monitored until a consistent measurement was obtained.

During this monitoring period, filtered and unfiltered groundwater samples were collected for analysis from 11 plume monitoring wells not under the control of Sierrita. Filtered and unfiltered groundwater samples were collected concurrently by using a single container to

collect an initial sample for separation into bottles for filtered and unfiltered analyses. After collecting the initial sample, the unfiltered sample was collected by pouring a 500-milliliter aliquot of the initial sample into a non-preserved bottle for sulfate analysis. Then each filtered sample was collected by filtering the remaining portion of the initial sample using a clean filtration apparatus and one unused, disposable 0.45-micron filter. All bottles were provided by ACZ. Bottles were checked for the correct preservative and maintained in a clean and secure work area, until used in the field.

### 2.2.3 Post-Sampling Field Activities

Post sampling field activities consisted of equipment decontamination, sample storage, and sample shipping. Field equipment that comes into contact with the sample was decontaminated using a small amount of Alconox<sup>®</sup> detergent and deionized water. After washing, the equipment was rinsed thoroughly with deionized water.

After sample collection, samples from each well were placed into a plastic bag and stored on ice until they could be packed securely for shipping to ACZ. In addition, each set of samples collected from each well was individually bagged (without ice) to prevent the label from getting soaked with water and rubbing off or becoming illegible.

### 3. SAMPLE HANDLING

All samples collected by Sierrita and HGC were shipped to ACZ for analysis. COC documentation accompanied all samples submitted and included the sample name, collection date and time. COCs contained in laboratory reports included the date and time the samples were received by ACZ. As noted on the analytical data reports from ACZ, all of the sample bottles were received intact, properly preserved, and in good condition.

The temperatures of the following six shipping containers (identified by their laboratory login numbers) exceeded 4 °C upon receipt at the laboratory.

ACZ Project ID	Sample Collection Date	Sample Relinquished Date	Sample Received Date by ACZ	Temperature Upon Receipt (°C)
L72336	10/06/08, 10/07/08	10/08/08	10/09/08	12
L72383	10/08/08	10/09/08	10/10/08	4.8
L72606	10/21/08	10/21/08	10/22/08	4.2
L72612	10/20/08	10/21/08	10/22/08	4.2
L72698	10/24/08	10/27/08	10/28/08	5.3
L72758	10/27/08	10/29/08	10/30/08	4.6

As noted in the above table, the samples were shipped within three days of sample collection, and the time between sample collection and receipt of samples by ACZ ranged from one to four days. This temperature exceedance is not considered to have a significant impact on the analytical results pertaining to the sulfate analysis for these samples.



## **4. 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 turn-around-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.

### **4.1 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.

### **4.2 Analytical Methods**

The following list identifies the methods used for sulfate analysis during this monitoring period:

- SM4500 SO4-D (Gravimetric)
- U.S. Environmental Protection Agency (EPA) 300.0 (Ion-Chromatography)
- EPA 375.4 (Turbidimetric)

#### 4.3 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 <sup>1</sup> (mg/L)
EPA 300.0	0.5	3	10
EPA 375.4	1	5	10
SM4500 SO4-D	10	50	10

mg/L = milligrams per liter

<sup>1</sup> Target MDL from Table E.2 of QAPP

#### 4.4 Timeliness

Holding time was derived from the EPA methods utilized and were calculated beginning from the time of sample collection. Samples collected on October 9, 2008 (CCOFGV, TMM-1, GV-01-GVDWID, GV-02-GVDWID, and GV-SI-GVDWID) were qualified with a “C4” flag, indicating that confirmatory analysis was past holding time. In addition, samples collected on October 6 and 7, 2008 for total sulfate (CW-3, NP-2, CW-6, DUP100708, CW-10, CW-9,

HAVEN GOLF, and FB100708) were qualified with a “H1” flag, indicating that sample analysis was performed past holding time.

## **4.5 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
- Field blank samples

### **4.5.1 Preparation Blanks, Calibration Blanks, and Calibration Verification Standards**

Preparation blanks were run with each group of samples submitted for sulfate analyses using the gravimetric method (SM4500 SO<sub>4</sub>-D). All preparation blanks were prepared from analyte-free water and treated as routine samples. Analytical results of all of the preparation blanks showed that no target analytes were detected at the indicated MDL.

Results from the analyses of the initial calibration blanks and initial calibration verification standards conducted by EPA Methods 300.0 and 375.4 also were reviewed. The results of each initial calibration blank analyzed showed no detections of the target analyte. All



analytical results for the initial calibration verification standards and laboratory fortified blanks that were analyzed showed percent recoveries that were within the acceptance criteria specified by the ACZ QA plan and the QAPP.

#### 4.5.2 Analytical Spikes and Analytical Spike Duplicates

Analytical spike and spike duplicate samples were analyzed for all sulfate samples that were analyzed using EPA Method 300.0. Spike recoveries for most analyses were between 90 and 110 percent. Instances in which analytical spike recoveries were high or low were qualified with an “M1” or “M2” flag, respectively. However, in each case the method control sample recoveries were acceptable.

#### 4.5.3 Laboratory Control Samples

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

#### 4.5.4 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 5.1. 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 all 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.

#### 4.5.5 Field Blank Samples

During the fourth quarter of 2008, a total of four field blank samples were collected. Three of these were field and equipment blank samples containing filtered deionized water (TB111008, EQB100708, and EQB111008), and one field blank sample collected using unfiltered deionized water (FB100708). All of these samples were collected in the field and were submitted along with other samples to evaluate the potential for contaminant introduction under field conditions. As required by Section 4.2.1.5 of the QAPP, a minimum of one field blank sample was collected every time an equipment blank sample was collected at a rate of one in every twenty samples. Analytical results from equipment blank EQB100708 and field blank TB111008 showed no detections. However, sulfate was detected in field blank FB100708 and equipment blank EQB111008 at concentrations of 2.2 mg/L and 10 mg/L, respectively. These low levels of sulfate are not considered significant given the concentration of sulfate in the samples.



## **5. 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 Q4-2008 groundwater sampling and analysis conducted by Sierrita.

### **5.1 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 4.5.2 and 4.5.4, there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period, a total of five field duplicate samples were collected. Four of these (DUP102208A, DUP102408A, DUP102808A, and DUP103008A) were collected by Sierrita for filtered analysis, whereas DUP100708 was collected by HGC for filtered and unfiltered sulfate analysis. The collection of five field duplicate samples exceeds the QA/QC goal of collecting one duplicate sample for every twenty groundwater samples collected, as stated in Section 4.2.1.5 of the QAPP.

Results for the five field duplicate samples collected are provided in the table below. The range of RPD values was between zero and 1.90 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 deemed to be met.

Well ID	Duplicate Sample ID	ACZ Project ID	Sulfate (mg/L)	Sulfate Duplicate (mg/L)	RPD (%)
CW-6	DUP100708	L72335	51.5	51.5	0
MO-2007-3B	DUP102208A	L72783	42.4	41.6	1.90
IW-9	DUP102408A	L72697	1720	1720	0
M-8	DUP102808A	L72783	26.3	26.2	0.38
ESP-2	DUP103008A	L72783	30.1	30.0	0.33

mg/L = milligrams per liter  
RPD = Relative Percent Difference

## **5.2 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.

## **5.3 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 4.5.1, 4.5.2, and 4.5.3 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.

## **5.4 Representativeness**

All samples were taken from locations specified in the Work Plan (HGC, 2006) 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.

## **5.5 Comparability**

All samples were collected using standardized procedures (HGC, 2006 and 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.

## **5.6 Completeness**

All samples collected by Sierrita and HGC were subsequently analyzed and reported by ACZ. All samples collected and 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.

## **5.7 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.

## **6. 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.





## TABLE



**TABLE A.1**  
**ACZ Project ID and Associated Wells**

<b>ACZ Project ID</b>	<b>Wells Reported</b>
<i>Number of wells sampled by <b>Sierrita</b><sup>1</sup>: 59</i> <i>Number of duplicate samples collected: 4</i> <i>Number of blank samples collected: 2 (1 field blank and 1 equipment blank)</i>	
L72336	MH-28, MH-29
L72338	MH-30
L72383	PZ-8
L72507	PZ-7
L72578	MH-25A, MH-25B, MH-25C, MH-26
L72586	MO-2007-1A, MO-2007-1B
L72606	MO-2007-1C, MO-2007-3C
L72612	MH-13A, MH-13B, MH-13C, MH-26B, IW-19
L72697	IW-18, IW-20, IW-21, IW-22, IW-23, IW-24, DUP102408A
L72698	IW-11, IW-12, IW-13, IW-14, IW-15, IW-16, IW-17
L72699	IW-1, IW-2A, IW-4, IW-6A, IW-8, IW-9, IW-10
L72758	IW-3A, IW-5
L72783	MO-2007-3B, -4A, -4B, -4C, -5B, -5C, -6A, -6B, DUP102208A, I-10, M-8, M-9, M-10, M-20, DUP102808A, ESP-1, ESP-2, ESP-3, ESP-4, DUP103008A
L72925	MH-10
L72957	MH-11, EQB111008, TB111008
<i>Number of wells sampled by <b>HGC</b><sup>2</sup>: 11</i> <i>Number of duplicate samples collected: 1</i> <i>Number of blank samples collected: 2 (1 unfiltered field blank and 1 filtered equipment blank)</i>	
L72335 <sup>3</sup>	CW-3, NP-2, CW-6, CW-9, CW-10, HAVEN GOLF, DUP100708, EQB100708, FB100708
L72393	CCOFGV, TMM-1, GV-01-GVDWID, GV-02-GVDWID, GV-SI-GVDWID
L73166 <sup>4</sup>	CW-3, NP-2, CW-6, CW-9, CW-10, HAVEN GOLF, DUP100708, FB100708

<sup>1</sup> Samples collected by Sierrita were filtered in the field using a disposable 0.45-micron filter.

<sup>2</sup> Samples collected by HGC were both filtered and unfiltered.

<sup>3</sup> Samples analyzed for dissolved sulfate

<sup>4</sup> Samples analyzed for total sulfate



## **APPENDIX B**

### **ANALYTICAL DATA REPORTS FROM ACZ LABORATORIES, INC.**



Dan Simpson  
Hydro Geo Chem, Inc.  
51 West Wetmore Rd. Suite 101  
Tucson, AZ 85705

November 05, 2008

Cc: Jim Norris, Bill Dorris, Ned Hall

Project ID: OJ06DZ  
ACZ Project ID: L72335

Dan Simpson:

Enclosed are revised analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 09, 2008 and reported on October 23, 2008. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L72335. Please reference this number in all future inquiries.

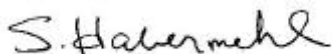
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72335. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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.

All samples and sub-samples associated with this project will be disposed of after November 23, 2008. 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

November 06, 2008

Project ID: OJ06DZ

ACZ Project ID: L72335

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 9 ground water samples from FMI Gold & Copper - Sierrita on October 9, 2008. 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 L72335. 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:

This project has been regenerated to change the billing instructions.

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: CW-3

ACZ Sample ID: **L72335-01**

Date Sampled: 10/06/08 12:25

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	56.2		*	mg/L	0.5	3	10/18/08 21:32	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: NP-2

ACZ Sample ID: **L72335-02**

Date Sampled: 10/06/08 14:25

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	39.7		*	mg/L	0.5	3	10/18/08 21:50	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: CW-6

ACZ Sample ID: **L72335-03**

Date Sampled: 10/07/08 09:10

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	51.5		*	mg/L	0.5	3	10/18/08 22:08	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: DUP100708

ACZ Sample ID: **L72335-04**

Date Sampled: 10/07/08 00:00

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	51.5		*	mg/L	0.5	3	10/18/08 22:27	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: CW-10

ACZ Sample ID: **L72335-05**

Date Sampled: 10/07/08 10:45

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	48.3		*	mg/L	0.5	3	10/18/08 22:45	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: CW-9

ACZ Sample ID: **L72335-06**

Date Sampled: 10/07/08 11:50

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	43.5		*	mg/L	0.5	3	10/18/08 23:39	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: HAVEN GOLF

ACZ Sample ID: **L72335-07**

Date Sampled: 10/07/08 13:02

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	92.3		*	mg/L	0.5	3	10/18/08 23:57	aml

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: EQB100708

ACZ Sample ID: **L72335-08**

Date Sampled: 10/07/08 12:55

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U	*	mg/L	0.5	3	10/19/08 0:15	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: FB100708

ACZ Sample ID: **L72335-09**

Date Sampled: 10/07/08 12:55

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	2.2	B		mg/L	0.5	3	10/22/08 3:00	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.

**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.

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72335**

Project ID: OJ06DZ

Sulfate		300.0 - Ion Chromatography											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG253987													
WG253987ICV	ICV	10/14/08 13:25	WI081007-1	50		50.62	mg/L	101.2	90	110			
WG253987ICB	ICB	10/14/08 13:43				U	mg/L		-1.5	1.5			
WG253987ICV1	ICV	10/18/08 19:25	WI081007-1	50		51.7	mg/L	103.4	90	110			
WG253987ICB1	ICB	10/18/08 19:44				U	mg/L		-1.5	1.5			
WG253987LFB	LFB	10/18/08 20:02	WI081007-3	30		31.5	mg/L	105	90	110			
WG253987ICV2	ICV	10/19/08 13:27	WI081007-1	50		51.38	mg/L	102.8	90	110			
WG253987ICB2	ICB	10/19/08 13:45				U	mg/L		-1.5	1.5			
L72214-01AS	AS	10/19/08 14:21	WI081007-3	1500	170	1440	mg/L	84.7	90	110			M2
L72214-01DUP	DUP	10/19/08 14:39			170	174	mg/L				2.3	20	RA
WG254269													
WG254269ICV	ICV	10/14/08 13:25	WI081007-1	50		50.62	mg/L	101.2	90	110			
WG254269ICB	ICB	10/14/08 13:43				U	mg/L		-1.5	1.5			
WG254269ICV1	ICV	10/22/08 0:17	WI081007-1	50		52.21	mg/L	104.4	90	110			
WG254269ICB1	ICB	10/22/08 0:35				U	mg/L		-1.5	1.5			
WG254269LFB	LFB	10/22/08 0:53	WI081007-3	30		32.16	mg/L	107.2	90	110			
WG254269ICV2	ICV	10/22/08 20:32	WI081007-1	50		51.58	mg/L	103.2	90	110			
WG254269ICB2	ICB	10/22/08 20:50				U	mg/L		-1.5	1.5			
L72096-07DUP	DUP	10/22/08 21:26			41	41.6	mg/L				1.5	20	
L72247-01AS	AS	10/22/08 22:02	WI081007-3	600	710	1270	mg/L	93.3	90	110			

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72335**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72335-01</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-02</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-03</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-04</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-05</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-06</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-07</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72335-08</b>	WG253987	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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: **L72335**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72335  
Date Received: 10/9/2008  
Received By: gac  
Date Printed: 11/5/2008

**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)
NA7107	2.7	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**  
OJ06DZ

ACZ Project ID: L72335  
Date Received: 10/9/2008  
Received By:

**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
L72335-01	CW-3									X		<input type="checkbox"/>
L72335-02	NP-2									X		<input type="checkbox"/>
L72335-03	CW-6									X		<input type="checkbox"/>
L72335-04	DUP100708									X		<input type="checkbox"/>
L72335-05	CW-10									X		<input type="checkbox"/>
L72335-06	CW-9									X		<input type="checkbox"/>
L72335-07	HAVEN GOLF									X		<input type="checkbox"/>
L72335-08	EQB100708									X		<input type="checkbox"/>
L72335-09	FB100708									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



L72335

<b>ACZ Laboratories, Inc.</b>				<b>CHAIN of CUSTODY</b>														
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493																		
<b>Report to:</b>																		
Name: Dan Simpson				Address: 51 W Wetmore Rd														
Company: Hydro Geo Chem, Inc				Tucson, AZ 85705														
E-mail: dana@hgcinc.com				Telephone: 520-293-1500 x133														
<b>Copy of Report to:</b>																		
Name: Jim Norris, Ned Hall, Bill Dorris				E-mail: jimn@hgcinc.com, billy_dorris@fmi.com														
Company: HGC / FMI				Telephone: 520-293-1500 x112, 520-648-8873														
<b>Invoice to:</b>																		
Name: Ned Hall				Address: 6200 Duval Mine Road														
Company: FMI				PO Box 527, Green Valley, AZ 85622														
E-mail: ned_hall@fmi.com				Telephone: 520-648-8873														
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? <span style="float: right;">YES <input type="checkbox"/></span> <span style="float: right;">NO <input checked="" type="checkbox"/></span> 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.																		
<b>PROJECT INFORMATION</b>				<b>ANALYSES REQUESTED (attach list or use quote number)</b>														
Quote #: Sierra Sulfate				# of Containers	SO4													
Project/PO #: OJ0325																		
Reporting state for compliance testing: AZ																		
Sampler's Name: John Villinski																		
Are any samples NRC licensable material? No																		
SAMPLE IDENTIFICATION		DATE:TIME		Matrix														
CW-3		10-6-08/12:25		GW	2	X												
NP-2		10-6-08/14:25		GW	2	X												
CW-6		10-7-08/9:10		GW	2	X												
DUP100708		10-7-08		GW	2	X												
CW-10		10-7-08/10:45		GW	2	X												
CW-9		10-7-08/11:50		GW	2	X												
HAVEN GOLF		10-7-08/13:02		GW	2	X												
EQB100708		10-7-08/12:55		GW	1	X												
FB100708		10-7-08/12:55		GW	1	X												
Matrix				SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)														
<b>REMARKS</b>																		
Please refer to ACZ's terms & conditions located on the reverse side of this COC.																		
RELINQUISHED BY:				DATE:TIME				RECEIVED BY:				DATE:TIME						
[Signature]				10/8/08-14:30				[Signature]				10-9-08 9:14						

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

October 23, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72336- SULFATE ONLY

Bill Dorris:

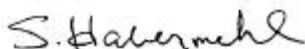
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 09, 2008. This project was assigned to ACZ's project number, L72336. Please reference this number in all future inquiries.

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.

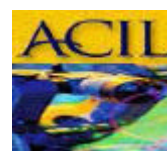
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72336. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, 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

October 22, 2008

Project ID: OJ06DZ

ACZ Project ID: L72336

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from FMI Gold & Copper - Sierrita on October 9, 2008. 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 L72336. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Samples were received outside the EPA recommended temperature of 0-6 degrees C.

**Holding Times**

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

**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.

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-28

ACZ Sample ID: **L72336-01**

Date Sampled: 10/06/08 12:45

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1910			mg/L	10	50	10/15/08 9:36	gkj

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-29

ACZ Sample ID: **L72336-02**

Date Sampled: 10/07/08 13:40

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1740			mg/L	10	50	10/15/08 9:41	gkj

**Arizona license number: AZ0102**

**Report Header Explanations**

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

**QC Sample Types**

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

**QC Sample Type Explanations**

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

**ACZ Qualifiers (Qual)**

B	Analyte concentration detected at a value between MDL and PQL.
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.

**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.

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72336

**Alkalinity as CaCO<sub>3</sub>**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254010</b>													
WG254010PBW1	PBW	10/17/08 17:37				U	mg/L		-20	20			
WG254010LCSW2	LCSW	10/17/08 17:50	WC081008-2	820.0001		811.5	mg/L	99	90	110			
WG254010PBW2	PBW	10/17/08 20:09				U	mg/L		-20	20			
WG254010LCSW5	LCSW	10/17/08 20:21	WC081008-2	820.0001		810.7	mg/L	98.9	90	110			
L72336-02DUP	DUP	10/17/08 22:57			156	151.5	mg/L				2.9	20	
WG254010PBW3	PBW	10/17/08 23:03				U	mg/L		-20	20			
WG254010LCSW8	LCSW	10/17/08 23:15	WC081008-2	820.0001		803.4	mg/L	98	90	110			
WG254010PBW4	PBW	10/18/08 2:17				U	mg/L		-20	20			
WG254010LCSW11	LCSW	10/18/08 2:29	WC081008-2	820.0001		809.6	mg/L	98.7	90	110			
WG254010LCSW14	LCSW	10/18/08 6:08	WC081008-2	820.0001		824.5	mg/L	100.5	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253886</b>													
WG253886ICV	ICV	10/16/08 22:27	II080818-1	2		2.009	mg/L	100.5	95	105			
WG253886ICB	ICB	10/16/08 22:30				U	mg/L		-0.09	0.09			
WG253886LFB	LFB	10/16/08 22:44	II081016-2	1		1.07	mg/L	107	85	115			
L72330-10AS	AS	10/16/08 23:34	II081016-2	1	U	1.043	mg/L	104.3	85	115			
L72330-10ASD	ASD	10/16/08 23:38	II081016-2	1	U	1.043	mg/L	104.3	85	115	0	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.02		.02059	mg/L	103	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0012	0.0012			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.01		.00995	mg/L	99.5	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.01	U	.00983	mg/L	98.3	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.01	U	.01008	mg/L	100.8	70	130	2.51	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.0498	mg/L	99.6	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0015	0.0015			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.0481	mg/L	96.2	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	U	.05111	mg/L	102.2	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	U	.05145	mg/L	102.9	70	130	0.66	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	II080818-1	2		2.0111	mg/L	100.6	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.009	0.009			
WG253658LFB	LFB	10/15/08 20:21	II081013-2	.5		.5028	mg/L	100.6	85	115			
L72330-04AS	AS	10/15/08 21:12	II081013-2	.5	.089	.598	mg/L	101.8	85	115			
L72330-04ASD	ASD	10/15/08 21:15	II081013-2	.5	.089	.6	mg/L	102.2	85	115	0.33	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72336**Project ID: **OJ06DZ****Beryllium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04879	mg/L	97.6	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05005		.04705	mg/L	94	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05005	U	.04745	mg/L	94.8	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05005	U	.04882	mg/L	97.5	70	130	2.85	20	

**Cadmium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04871	mg/L	97.4	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.04774	mg/L	95.5	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	U	.04911	mg/L	98.2	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	U	.04941	mg/L	98.8	70	130	0.61	20	

**Calcium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253886</b>													
WG253886ICV	ICV	10/16/08 22:27	II080818-1	100		96.57	mg/L	96.6	95	105			
WG253886ICB	ICB	10/16/08 22:30				U	mg/L		-0.6	0.6			
WG253886LFB	LFB	10/16/08 22:44	II081016-2	67.97008		71.49	mg/L	105.2	85	115			
L72330-10AS	AS	10/16/08 23:34	II081016-2	67.97008	83.4	150.26	mg/L	98.4	85	115			
L72330-10ASD	ASD	10/16/08 23:38	II081016-2	67.97008	83.4	150.04	mg/L	98	85	115	0.15	20	

**Chloride**

SM4500CL-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253724</b>													
WG253724ICB	ICB	10/14/08 8:37				U	mg/L		-3	3			
WG253724ICV	ICV	10/14/08 8:37	WI080808-1	54.945		56.1	mg/L	102.1	90	110			
WG253724LFB1	LFB	10/14/08 13:34	WI080818-2	30		32.3	mg/L	107.7	90	110			
WG253724LFB2	LFB	10/14/08 13:38	WI080818-2	30		32.3	mg/L	107.7	90	110			
L72330-09AS	AS	10/14/08 13:38	WI080818-2	30	8	39.5	mg/L	105	90	110			
L72330-10DUP	DUP	10/14/08 13:38			6	6.1	mg/L				1.7	20	RA

**Chromium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	II080818-1	2		1.991	mg/L	99.6	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.03	0.03			
WG253658LFB	LFB	10/15/08 20:21	II081013-2	.5		.501	mg/L	100.2	85	115			
L72330-04AS	AS	10/15/08 21:12	II081013-2	.5	U	.538	mg/L	107.6	85	115			
L72330-04ASD	ASD	10/15/08 21:15	II081013-2	.5	U	.535	mg/L	107	85	115	0.56	20	



**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72336**

Project ID: **OJ06DZ**
**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	I080818-1	2.002		1.994	mg/L	99.6	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.03	0.03			
WG253658LFB	LFB	10/15/08 20:21	I081013-2	.5		.517	mg/L	103.4	85	115			
L72330-04AS	AS	10/15/08 21:12	I081013-2	.5	U	.525	mg/L	105	85	115			
L72330-04ASD	ASD	10/15/08 21:15	I081013-2	.5	U	.529	mg/L	105.8	85	115	0.76	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254010</b>													
WG254010LCSW1	LCSW	10/17/08 17:39	PCN30288	1408.8		1403	µmhos/cm	99.6	90	110			
WG254010LCSW4	LCSW	10/17/08 20:10	PCN30288	1408.8		1398	µmhos/cm	99.2	90	110			
L72336-02DUP	DUP	10/17/08 22:57			3220	3250	µmhos/cm				0.9	20	
WG254010LCSW7	LCSW	10/17/08 23:05	PCN30288	1408.8		1387	µmhos/cm	98.5	90	110			
WG254010LCSW10	LCSW	10/18/08 2:19	PCN30288	1408.8		1370	µmhos/cm	97.2	90	110			
WG254010LCSW13	LCSW	10/18/08 5:58	PCN30288	1408.8		1377	µmhos/cm	97.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	I080818-1	2		1.959	mg/L	98	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.03	0.03			
WG253658LFB	LFB	10/15/08 20:21	I081013-2	.5		.484	mg/L	96.8	85	115			
L72330-04AS	AS	10/15/08 21:12	I081013-2	.5	U	.532	mg/L	106.4	85	115			
L72330-04ASD	ASD	10/15/08 21:15	I081013-2	.5	U	.523	mg/L	104.6	85	115	1.71	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254069</b>													
WG254069ICV	ICV	10/18/08 21:53	WI081010-5	.3		.283	mg/L	94.3	90	110			
WG254069ICB	ICB	10/18/08 21:54				U	mg/L		-0.015	0.015			
WG253871LRB	LRB	10/18/08 21:56				U	mg/L		-0.015	0.015			
WG253871LFB	LFB	10/18/08 21:56	WI081010-9	.2		.1982	mg/L	99.1	90	110			
L72329-01LFM	LFM	10/18/08 21:59	WI081010-9	.2	U	.1848	mg/L	92.4	90	110			
L72329-03DUP	DUP	10/18/08 22:01			U	U	mg/L				0	20	RA
L72339-04DUP	DUP	10/18/08 22:10			U	U	mg/L				0	20	RA
L72366-02LFM	LFM	10/18/08 22:12	WI081010-9	.2	U	.1878	mg/L	93.9	90	110			

**Fluoride**

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253976</b>													
WG253976ICV	ICV	10/17/08 9:47	WC081014-1	2		2	mg/L	100	90	110			
WG253976ICB	ICB	10/17/08 9:54				U	mg/L		-0.3	0.3			
WG253976LFB1	LFB	10/17/08 9:59	WC080912-3	5		5.4	mg/L	108	90	110			
L72320-03DUP	DUP	10/17/08 11:06			U	U	mg/L				0	20	RA
WG253976LFB2	LFB	10/17/08 11:54	WC080912-3	5		5.02	mg/L	100.4	90	110			

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72336**

Project ID: **OJ06DZ**

Iron, dissolved			M200.7 ICP											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG253658														
WG253658ICV	ICV	10/15/08 20:05	I1080818-1	2		1.948	mg/L	97.4	95	105				
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.06	0.06				
WG253658LFB	LFB	10/15/08 20:21	I1081013-2	1		1.009	mg/L	100.9	85	115				
L72330-04AS	AS	10/15/08 21:12	I1081013-2	1	U	1.041	mg/L	104.1	85	115				
L72330-04ASD	ASD	10/15/08 21:15	I1081013-2	1	U	1.044	mg/L	104.4	85	115	0.29	20		
Lead, dissolved			M200.8 ICP-MS											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG253695														
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04843	mg/L	96.9	90	110				
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003				
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.04542	mg/L	90.8	85	115				
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	U	.04721	mg/L	94.4	70	130				
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	U	.04766	mg/L	95.3	70	130	0.95	20		
Magnesium, dissolved			M200.7 ICP											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG253886														
WG253886ICV	ICV	10/16/08 22:27	I1080818-1	100		98.46	mg/L	98.5	95	105				
WG253886ICB	ICB	10/16/08 22:30				U	mg/L		-0.6	0.6				
WG253886LFB	LFB	10/16/08 22:44	I1081016-2	49.96908		52.76	mg/L	105.6	85	115				
L72330-10AS	AS	10/16/08 23:34	I1081016-2	49.96908	61.5	112.62	mg/L	102.3	85	115				
L72330-10ASD	ASD	10/16/08 23:38	I1081016-2	49.96908	61.5	112.35	mg/L	101.8	85	115	0.24	20		
Manganese, dissolved			M200.7 ICP											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG253886														
WG253886ICV	ICV	10/16/08 22:27	I1080818-1	2		1.9425	mg/L	97.1	95	105				
WG253886ICB	ICB	10/16/08 22:30				U	mg/L		-0.015	0.015				
WG253886LFB	LFB	10/16/08 22:44	I1081016-2	.5		.5319	mg/L	106.4	85	115				
L72330-10AS	AS	10/16/08 23:34	I1081016-2	.5	U	.5437	mg/L	108.7	85	115				
L72330-10ASD	ASD	10/16/08 23:38	I1081016-2	.5	U	.5451	mg/L	109	85	115	0.26	20		
Mercury, dissolved			M245.1 CVAA											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG253573														
WG253573ICV	ICV	10/20/08 12:08	I1080916-2	.005		.00502	mg/L	100.4	95	105				
WG253573ICB	ICB	10/20/08 12:10				U	mg/L		-0.0002	0.0002				
WG253950														
WG253950LRB	LRB	10/20/08 17:39				U	mg/L		-0.00044	0.00044				
WG253950LFB	LFB	10/20/08 17:42	I1080924-2	.002		.00186	mg/L	93	85	115				
L72287-02LFM	LFM	10/20/08 18:18	I1080924-2	.002	U	.00178	mg/L	89	85	115				
L72287-02LFMD	LFMD	10/20/08 18:20	I1080924-2	.002	U	.00188	mg/L	94	85	115	5.46	20		

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72336

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	I080818-1	2		1.981	mg/L	99.1	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.03	0.03			
WG253658LFB	LFB	10/15/08 20:21	I081013-2	.5		.51	mg/L	102	85	115			
L72330-04AS	AS	10/15/08 21:12	I081013-2	.5	U	.525	mg/L	105	85	115			
L72330-04ASD	ASD	10/15/08 21:15	I081013-2	.5	U	.528	mg/L	105.6	85	115	0.57	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	I080818-1	2.004		1.961	mg/L	97.9	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.03	0.03			
WG253658LFB	LFB	10/15/08 20:21	I081013-2	.4985		.51	mg/L	102.3	85	115			
L72330-04AS	AS	10/15/08 21:12	I081013-2	.4985	U	.558	mg/L	111.9	85	115			
L72330-04ASD	ASD	10/15/08 21:15	I081013-2	.4985	U	.561	mg/L	112.5	85	115	0.54	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
<b>WG253945</b>													
WG253945ICV	ICV	10/16/08 19:37	W080916-5	2.416		2.419	mg/L	100.1	90	110			
WG253945ICB	ICB	10/16/08 19:38				U	mg/L		-0.06	0.06			
<b>WG253954</b>													
WG253954ICV	ICV	10/16/08 21:24	W080916-5	2.416		2.434	mg/L	100.7	90	110			
WG253954ICB	ICB	10/16/08 21:25				U	mg/L		-0.06	0.06			
WG253954LFB	LFB	10/16/08 21:27	W080913-4	2		2.128	mg/L	106.4	90	110			
L72279-02AS	AS	10/16/08 21:48	W080913-4	2	1.56	3.668	mg/L	105.4	90	110			
L72336-01DUP	DUP	10/16/08 21:51			1.62	1.619	mg/L				0.1	20	

**pH (lab)**

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254010</b>													
WG254010LCSW3	LCSW	10/17/08 17:52	PCN29627	6		6.07	units	101.2	90	110			
WG254010LCSW6	LCSW	10/17/08 20:24	PCN29627	6		6.08	units	101.3	90	110			
L72336-02DUP	DUP	10/17/08 22:57			8	7.98	units				0.3	20	
WG254010LCSW9	LCSW	10/17/08 23:17	PCN29627	6		6.08	units	101.3	90	110			
WG254010LCSW12	LCSW	10/18/08 2:31	PCN29627	6		6.05	units	100.8	90	110			
WG254010LCSW15	LCSW	10/18/08 6:10	PCN29627	6		6.12	units	102	90	110			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253886</b>													
WG253886ICV	ICV	10/16/08 22:27	I080818-1	20		19.96	mg/L	99.8	95	105			
WG253886ICB	ICB	10/16/08 22:30				U	mg/L		-0.9	0.9			
WG253886LFB	LFB	10/16/08 22:44	I081016-2	99.76186		106.82	mg/L	107.1	85	115			
L72330-10AS	AS	10/16/08 23:34	I081016-2	99.76186	2.7	109.39	mg/L	106.9	85	115			
L72330-10ASD	ASD	10/16/08 23:38	I081016-2	99.76186	2.7	108.34	mg/L	105.9	85	115	0.96	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72336

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253627</b>													
WG253627PBW	PBW	10/13/08 11:00				U	mg/L		-20	20			
WG253627LCSW	LCSW	10/13/08 11:01	PCN29987	260		272	mg/L	104.6	80	120			
L72337-01DUP	DUP	10/13/08 11:13			2820	2832	mg/L				0.4	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04969	mg/L	99.4	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.04666	mg/L	93.3	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	.0009	.04487	mg/L	87.9	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	.0009	.04626	mg/L	90.7	70	130	3.05	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253886</b>													
WG253886ICV	ICV	10/16/08 22:27	II080818-1	100		100.92	mg/L	100.9	95	105			
WG253886ICB	ICB	10/16/08 22:30				U	mg/L		-0.9	0.9			
WG253886LFB	LFB	10/16/08 22:44	II081016-2	98.21624		106.49	mg/L	108.4	85	115			
L72330-10AS	AS	10/16/08 23:34	II081016-2	98.21624	51.2	156.32	mg/L	107	85	115			
L72330-10ASD	ASD	10/16/08 23:38	II081016-2	98.21624	51.2	155.13	mg/L	105.8	85	115	0.76	20	

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253772</b>													
WG253772PBW	PBW	10/15/08 8:50				U	mg/L		-30	30			
WG253772LCSW	LCSW	10/15/08 8:55	WC080910-2	100		105	mg/L	105	80	120			
L72337-01DUP	DUP	10/15/08 9:52			1630	1619	mg/L				0.7	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04944	mg/L	98.9	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.0501		.04648	mg/L	92.8	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.0501	U	.04885	mg/L	97.5	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.0501	U	.0491	mg/L	98	70	130	0.51	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04747	mg/L	94.9	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.0456	mg/L	91.2	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	.0002	.04967	mg/L	98.9	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	.0002	.05003	mg/L	99.7	70	130	0.72	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72336**

Project ID: OJ06DZ

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253658</b>													
WG253658ICV	ICV	10/15/08 20:05	II080818-1	2		1.939	mg/L	97	95	105			
WG253658ICB	ICB	10/15/08 20:09				U	mg/L		-0.03	0.03			
WG253658LFB	LFB	10/15/08 20:21	II081013-2	.5		.534	mg/L	106.8	85	115			
L72330-04AS	AS	10/15/08 21:12	II081013-2	.5	.03	.607	mg/L	115.4	85	115			
L72330-04ASD	ASD	10/15/08 21:15	II081013-2	.5	.03	.583	mg/L	110.6	85	115	4.03	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72336**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72336-01</b>	WG253724	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254069	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG253976	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72336-02</b>	WG253724	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254069	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG253976	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72336**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72336  
Date Received: 10/9/2008  
Received By:  
Date Printed: 10/9/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)**

The client was not contacted.

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (μR/hr)
2144	12	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**  
OJ06DZ

ACZ Project ID: L72336  
Date Received: 10/9/2008  
Received By:

**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
L72336-01	MH-28		Y		Y							<input type="checkbox"/>
L72336-02	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: \_\_\_\_\_



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

October 29, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72338- SULFATE ONLY

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 09, 2008. This project was assigned to ACZ's project number, L72338. 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.

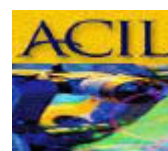
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72338. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, 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: OJ06DZ

Sample ID: MH-30

ACZ Sample ID: **L72338-01**

Date Sampled: 10/06/08 09:45

Date Received: 10/09/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1810			mg/L	20	100	10/24/08 12:16	gkj

**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.

**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.

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72338

**Alkalinity as CaCO3**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254010</b>													
WG254010PBW1	PBW	10/17/08 17:37				U	mg/L		-20	20			
WG254010LCSW2	LCSW	10/17/08 17:50	WC081008-2	820.0001		811.5	mg/L	99	90	110			
WG254010PBW2	PBW	10/17/08 20:09				U	mg/L		-20	20			
WG254010LCSW5	LCSW	10/17/08 20:21	WC081008-2	820.0001		810.7	mg/L	98.9	90	110			
WG254010PBW3	PBW	10/17/08 23:03				U	mg/L		-20	20			
WG254010LCSW8	LCSW	10/17/08 23:15	WC081008-2	820.0001		803.4	mg/L	98	90	110			
L72361-02DUP	DUP	10/18/08 0:41			367	363.9	mg/L				0.8	20	
WG254010PBW4	PBW	10/18/08 2:17				U	mg/L		-20	20			
WG254010LCSW11	LCSW	10/18/08 2:29	WC081008-2	820.0001		809.6	mg/L	98.7	90	110			
WG254010LCSW14	LCSW	10/18/08 6:08	WC081008-2	820.0001		824.5	mg/L	100.5	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	II080818-1	2		1.973	mg/L	98.7	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.09	0.09			
WG253994LFB	LFB	10/17/08 16:45	II081016-2	1		.992	mg/L	99.2	85	115			
L72215-01AS	AS	10/17/08 16:55	II081016-2	1	U	1.052	mg/L	105.2	85	115			
L72215-01ASD	ASD	10/17/08 16:58	II081016-2	1	U	1.026	mg/L	102.6	85	115	2.5	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.02		.02059	mg/L	103	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0012	0.0012			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.01		.00995	mg/L	99.5	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.01	U	.00983	mg/L	98.3	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.01	U	.01008	mg/L	100.8	70	130	2.51	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.0498	mg/L	99.6	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0015	0.0015			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.0481	mg/L	96.2	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	U	.05111	mg/L	102.2	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	U	.05145	mg/L	102.9	70	130	0.66	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2		1.9918	mg/L	99.6	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.18	0.18			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	.5		.4979	mg/L	99.6	85	115			
L72215-01AS	AS	10/16/08 15:51	II081013-2	.5	.019	.5313	mg/L	102.5	85	115			
L72215-01ASD	ASD	10/16/08 15:55	II081013-2	.5	.019	.5278	mg/L	101.8	85	115	0.66	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72338**Project ID: **OJ06DZ****Beryllium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04879	mg/L	97.6	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05005		.04705	mg/L	94	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05005	U	.04745	mg/L	94.8	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05005	U	.04882	mg/L	97.5	70	130	2.85	20	

**Cadmium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04871	mg/L	97.4	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.04774	mg/L	95.5	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	U	.04911	mg/L	98.2	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	U	.04941	mg/L	98.8	70	130	0.61	20	

**Calcium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	100		99.51	mg/L	99.5	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-12	12			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	67.97008		74.12	mg/L	109	85	115			
L72215-01AS	AS	10/16/08 15:51	I1081013-2	67.97008	184	246.26	mg/L	91.6	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I1081013-2	67.97008	184	246.5	mg/L	92	85	115	0.1	20	

**Chloride**

SM4500CL-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253724</b>													
WG253724ICB	ICB	10/14/08 8:37				U	mg/L		-3	3			
WG253724ICV	ICV	10/14/08 8:37	WI080808-1	54.945		56.1	mg/L	102.1	90	110			
WG253724LFB1	LFB	10/14/08 13:34	WI080818-2	30		32.3	mg/L	107.7	90	110			
WG253724LFB2	LFB	10/14/08 13:38	WI080818-2	30		32.3	mg/L	107.7	90	110			
L72337-04AS	AS	10/14/08 16:31	10XCL	30	160	190	mg/L	100	90	110			
L72338-01DUP	DUP	10/14/08 16:31			140	144	mg/L				2.8	20	

**Chromium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	2		2.01	mg/L	100.5	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	.5		.518	mg/L	103.6	85	115			
L72215-01AS	AS	10/16/08 15:51	I1081013-2	.5	U	.524	mg/L	104.8	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I1081013-2	.5	U	.534	mg/L	106.8	85	115	1.89	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72338**Project ID: **OJ06DZ****Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I080818-1	2.002		2.025	mg/L	101.1	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I081013-2	.5		.521	mg/L	104.2	85	115			
L72215-01AS	AS	10/16/08 15:51	I081013-2	.5	U	.529	mg/L	105.8	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I081013-2	.5	U	.521	mg/L	104.2	85	115	1.52	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254010</b>													
WG254010LCSW1	LCSW	10/17/08 17:39	PCN30288	1408.8		1403	µmhos/cm	99.6	90	110			
WG254010LCSW4	LCSW	10/17/08 20:10	PCN30288	1408.8		1398	µmhos/cm	99.2	90	110			
WG254010LCSW7	LCSW	10/17/08 23:05	PCN30288	1408.8		1387	µmhos/cm	98.5	90	110			
L72361-02DUP	DUP	10/18/08 0:41			7340	7320	µmhos/cm				0.3	20	
WG254010LCSW10	LCSW	10/18/08 2:19	PCN30288	1408.8		1370	µmhos/cm	97.2	90	110			
WG254010LCSW13	LCSW	10/18/08 5:58	PCN30288	1408.8		1377	µmhos/cm	97.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I080818-1	2		1.947	mg/L	97.4	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I081013-2	.5		.501	mg/L	100.2	85	115			
L72215-01AS	AS	10/16/08 15:51	I081013-2	.5	U	.514	mg/L	102.8	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I081013-2	.5	U	.519	mg/L	103.8	85	115	0.97	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253781</b>													
WG253781ICV	ICV	10/15/08 11:04	WI081010-5	.3		.2835	mg/L	94.5	90	110			
WG253781ICB	ICB	10/15/08 11:05				U	mg/L		-0.015	0.015			
WG253700LRB	LRB	10/15/08 11:06				U	mg/L		-0.015	0.015			
WG253700LFB	LFB	10/15/08 11:06	WI081010-9	.2		.2	mg/L	100	90	110			
L72323-01DUP	DUP	10/15/08 11:20			U	U	mg/L				0	20	RA
L72323-02LFM	LFM	10/15/08 11:22	WI081010-9	.2	U	.1917	mg/L	95.9	90	110			

**Fluoride**

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253976</b>													
WG253976ICV	ICV	10/17/08 9:47	WC081014-1	2		2	mg/L	100	90	110			
WG253976ICB	ICB	10/17/08 9:54				U	mg/L		-0.3	0.3			
WG253976LFB1	LFB	10/17/08 9:59	WC080912-3	5		5.4	mg/L	108	90	110			
L72172-02AS	AS	10/17/08 10:16	WC080912-3	5	U	5.36	mg/L	107.2	90	110			
L72320-03DUP	DUP	10/17/08 11:06			U	U	mg/L				0	20	RA
WG253976LFB2	LFB	10/17/08 11:54	WC080912-3	5		5.02	mg/L	100.4	90	110			



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72338

Iron, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I080818-1	2		1.951	mg/L	97.6	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-1.2	1.2			
WG253741LFB	LFB	10/16/08 15:42	I081013-2	1		1.041	mg/L	104.1	85	115			
L72215-01AS	AS	10/16/08 15:51	I081013-2	1	.52	1.54	mg/L	102	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I081013-2	1	.52	1.524	mg/L	100.4	85	115	1.04	20	
Lead, dissolved					M200.8 ICP-MS								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04843	mg/L	96.9	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.04542	mg/L	90.8	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	U	.04721	mg/L	94.4	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	U	.04766	mg/L	95.3	70	130	0.95	20	
Magnesium, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I080818-1	100		100.01	mg/L	100	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-12	12			
WG253741LFB	LFB	10/16/08 15:42	I081013-2	49.96908		53.96	mg/L	108	85	115			
L72215-01AS	AS	10/16/08 15:51	I081013-2	49.96908	33	85.77	mg/L	105.6	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I081013-2	49.96908	33	85.26	mg/L	104.6	85	115	0.6	20	
Manganese, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I080818-1	2		2.0083	mg/L	100.4	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.3	0.3			
WG253741LFB	LFB	10/16/08 15:42	I081013-2	.5		.5474	mg/L	109.5	85	115			
L72215-01AS	AS	10/16/08 15:51	I081013-2	.5	.109	.6677	mg/L	111.7	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I081013-2	.5	.109	.6648	mg/L	111.2	85	115	0.44	20	
Mercury, dissolved					M245.1 CVAA								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253573</b>													
WG253573ICV	ICV	10/20/08 12:08	I080916-2	.005		.00502	mg/L	100.4	95	105			
WG253573ICB	ICB	10/20/08 12:10				U	mg/L		-0.0002	0.0002			
<b>WG253950</b>													
WG253950LRB	LRB	10/20/08 17:39				U	mg/L		-0.00044	0.00044			
WG253950LFB	LFB	10/20/08 17:42	I080924-2	.002		.00186	mg/L	93	85	115			
L72287-02LFM	LFM	10/20/08 18:18	I080924-2	.002	U	.00178	mg/L	89	85	115			
L72287-02LFMD	LFMD	10/20/08 18:20	I080924-2	.002	U	.00188	mg/L	94	85	115	5.46	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72338**Project ID: **OJ06DZ****Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	I1080818-1	2		2.006	mg/L	100.3	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.03	0.03			
WG253994LFB	LFB	10/17/08 16:45	I1081016-2	.5		.505	mg/L	101	85	115			
L72215-01AS	AS	10/17/08 16:55	I1081016-2	.5	.07	.577	mg/L	101.4	85	115			
L72215-01ASD	ASD	10/17/08 16:58	I1081016-2	.5	.07	.571	mg/L	100.2	85	115	1.05	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	2.004		1.996	mg/L	99.6	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	.4985		.527	mg/L	105.7	85	115			
L72215-01AS	AS	10/16/08 15:51	I1081013-2	.4985	U	.547	mg/L	109.7	85	115			
L72215-01ASD	ASD	10/16/08 15:55	I1081013-2	.4985	U	.532	mg/L	106.7	85	115	2.78	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
<b>WG253945</b>													
WG253945ICV	ICV	10/16/08 19:37	W1080916-5	2.416		2.419	mg/L	100.1	90	110			
WG253945ICB	ICB	10/16/08 19:38				U	mg/L		-0.06	0.06			
<b>WG253954</b>													
WG253954ICV	ICV	10/16/08 21:24	W1080916-5	2.416		2.434	mg/L	100.7	90	110			
WG253954ICB	ICB	10/16/08 21:25				U	mg/L		-0.06	0.06			
WG253954LFB	LFB	10/16/08 21:27	W1080913-4	2		2.128	mg/L	106.4	90	110			
L72279-02AS	AS	10/16/08 21:48	W1080913-4	2	1.56	3.668	mg/L	105.4	90	110			
L72336-01DUP	DUP	10/16/08 21:51			1.62	1.619	mg/L				0.1	20	

**pH (lab)**

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254010</b>													
WG254010LCSW3	LCSW	10/17/08 17:52	PCN29627	6		6.07	units	101.2	90	110			
WG254010LCSW6	LCSW	10/17/08 20:24	PCN29627	6		6.08	units	101.3	90	110			
WG254010LCSW9	LCSW	10/17/08 23:17	PCN29627	6		6.08	units	101.3	90	110			
L72361-02DUP	DUP	10/18/08 0:41			8.2	8.16	units				0.5	20	
WG254010LCSW12	LCSW	10/18/08 2:31	PCN29627	6		6.05	units	100.8	90	110			
WG254010LCSW15	LCSW	10/18/08 6:10	PCN29627	6		6.12	units	102	90	110			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	I1080818-1	20		19.71	mg/L	98.6	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.9	0.9			
WG253994LFB	LFB	10/17/08 16:45	I1081016-2	99.76186		99.18	mg/L	99.4	85	115			
L72215-01AS	AS	10/17/08 16:55	I1081016-2	99.76186	3.2	105.71	mg/L	102.8	85	115			
L72215-01ASD	ASD	10/17/08 16:58	I1081016-2	99.76186	3.2	105.71	mg/L	102.8	85	115	0	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72338

Project ID: OJ06DZ

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253627</b>													
WG253627PBW	PBW	10/13/08 11:00				U	mg/L		-20	20			
WG253627LCSW	LCSW	10/13/08 11:01	PCN29987	260		272	mg/L	104.6	80	120			
L72372-04DUP	DUP	10/13/08 11:24			1630	1606	mg/L				1.5	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04969	mg/L	99.4	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.04666	mg/L	93.3	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	.0009	.04487	mg/L	87.9	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	.0009	.04626	mg/L	90.7	70	130	3.05	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	II080818-1	100		99.86	mg/L	99.9	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.9	0.9			
WG253994LFB	LFB	10/17/08 16:45	II081016-2	98.21624		97.6	mg/L	99.4	85	115			
L72215-01AS	AS	10/17/08 16:55	II081016-2	98.21624	24.3	121.41	mg/L	98.9	85	115			
L72215-01ASD	ASD	10/17/08 16:58	II081016-2	98.21624	24.3	120.58	mg/L	98	85	115	0.69	20	

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254501</b>													
WG254501PBW	PBW	10/24/08 12:10				U	mg/L		-30	30			
WG254501LCSW	LCSW	10/24/08 12:13	WC080910-2	100		110	mg/L	110	80	120			
L72544-06DUP	DUP	10/24/08 12:48			410	384	mg/L				6.5	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04944	mg/L	98.9	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.0501		.04648	mg/L	92.8	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.0501	U	.04885	mg/L	97.5	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.0501	U	.0491	mg/L	98	70	130	0.51	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253695</b>													
WG253695ICV	ICV	10/15/08 0:19	MS081003-4	.05		.04747	mg/L	94.9	90	110			
WG253695ICB	ICB	10/15/08 0:24				U	mg/L		-0.0003	0.0003			
WG253695LFB	LFB	10/15/08 0:34	MS081003-7	.05		.0456	mg/L	91.2	85	115			
L72313-02AS	AS	10/15/08 1:57	MS081003-7	.05	.0002	.04967	mg/L	98.9	70	130			
L72313-02ASD	ASD	10/15/08 2:02	MS081003-7	.05	.0002	.05003	mg/L	99.7	70	130	0.72	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72338**

Project ID: OJ06DZ

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2		1.982	mg/L	99.1	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	.5		.546	mg/L	109.2	85	115			
L72215-01AS	AS	10/16/08 15:51	II081013-2	.5	U	.557	mg/L	111.4	85	115			
L72215-01ASD	ASD	10/16/08 15:55	II081013-2	.5	U	.552	mg/L	110.4	85	115	0.9	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72338**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L72338-01	WG253781	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG253976	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72338**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72338  
Date Received: 10/9/2008  
Received By:  
Date Printed: 10/9/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)**

The client was not contacted.

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (μR/hr)
2144	1.2	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**  
OJ06DZ

ACZ Project ID: L72338  
Date Received: 10/9/2008  
Received By:

**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
L72338-01	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: \_\_\_\_\_



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

## Report to:

Name: Billy Dorris  
Company: Freeport McMoran Sierrita  
E-mail: billy-dorris@fmr.com

Address: 6200 W. Duval mine Rd  
Green Valley, AZ 85614  
Telephone: 520 648 8873

**Copy of Report to:**

Name: Rick Smith  
Company: URS

E-mail: Rick\_Smith@URSCorp.com  
Telephone: 520-407-2823

**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.**

## PROJECT INFORMATION

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

Quote #:

Project/PO #: 0506DZ

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

# of Containers	AMBIENT-TB	Uranium Metal-Dissolved
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
20	1	1
21	1	1
22	1	1
23	1	1
24	1	1
25	1	1
26	1	1
27	1	1
28	1	1
29	1	1
30	1	1
31	1	1
32	1	1
33	1	1
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41	1	1
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74	1	1
75	1	1
76	1	1
77	1	1
78	1	1
79	1	1
80	1	1
81	1	1
82	1	1
83	1	1
84	1	1
85	1	1
86	1	1
87	1	1
88	1	1
89	1	1
90	1	1
91	1	1
92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
-----------------------	-----------	--------

[illegible]

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

## REMARKS/ SAMPLE DISCLOSURES

- Copy of Report to Rick Smith contains the "VRP-SUITE" results with QC Summary.
- Please generate a ~~second~~ third report that contains only "504" results with QC Summary and send to Dan Simpson of H&C. [danse@hginc.com](mailto:danse@hginc.com)

PAGE  
of

UPS TRACKING # 1Z 867 7E4 23 1000 6073

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Billy F. Davis

10-8-08/15:00

WR

14-9-08 9:34

Bill Dorris  
FMI Gold & Copper - Sierrita  
P.O. Box 527  
6200 W. Duval Mine Road  
Green Valley, AZ 85622-0527

November 20, 2008

Project ID: OJ0325  
ACZ Project ID: L72393

Bill Dorris:

Enclosed are revised analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 10, 2008 and reported on October 23, 2008. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L72393. Please reference this number in all future inquiries.

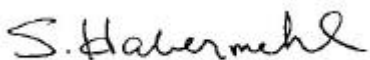
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72393. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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.

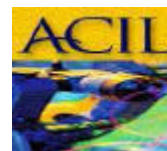
This report should be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 23, 2008. 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

November 20, 2008

Project ID: OJ0325

ACZ Project ID: L72393

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from FMI Gold & Copper - Sierrita on October 10, 2008. 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 L72393. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

**Holding Times**

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

**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. This project has been revised to include an analysis for Sulfate from the unfiltered sample (total). This analysis was done via the turbidimetric method EPA 375.4.

**FMI Gold & Copper - Sierrita**

Project ID: OJ0325

Sample ID: CC OF GV

ACZ Sample ID: **L72393-01**

Date Sampled: 10/09/08 08:25

Date Received: 10/10/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	68	H	*	mg/L	5	30	11/19/08 13:54	lbn
Sulfate	300.0 - Ion Chromatography	72.4			mg/L	0.5	3	10/22/08 3:18	aml

Arizona license number: AZ0102

**FMI Gold & Copper - Sierrita**

Project ID: OJ0325

Sample ID: TMM-1

ACZ Sample ID: **L72393-02**

Date Sampled: 10/09/08 13:00

Date Received: 10/10/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric		UH	*	mg/L	1	5	11/19/08 13:48	lbn
Sulfate	300.0 - Ion Chromatography		U		mg/L	0.5	3	10/22/08 3:36	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ0325

Sample ID: GV-01-GVDWID

ACZ Sample ID: **L72393-03**

Date Sampled: 10/09/08 13:50

Date Received: 10/10/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	36	H	*	mg/L	1	5	11/19/08 13:48	lbn
Sulfate	300.0 - Ion Chromatography	39.0			mg/L	0.5	3	10/22/08 4:30	aml

Arizona license number: AZ0102

**FMI Gold & Copper - Sierrita**

Project ID: OJ0325

Sample ID: GV-02-GVDWID

ACZ Sample ID: **L72393-04**

Date Sampled: 10/09/08 14:05

Date Received: 10/10/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	90	H	*	mg/L	5	30	11/19/08 13:54	lbn
Sulfate	300.0 - Ion Chromatography	93.5			mg/L	0.5	3	10/22/08 4:48	aml

Arizona license number: AZ0102

**FMI Gold & Copper - Sierrita**

Project ID: OJ0325

Sample ID: GV-SI-GVDWID

ACZ Sample ID: **L72393-05**

Date Sampled: 10/09/08 14:30

Date Received: 10/10/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	375.4 - Turbidimetric	6	H	*	mg/L	1	5	11/19/08 13:48	lbn
Sulfate	300.0 - Ion Chromatography	5.4			mg/L	0.5	3	10/22/08 5:07	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.
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.

**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.

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72393**

Project ID: OJ0325

**Sulfate** 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254269</b>													
WG254269ICV	ICV	10/14/08 13:25	WI081007-1	50		50.62	mg/L	101.2	90	110			
WG254269ICB	ICB	10/14/08 13:43				U	mg/L		-1.5	1.5			
WG254269ICV1	ICV	10/22/08 0:17	WI081007-1	50		52.21	mg/L	104.4	90	110			
WG254269ICB1	ICB	10/22/08 0:35				U	mg/L		-1.5	1.5			
WG254269LFB	LFB	10/22/08 0:53	WI081007-3	30		32.16	mg/L	107.2	90	110			
WG254269ICV2	ICV	10/22/08 20:32	WI081007-1	50		51.58	mg/L	103.2	90	110			
WG254269ICB2	ICB	10/22/08 20:50				U	mg/L		-1.5	1.5			
L72096-07DUP	DUP	10/22/08 21:26			41	41.6	mg/L				1.5	20	
L72247-01AS	AS	10/22/08 22:02	WI081007-3	600	710	1270	mg/L	93.3	90	110			

**Sulfate** 375.4 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255985</b>													
WG255985ICB	ICB	11/19/08 10:21				U	mg/L		-3	3			
WG255985ICV	ICV	11/19/08 10:21	WI081111-1	20		20.3	mg/L	101.5	90	110			
WG255985LFB1	LFB	11/19/08 12:01	WI081015-3	10		9.2	mg/L	92	90	110			
WG255985LFB2	LFB	11/19/08 12:06	WI081015-3	10		10.3	mg/L	103	90	110			
L72393-02AS	AS	11/19/08 13:48	WI081015-3	10	U	8.9	mg/L	89	90	110			M2
L72393-01DUP	DUP	11/19/08 13:54			68	68.2	mg/L				0.3	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72393**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72393-01</b>	WG255985	Sulfate	375.4 - Turbidimetric	C4	Confirmatory analysis was past holding time.
			375.4 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			375.4 - Turbidimetric	N1	See Case Narrative.
<b>L72393-02</b>	WG255985	Sulfate	375.4 - Turbidimetric	C4	Confirmatory analysis was past holding time.
			375.4 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			375.4 - Turbidimetric	N1	See Case Narrative.
<b>L72393-03</b>	WG255985	Sulfate	375.4 - Turbidimetric	C4	Confirmatory analysis was past holding time.
			375.4 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			375.4 - Turbidimetric	N1	See Case Narrative.
<b>L72393-04</b>	WG255985	Sulfate	375.4 - Turbidimetric	C4	Confirmatory analysis was past holding time.
			375.4 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			375.4 - Turbidimetric	N1	See Case Narrative.
<b>L72393-05</b>	WG255985	Sulfate	375.4 - Turbidimetric	C4	Confirmatory analysis was past holding time.
			375.4 - Turbidimetric	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			375.4 - Turbidimetric	N1	See Case Narrative.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72393**

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**  
OJ0325

ACZ Project ID: L72393  
Date Received: 10/10/2008  
Received By: gac  
Date Printed: 10/28/2008

**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)
NA7131	0.9	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**  
OJ0325

ACZ Project ID: L72393  
Date Received: 10/10/2008  
Received By:

**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
L72393-01	CC OF GV									X		<input type="checkbox"/>
L72393-02	TMM-1									X		<input type="checkbox"/>
L72393-03	GV-01-GVDWID									X		<input type="checkbox"/>
L72393-04	GV-02-GVDWID									X		<input type="checkbox"/>
L72393-05	GV-SI-GVDWID									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



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

October 24, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72383- SULFATE ONLY

Bill Dorris:

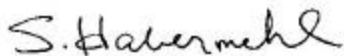
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 10, 2008. This project was assigned to ACZ's project number, L72383. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72383. 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: OJ06DZ

Sample ID: PZ-8

ACZ Sample ID: **L72383-01**

Date Sampled: 10/08/08 11:00

Date Received: 10/10/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	460			mg/L	10	50	10/15/08 10:28	gkj

**Arizona license number: AZ0102**

## Report Header Explanations

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

## QC Sample Types

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

## QC Sample Type Explanations

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

## ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
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.

## 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.

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72383**Project ID: **OJ06DZ****Alkalinity as CaCO<sub>3</sub>**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254213</b>													
WG254213PBW1	PBW	10/21/08 11:28				U	mg/L		-20	20			
WG254213LCSW1	LCSW	10/21/08 11:38	WC081008-2	820.0001		743.2	mg/L	90.6	90	110			
L72049-01DUP	DUP	10/21/08 11:48			70	71.3	mg/L				1.8	20	
WG254213PBW2	PBW	10/21/08 16:42				U	mg/L		-20	20			
WG254213LCSW2	LCSW	10/21/08 16:53	WC081008-2	820.0001		764.3	mg/L	93.2	90	110			
WG254213LCSW3	LCSW	10/21/08 19:33	WC081008-2	820.0001		783.3	mg/L	95.5	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	II080818-1	2		1.973	mg/L	98.7	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.09	0.09			
WG253994LFB	LFB	10/17/08 16:45	II081016-2	1		.992	mg/L	99.2	85	115			
L72365-06AS	AS	10/17/08 17:31	II081016-2	1	U	1.042	mg/L	104.2	85	115			
L72365-06ASD	ASD	10/17/08 17:35	II081016-2	1	U	.979	mg/L	97.9	85	115	6.23	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.02		.02061	mg/L	103.1	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0012	0.0012			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.01		.00985	mg/L	98.5	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.01	.0006	.0102	mg/L	96	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.01	.0006	.01049	mg/L	98.9	70	130	2.8	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.05029	mg/L	100.6	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0015	0.0015			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.05		.04813	mg/L	96.3	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.05	U	.05061	mg/L	101.2	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.05	U	.05102	mg/L	102	70	130	0.81	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2		1.9918	mg/L	99.6	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.18	0.18			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	.5		.4979	mg/L	99.6	85	115			
L72365-06AS	AS	10/16/08 16:33	II081013-2	.5	U	.506	mg/L	101.2	85	115			
L72365-06ASD	ASD	10/16/08 16:37	II081013-2	.5	U	.5077	mg/L	101.5	85	115	0.34	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72383

Project ID: OJ06DZ

### Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.04846	mg/L	96.9	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0003	0.0003			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.05005		.04695	mg/L	93.8	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.05005	U	.04679	mg/L	93.5	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.05005	U	.04691	mg/L	93.7	70	130	0.26	20	

### Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.04939	mg/L	98.8	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0003	0.0003			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.05		.04832	mg/L	96.6	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.05	U	.04777	mg/L	95.5	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.05	U	.04824	mg/L	96.5	70	130	0.98	20	

### Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	100		99.51	mg/L	99.5	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-12	12			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	67.97008		74.12	mg/L	109	85	115			
L72365-06AS	AS	10/16/08 16:33	I1081013-2	67.97008	40.6	109.42	mg/L	101.3	85	115			
L72365-06ASD	ASD	10/16/08 16:37	I1081013-2	67.97008	40.6	110.63	mg/L	103	85	115	1.1	20	

### Chloride

SM4500CL-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253824</b>													
WG253824ICB	ICB	10/15/08 10:27				U	mg/L		-3	3			
WG253824ICV	ICV	10/15/08 10:27	WI080808-1	54.945		56.5	mg/L	102.8	90	110			
WG253824LFB1	LFB	10/15/08 14:10	WI080818-2	30		32.4	mg/L	108	90	110			
L72375-02AS	AS	10/15/08 14:12	WI080818-2	30	52	84.6	mg/L	108.7	90	110			
L72375-03DUP	DUP	10/15/08 14:13			70	73	mg/L				4.2	20	RA
WG253824LFB2	LFB	10/15/08 14:14	WI080818-2	30		32.8	mg/L	109.3	90	110			

### Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	2		2.01	mg/L	100.5	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	.5		.518	mg/L	103.6	85	115			
L72365-06AS	AS	10/16/08 16:33	I1081013-2	.5	U	.523	mg/L	104.6	85	115			
L72365-06ASD	ASD	10/16/08 16:37	I1081013-2	.5	U	.531	mg/L	106.2	85	115	1.52	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72383**Project ID: **OJ06DZ****Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	2.002		2.025	mg/L	101.1	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	.5		.521	mg/L	104.2	85	115			
L72365-06AS	AS	10/16/08 16:33	I1081013-2	.5	.02	.543	mg/L	104.6	85	115			
L72365-06ASD	ASD	10/16/08 16:37	I1081013-2	.5	.02	.551	mg/L	106.2	85	115	1.46	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254059</b>													
WG254059LCSW1	LCSW	10/18/08 13:52	PCN30288	1408.8		1410	µmhos/cm	100.1	90	110			
WG254059LCSW4	LCSW	10/18/08 15:20	PCN30288	1408.8		1404	µmhos/cm	99.7	90	110			
L72384-03DUP	DUP	10/18/08 17:55			2260	2280	µmhos/cm				0.9	20	
WG254059LCSW7	LCSW	10/18/08 18:02	PCN30288	1408.8		1388	µmhos/cm	98.5	90	110			
WG254059LCSW10	LCSW	10/18/08 21:12	PCN30288	1408.8		1374	µmhos/cm	97.5	90	110			
WG254059LCSW13	LCSW	10/19/08 0:25	PCN30288	1408.8		1363	µmhos/cm	96.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	I1080818-1	2		1.947	mg/L	97.4	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	I1081013-2	.5		.501	mg/L	100.2	85	115			
L72365-06AS	AS	10/16/08 16:33	I1081013-2	.5	U	.516	mg/L	103.2	85	115			
L72365-06ASD	ASD	10/16/08 16:37	I1081013-2	.5	U	.51	mg/L	102	85	115	1.17	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254069</b>													
WG254069ICV	ICV	10/18/08 21:53	WI081010-5	.3		.283	mg/L	94.3	90	110			
WG254069ICB	ICB	10/18/08 21:54				U	mg/L		-0.015	0.015			
WG253871LRB	LRB	10/18/08 21:56				U	mg/L		-0.015	0.015			
WG253871LFB	LFB	10/18/08 21:56	WI081010-9	.2		.1982	mg/L	99.1	90	110			
L72339-04DUP	DUP	10/18/08 22:10			U	U	mg/L				0	20	RA
L72366-02LFM	LFM	10/18/08 22:12	WI081010-9	.2	U	.1878	mg/L	93.9	90	110			

**Fluoride**

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254074</b>													
WG254074ICV	ICV	10/19/08 10:55	WC081014-1	2		2.04	mg/L	102	90	110			
WG254074ICB	ICB	10/19/08 11:02				U	mg/L		-0.3	0.3			
WG254074LFB1	LFB	10/19/08 11:07	WC080912-3	5		5.4	mg/L	108	90	110			
L72371-03DUP	DUP	10/19/08 12:23			.5	.47	mg/L				6.2	20	RA
L72371-04AS	AS	10/19/08 12:28	WC080912-3	5	.3	5.84	mg/L	110.8	90	110			M1
WG254074LFB2	LFB	10/19/08 13:04	WC080912-3	5		4.93	mg/L	98.6	90	110			

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72383**Project ID: **OJ06DZ**

Iron, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2		1.951	mg/L	97.6	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-1.2	1.2			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	1		1.041	mg/L	104.1	85	115			
L72365-06AS	AS	10/16/08 16:33	II081013-2	1	.09	1.144	mg/L	105.4	85	115			
L72365-06ASD	ASD	10/16/08 16:37	II081013-2	1	.09	1.157	mg/L	106.7	85	115	1.13	20	
Lead, dissolved					M200.8 ICP-MS								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.04748	mg/L	95	90	110			
WG253702ICB	ICB	10/15/08 3:55				.0001	mg/L		-0.0003	0.0003			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.05		.04484	mg/L	89.7	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.05	U	.04474	mg/L	89.5	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.05	U	.04444	mg/L	88.9	70	130	0.67	20	
Magnesium, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	100		100.01	mg/L	100	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-12	12			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	49.96908		53.96	mg/L	108	85	115			
L72365-06AS	AS	10/16/08 16:33	II081013-2	49.96908	8.9	61.15	mg/L	104.6	85	115			
L72365-06ASD	ASD	10/16/08 16:37	II081013-2	49.96908	8.9	61.95	mg/L	106.2	85	115	1.3	20	
Manganese, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2		2.0083	mg/L	100.4	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.3	0.3			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	.5		.5474	mg/L	109.5	85	115			
L72365-06AS	AS	10/16/08 16:33	II081013-2	.5	U	.5653	mg/L	113.1	85	115			
L72365-06ASD	ASD	10/16/08 16:37	II081013-2	.5	U	.5709	mg/L	114.2	85	115	0.99	20	
Mercury, dissolved					M245.1 CVAA								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254291</b>													
WG254291ICV	ICV	10/22/08 17:29	II081015-2	.005		.00521	mg/L	104.2	95	105			
WG254291ICB	ICB	10/22/08 17:31				U	mg/L		-0.0002	0.0002			
WG254291LRB	LRB	10/22/08 17:36				U	mg/L		-0.00044	0.00044			
WG254291LFB	LFB	10/22/08 17:38	II080924-2	.002		.00196	mg/L	98	85	115			
L72247-01LFM	LFM	10/22/08 17:47	II080924-2	.002	U	.00198	mg/L	99	85	115			
L72247-01LFMD	LFMD	10/22/08 17:49	II080924-2	.002	U	.00197	mg/L	98.5	85	115	0.51	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72383

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	II080818-1	2		2.006	mg/L	100.3	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.03	0.03			
WG253994LFB	LFB	10/17/08 16:45	II081016-2	.5		.505	mg/L	101	85	115			
L72365-06AS	AS	10/17/08 17:31	II081016-2	.5	U	.525	mg/L	105	85	115			
L72365-06ASD	ASD	10/17/08 17:35	II081016-2	.5	U	.508	mg/L	101.6	85	115	3.29	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2.004		1.996	mg/L	99.6	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	.4985		.527	mg/L	105.7	85	115			
L72365-06AS	AS	10/16/08 16:33	II081013-2	.4985	U	.529	mg/L	106.1	85	115			
L72365-06ASD	ASD	10/16/08 16:37	II081013-2	.4985	U	.536	mg/L	107.5	85	115	1.31	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
<b>WG254040</b>													
WG254040ICV	ICV	10/17/08 18:31	WI080916-5	2.416		2.428	mg/L	100.5	90	110			
WG254040ICB	ICB	10/17/08 18:32				U	mg/L		-0.06	0.06			
<b>WG254044</b>													
WG254044ICV	ICV	10/17/08 19:57	WI080916-5	2.416		2.53	mg/L	104.7	90	110			
WG254044ICB	ICB	10/17/08 19:58				U	mg/L		-0.06	0.06			
WG254044LFB1	LFB	10/17/08 20:00	WI080913-4	2		2.092	mg/L	104.6	90	110			
L72215-01AS	AS	10/17/08 20:02	WI080913-4	2	.37	2.576	mg/L	110.3	90	110			
L72277-01DUP	DUP	10/17/08 20:05			.33	.323	mg/L				2.1	20	
WG254044LFB2	LFB	10/17/08 20:39	WI080913-4	2		2.087	mg/L	104.4	90	110			

**pH (lab)**

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254059</b>													
WG254059LCSW3	LCSW	10/18/08 14:04	PCN29627	6		6.27	units	104.5	90	110			
WG254059LCSW6	LCSW	10/18/08 15:34	PCN29627	6		6.22	units	103.7	90	110			
L72384-03DUP	DUP	10/18/08 17:55			8.1	8.55	units				5.4	20	
WG254059LCSW9	LCSW	10/18/08 18:15	PCN29627	6		6.26	units	104.3	90	110			
WG254059LCSW12	LCSW	10/18/08 21:24	PCN29627	6		6.26	units	104.3	90	110			
WG254059LCSW15	LCSW	10/19/08 0:38	PCN29627	6		6.24	units	104	90	110			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	II080818-1	20		19.71	mg/L	98.6	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.9	0.9			
WG253994LFB	LFB	10/17/08 16:45	II081016-2	99.76186		99.18	mg/L	99.4	85	115			
L72365-06AS	AS	10/17/08 17:31	II081016-2	99.76186	1.4	106.43	mg/L	105.3	85	115			
L72365-06ASD	ASD	10/17/08 17:35	II081016-2	99.76186	1.4	103.15	mg/L	102	85	115	3.13	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72383

Project ID: OJ06DZ

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253733</b>													
WG253733PBW	PBW	10/14/08 15:20				U	mg/L		-20	20			
WG253733LCSW	LCSW	10/14/08 15:20	PCN29988	260		260	mg/L	100	80	120			
L72422-03DUP	DUP	10/14/08 15:39			50	50	mg/L				0	20	RA

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.04971	mg/L	99.4	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0003	0.0003			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.05		.04746	mg/L	94.9	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.05	.0011	.05097	mg/L	99.7	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.05	.0011	.05114	mg/L	100.1	70	130	0.33	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253994</b>													
WG253994ICV	ICV	10/17/08 16:28	II080818-1	100		99.86	mg/L	99.9	95	105			
WG253994ICB	ICB	10/17/08 16:32				U	mg/L		-0.9	0.9			
WG253994LFB	LFB	10/17/08 16:45	II081016-2	98.21624		97.6	mg/L	99.4	85	115			
L72365-06AS	AS	10/17/08 17:31	II081016-2	98.21624	8.6	110.32	mg/L	103.6	85	115			
L72365-06ASD	ASD	10/17/08 17:35	II081016-2	98.21624	8.6	106.81	mg/L	100	85	115	3.23	20	

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253772</b>													
WG253772PBW	PBW	10/15/08 8:50				U	mg/L		-30	30			
WG253772LCSW	LCSW	10/15/08 8:55	WC080910-2	100		105	mg/L	105	80	120			
L72384-03DUP	DUP	10/15/08 10:48			1170	1163	mg/L				0.6	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.04892	mg/L	97.8	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0003	0.0003			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.0501		.04614	mg/L	92.1	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.0501	U	.0463	mg/L	92.4	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.0501	U	.04637	mg/L	92.6	70	130	0.15	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253702</b>													
WG253702ICV	ICV	10/15/08 3:50	MS081003-4	.05		.04652	mg/L	93	90	110			
WG253702ICB	ICB	10/15/08 3:55				U	mg/L		-0.0003	0.0003			
WG253702LFB	LFB	10/15/08 4:05	MS081003-7	.05		.04509	mg/L	90.2	85	115			
L72365-04AS	AS	10/15/08 5:29	MS081003-7	.05	.0047	.05181	mg/L	94.2	70	130			
L72365-04ASD	ASD	10/15/08 5:34	MS081003-7	.05	.0047	.0516	mg/L	93.8	70	130	0.41	20	



**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72383**

Project ID: OJ06DZ

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG253741</b>													
WG253741ICV	ICV	10/16/08 15:26	II080818-1	2		1.982	mg/L	99.1	95	105			
WG253741ICB	ICB	10/16/08 15:30				U	mg/L		-0.6	0.6			
WG253741LFB	LFB	10/16/08 15:42	II081013-2	.5		.546	mg/L	109.2	85	115			
L72365-06AS	AS	10/16/08 16:33	II081013-2	.5	U	.532	mg/L	106.4	85	115			
L72365-06ASD	ASD	10/16/08 16:37	II081013-2	.5	U	.542	mg/L	108.4	85	115	1.86	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72383**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72383-01</b>	WG253824	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254069	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254074	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG253733	Residue, Filterable (TDS) @180C	SM2540C	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: **L72383**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72383  
Date Received: 10/10/2008  
Received By:  
Date Printed: 10/10/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
2040	4.8	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**  
OJ06DZ

ACZ Project ID: L72383  
Date Received: 10/10/2008  
Received By:

**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
L72383-01	PZ-8		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: \_\_\_\_\_



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

November 04, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72507- SULFATE ONLY

Bill Dorris:

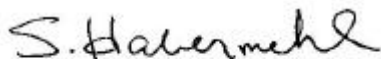
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 16, 2008. This project was assigned to ACZ's project number, L72507. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72507. 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: OJ06DZ

Sample ID: PZ-7

ACZ Sample ID: **L72507-01**

Date Sampled: 10/14/08 12:00

Date Received: 10/16/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	420			mg/L	10	50	10/22/08 12:58	kah

**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.

**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.

FMI Gold & Copper - Sierrita

ACZ Project ID: **L72507**

Project ID: OJ06DZ

### Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254301</b>													
WG254301PBW1	PBW	10/22/08 9:37				U	mg/L		-20	20			
WG254301LCSW2	LCSW	10/22/08 9:49	WC081008-2	820.0001		793.1	mg/L	96.7	90	110			
WG254301PBW2	PBW	10/22/08 13:09				U	mg/L		-20	20			
WG254301LCSW5	LCSW	10/22/08 13:21	WC081008-2	820.0001		773.2	mg/L	94.3	90	110			
L72509-01DUP	DUP	10/22/08 14:34			175	176.8	mg/L				1	20	
WG254301LCSW8	LCSW	10/22/08 16:08	WC081008-2	820.0001		763.9	mg/L	93.2	90	110			

### Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	2		1.999	mg/L	100	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.09	0.09			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	1		1.031	mg/L	103.1	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	1	U	1.029	mg/L	102.9	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	1	U	1.022	mg/L	102.2	85	115	0.68	20	

### Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.02		.02067	mg/L	103.4	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0012	0.0012			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.01		.00995	mg/L	99.5	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.02	U	.01811	mg/L	90.6	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.02	U	.01919	mg/L	96	70	130	5.79	20	

### Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.05202	mg/L	104	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0015	0.0015			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.05		.05095	mg/L	101.9	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1	.006	.1026	mg/L	96.6	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1	.006	.1046	mg/L	98.6	70	130	1.93	20	

### Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	2		2.0102	mg/L	100.5	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.009	0.009			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	.5		.4967	mg/L	99.3	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	.5	.16	.6387	mg/L	95.7	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	.5	.16	.6448	mg/L	97	85	115	0.95	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72507

Project ID: OJ06DZ

### Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.04779	mg/L	95.6	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0003	0.0003			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.05005		.04809	mg/L	96.1	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1001	U	.09398	mg/L	93.9	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1001	U	.09282	mg/L	92.7	70	130	1.24	20	

### Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.04964	mg/L	99.3	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0003	0.0003			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.05		.04894	mg/L	97.9	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1	.0003	.09168	mg/L	91.4	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1	.0003	.0932	mg/L	92.9	70	130	1.64	20	

### Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	100		96.04	mg/L	96	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.6	0.6			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	67.97008		68.17	mg/L	100.3	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	67.97008	5.2	73.44	mg/L	100.4	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	67.97008	5.2	72.97	mg/L	99.7	85	115	0.64	20	

### Chloride

SM4500CL-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254206</b>													
WG254206ICB1	ICB	10/21/08 8:09				U	mg/L		-3	3			
WG254206ICB	ICB	10/21/08 8:09				U	mg/L		-3	3			
WG254206ICV1	ICV	10/21/08 8:09	WI080808-1	54.945		57	mg/L	103.7	90	110			
WG254206ICV	ICV	10/21/08 8:09	WI080808-1	54.945		57	mg/L	103.7	90	110			
L72506-01AS	AS	10/21/08 13:54	10XCL	30	450	465	mg/L	50	90	110			M2
L72506-02DUP	DUP	10/21/08 13:55			910	906	mg/L				0.4	20	
WG254206LFB1	LFB	10/21/08 14:39	WI080818-2	30		31.2	mg/L	104	90	110			
WG254206LFB2	LFB	10/21/08 14:39	WI080818-2	30		31.1	mg/L	103.7	90	110			

### Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	2		1.933	mg/L	96.7	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.03	0.03			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	.5		.491	mg/L	98.2	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	.5	U	.488	mg/L	97.6	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	.5	U	.485	mg/L	97	85	115	0.62	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72507**

Project ID: **OJ06DZ**
**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	I1080818-1	2.002		1.957	mg/L	97.8	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.03	0.03			
WG254232LFB	LFB	10/22/08 0:04	I1081016-2	.5		.493	mg/L	98.6	85	115			
L72370-01AS	AS	10/22/08 0:10	I1081016-2	.5	U	.488	mg/L	97.6	85	115			
L72370-01ASD	ASD	10/22/08 0:14	I1081016-2	.5	U	.489	mg/L	97.8	85	115	0.2	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254172</b>													
WG254172LCSW1	LCSW	10/20/08 18:02	PCN30288	1408.8		1439	µmhos/cm	102.1	90	110			
WG254172LCSW4	LCSW	10/20/08 20:59	PCN30288	1408.8		1414	µmhos/cm	100.4	90	110			
WG254172LCSW7	LCSW	10/20/08 23:47	PCN30288	1408.8		1412	µmhos/cm	100.2	90	110			
WG254172LCSW10	LCSW	10/21/08 3:02	PCN30288	1408.8		1407	µmhos/cm	99.9	90	110			
L72509-01DUP	DUP	10/21/08 6:10			694	695	µmhos/cm				0.1	20	
WG254172LCSW13	LCSW	10/21/08 6:11	PCN30288	1408.8		1402	µmhos/cm	99.5	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254321</b>													
WG254321ICV	ICV	10/23/08 11:38	I1080818-1	2		1.949	mg/L	97.5	95	105			
WG254321ICB	ICB	10/23/08 11:42				U	mg/L		-0.03	0.03			
WG254321LFB	LFB	10/23/08 11:54	I1081016-2	.5		.48	mg/L	96	85	115			
L72370-01AS	AS	10/23/08 12:01	I1081016-2	.5	U	.467	mg/L	93.4	85	115			
L72370-01ASD	ASD	10/23/08 12:04	I1081016-2	.5	U	.467	mg/L	93.4	85	115	0	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254439</b>													
WG254439ICV	ICV	10/23/08 17:15	WI081010-5	.3		.2752	mg/L	91.7	90	110			
WG254439ICB	ICB	10/23/08 17:16				U	mg/L		-0.015	0.015			
<b>WG254455</b>													
WG254455ICV	ICV	10/23/08 18:29	WI081010-5	.3		.292	mg/L	97.3	90	110			
WG254455ICB	ICB	10/23/08 18:30				U	mg/L		-0.015	0.015			
WG254348LRB	LRB	10/23/08 18:31				U	mg/L		-0.015	0.015			
WG254348LFB	LFB	10/23/08 18:32	WI081010-9	.2		.2055	mg/L	102.8	90	110			
L72496-01DUP	DUP	10/23/08 18:34			U	U	mg/L				0	20	RA
L72506-01LFM	LFM	10/23/08 18:35	WI081010-9	.2	U	.2028	mg/L	101.4	90	110			
L72593-02DUP	DUP	10/23/08 18:45			U	U	mg/L				0	20	RA
L72593-03LFM	LFM	10/23/08 18:47	WI081010-9	.2	U	.2075	mg/L	103.8	90	110			

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72507

**Fluoride** SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254646</b>													
WG254646ICV	ICV	10/29/08 10:37	WC081028-1	2		2.1	mg/L	105	95	105			
WG254646ICB	ICB	10/29/08 10:44				U	mg/L		-0.3	0.3			
WG254646LFB1	LFB	10/29/08 10:49	WC080912-3	5		5.07	mg/L	101.4	90	110			
L67329-21DUP	DUP	10/29/08 11:02			U	U	mg/L				0	20	RA
L72507-01AS	AS	10/29/08 11:35	WC080912-3	5	.3	3.46	mg/L	63.2	90	110			M2
WG254646LFB2	LFB	10/29/08 15:28	WC080912-3	5		4.98	mg/L	99.6	90	110			

**Iron, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	2		1.945	mg/L	97.3	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.06	0.06			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	1		1.011	mg/L	101.1	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	1	.04	1.037	mg/L	99.7	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	1	.04	1.035	mg/L	99.5	85	115	0.19	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.04721	mg/L	94.4	90	110			
WG254207ICB	ICB	10/21/08 23:27				.00018	mg/L		-0.0003	0.0003			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.05		.04528	mg/L	90.6	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1	U	.07986	mg/L	79.9	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1	U	.0808	mg/L	80.8	70	130	1.17	20	

**Magnesium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	100		98.77	mg/L	98.8	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.6	0.6			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	49.96908		50.7	mg/L	101.5	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	49.96908	6.8	56.8	mg/L	100.1	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	49.96908	6.8	56.99	mg/L	100.4	85	115	0.33	20	

**Manganese, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	2		1.9359	mg/L	96.8	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.015	0.015			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	.5		.5212	mg/L	104.2	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	.5	U	.5208	mg/L	104.2	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	.5	U	.5217	mg/L	104.3	85	115	0.17	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72507**

Project ID: **OJ06DZ**
**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254766</b>													
WG254766ICV	ICV	10/30/08 11:56	II081015-2	.005		.00499	mg/L	99.8	95	105			
WG254766ICB	ICB	10/30/08 11:58				U	mg/L		-0.0002	0.0002			
WG254766LRB	LRB	10/30/08 12:13				U	mg/L		-0.00044	0.00044			
WG254766LFB	LFB	10/30/08 12:15	II081027-2	.002		.0021	mg/L	105	85	115			
L72498-06LFM	LFM	10/30/08 13:03	II081027-2	.002	U	.00204	mg/L	102	85	115			
L72498-06LFMD	LFMD	10/30/08 13:05	II081027-2	.002	U	.00203	mg/L	101.5	85	115	0.49	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	II080818-1	2		1.945	mg/L	97.3	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.03	0.03			
WG254232LFB	LFB	10/22/08 0:04	II081016-2	.5		.518	mg/L	103.6	85	115			
L72370-01AS	AS	10/22/08 0:10	II081016-2	.5	.13	.628	mg/L	99.6	85	115			
L72370-01ASD	ASD	10/22/08 0:14	II081016-2	.5	.13	.628	mg/L	99.6	85	115	0	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254321</b>													
WG254321ICV	ICV	10/23/08 11:38	II080818-1	2.004		1.961	mg/L	97.9	95	105			
WG254321ICB	ICB	10/23/08 11:42				U	mg/L		-0.03	0.03			
WG254321LFB	LFB	10/23/08 11:54	II081016-2	.4985		.497	mg/L	99.7	85	115			
L72370-01AS	AS	10/23/08 12:01	II081016-2	.4985	U	.497	mg/L	99.7	85	115			
L72370-01ASD	ASD	10/23/08 12:04	II081016-2	.4985	U	.501	mg/L	100.5	85	115	0.8	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
<b>WG254453</b>													
WG254453ICV	ICV	10/23/08 18:14	WI080916-5	2.416		2.458	mg/L	101.7	90	110			
WG254453ICB	ICB	10/23/08 18:15				U	mg/L		-0.06	0.06			
<b>WG254457</b>													
WG254457ICV	ICV	10/23/08 19:45	WI080916-5	2.416		2.227	mg/L	92.2	90	110			
WG254457ICB	ICB	10/23/08 19:46				U	mg/L		-0.06	0.06			
WG254457LFB1	LFB	10/23/08 19:48	WI080913-4	2		1.868	mg/L	93.4	90	110			
L72370-01AS	AS	10/23/08 19:50	WI080913-4	2	U	1.934	mg/L	96.7	90	110			
L72370-02DUP	DUP	10/23/08 19:53			U	U	mg/L				0	20	RA
WG254457LFB2	LFB	10/23/08 20:27	WI080913-4	2		1.881	mg/L	94.1	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: L72507

Project ID: OJ06DZ

**pH (lab)** M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254172</b>													
WG254172LCSW3	LCSW	10/20/08 18:16	PCN29627	6		6.12	units	102	90	110			
WG254172LCSW6	LCSW	10/20/08 21:10	PCN29627	6		6.11	units	101.8	90	110			
WG254172LCSW9	LCSW	10/21/08 0:01	PCN29627	6		6.09	units	101.5	90	110			
WG254172LCSW12	LCSW	10/21/08 3:16	PCN29627	6		6.05	units	100.8	90	110			
L72509-01DUP	DUP	10/21/08 6:10			8.4	8.4	units				0	20	
WG254172LCSW15	LCSW	10/21/08 6:23	PCN29627	6		6.06	units	101	90	110			

**Potassium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	I1080818-1	20		20.09	mg/L	100.5	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.9	0.9			
WG254232LFB	LFB	10/22/08 0:04	I1081016-2	99.76186		102.12	mg/L	102.4	85	115			
L72370-01AS	AS	10/22/08 0:10	I1081016-2	99.76186	5	107.53	mg/L	102.8	85	115			
L72370-01ASD	ASD	10/22/08 0:14	I1081016-2	99.76186	5	108.52	mg/L	103.8	85	115	0.92	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254346</b>													
WG254346PBW	PBW	10/22/08 14:40				U	mg/L		-20	20			
WG254346LCSW	LCSW	10/22/08 14:40	PCN29989	260		242	mg/L	93.1	80	120			
L72509-03DUP	DUP	10/22/08 14:59			260	258	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
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.04925	mg/L	98.5	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0003	0.0003			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.05		.04733	mg/L	94.7	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1	.0002	.095	mg/L	94.8	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1	.0002	.09542	mg/L	95.2	70	130	0.44	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254232</b>													
WG254232ICV	ICV	10/21/08 23:47	I1080818-1	100		100.3	mg/L	100.3	95	105			
WG254232ICV	ICV	10/21/08 23:47	I1080818-1	100		101.15	mg/L	101.2	95	105			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-0.9	0.9			
WG254232ICB	ICB	10/21/08 23:50				U	mg/L		-6	6			
WG254232LFB	LFB	10/22/08 0:04	I1081016-2	98.21624		101.4	mg/L	103.2	85	115			
WG254232LFB	LFB	10/22/08 0:04	I1081016-2	98.21624		101.45	mg/L	103.3	85	115			
L72370-01AS	AS	10/22/08 0:10	I1081016-2	98.21624	319	398.72	mg/L	81.2	85	115			MA
L72370-01ASD	ASD	10/22/08 0:14	I1081016-2	98.21624	319	404.23	mg/L	86.8	85	115	1.37	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72507**

Project ID: OJ06DZ

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254222</b>													
WG254222PBW	PBW	10/22/08 12:30				U	mg/L		-30	30			
WG254222LCSW	LCSW	10/22/08 12:33	WC080910-2	100		110	mg/L	110	80	120			
L72508-02DUP	DUP	10/22/08 13:07			3260	3149	mg/L				3.5	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.04863	mg/L	97.3	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0003	0.0003			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.0501		.04603	mg/L	91.9	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1002	U	.09378	mg/L	93.6	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1002	U	.09552	mg/L	95.3	70	130	1.84	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254207</b>													
WG254207ICV	ICV	10/21/08 23:21	MS081003-4	.05		.04657	mg/L	93.1	90	110			
WG254207ICB	ICB	10/21/08 23:27				U	mg/L		-0.0003	0.0003			
WG254207LFB	LFB	10/21/08 23:37	MS081003-7	.05		.04495	mg/L	89.9	85	115			
L72506-02AS	AS	10/21/08 23:53	MS081003-7	.1	.0006	.09588	mg/L	95.3	70	130			
L72506-02ASD	ASD	10/21/08 23:58	MS081003-7	.1	.0006	.0975	mg/L	96.9	70	130	1.68	20	

**Zinc, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254321</b>													
WG254321ICV	ICV	10/23/08 11:38	II080818-1	2		1.94	mg/L	97	95	105			
WG254321ICB	ICB	10/23/08 11:42				U	mg/L		-0.03	0.03			
WG254321LFB	LFB	10/23/08 11:54	II081016-2	.5		.481	mg/L	96.2	85	115			
L72370-01AS	AS	10/23/08 12:01	II081016-2	.5	U	.483	mg/L	96.6	85	115			
L72370-01ASD	ASD	10/23/08 12:04	II081016-2	.5	U	.476	mg/L	95.2	85	115	1.46	20	



**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72507**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72507-01</b>	WG254232	Sodium, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG254206	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254455	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254646	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254457	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254346	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72507**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72507  
Date Received: 10/16/2008  
Received By:  
Date Printed: 10/16/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
1172	1.8	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**  
OJ06DZ

ACZ Project ID: L72507  
Date Received: 10/16/2008  
Received By:

**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
L72507-01	PZ-7		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: \_\_\_\_\_



Laboratories, Inc.

L72507

CHAIN of CUSTODY

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

Report to:

Name: Bill Dorris  
Company: Freeport McMoran Sierrita  
E-mail: billy-dorris@fmi.com

Address: 6200 W. Duval Mine Rd  
Green Valley, AZ. 85614  
Telephone: 520-648-8873

Copy of Report to:

Name: Dan Simpson  
Company: Hydro Geo Chem

E-mail: dans@hginc.com  
Telephone: 520-293-1500 Ext.-133

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.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:  
Project/PO #: OJ06DZ  
Reporting state for compliance testing:  
Sampler's Name:  
Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ambient-TB	Uranium Metal-Dissolved										
PZ-7	10-14-08/12:00	GW	5	X	X										

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

REMARKS/ SAMPLE DISCLOSURES

- Copy of report to Dan Simpson contains only "SOY" results with QC Summary.  
→ Please generate a third report containing "VRP-SUITE" results with QC Summary and send to Rick Smith. Rick\_Smith@URS Corp. com.

PAGE  
of

UPS TRACKING # 1Z 867 7E4 23 1000 5690

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Billy F. Dorris	10-15-08/15:00	[Signature]	10-16-08/10:20

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

November 20, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72578- SULFATE ONLY

Bill Dorris:

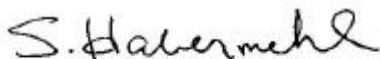
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 21, 2008. This project was assigned to ACZ's project number, L72578. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72578. 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: OJ06DZ

Sample ID: MH-25A

ACZ Sample ID: **L72578-01**

Date Sampled: 10/17/08 13:26

Date Received: 10/21/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	50			mg/L	10	50	10/24/08 15:58	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-25B

ACZ Sample ID: **L72578-02**

Date Sampled: 10/17/08 13:59

Date Received: 10/21/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1660			mg/L	20	100	10/24/08 16:02	kah

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-25C

ACZ Sample ID: **L72578-03**

Date Sampled: 10/17/08 13:05

Date Received: 10/21/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1270			mg/L	20	100	10/24/08 16:06	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-26A

ACZ Sample ID: **L72578-04**

Date Sampled: 10/17/08 14:25

Date Received: 10/21/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	20	B	*	mg/L	10	50	10/29/08 10:15	kah

**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.

**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.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72578**

Project ID: **OJ06DZ**
**Alkalinity as CaCO3**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254528</b>													
WG254528PBW1	PBW	10/24/08 17:43				U	mg/L		-20	20			
WG254528LCSW2	LCSW	10/24/08 17:55	WC081022-2	820.0001		795.4	mg/L	97	90	110			
WG254528PBW2	PBW	10/24/08 21:08				U	mg/L		-20	20			
WG254528LCSW5	LCSW	10/24/08 21:20	WC081022-2	820.0001		802.5	mg/L	97.9	90	110			
L72578-01DUP	DUP	10/24/08 23:01			160	153.8	mg/L				4	20	
L72585-01DUP	DUP	10/25/08 0:19			134	133.3	mg/L				0.5	20	
WG254528PBW3	PBW	10/25/08 0:25				U	mg/L		-20	20			
WG254528LCSW8	LCSW	10/25/08 0:36	WC081022-2	820.0001		809.5	mg/L	98.7	90	110			
WG254528PBW4	PBW	10/25/08 3:39				U	mg/L		-20	20			
WG254528LCSW11	LCSW	10/25/08 3:52	WC081022-2	820.0001		805.9	mg/L	98.3	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	2		1.998	mg/L	99.9	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.09	0.09			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	1		1.026	mg/L	102.6	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	1	.03	1.109	mg/L	107.9	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	1	.03	1.105	mg/L	107.5	85	115	0.36	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254621</b>													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.02		.02111	mg/L	105.6	90	110			
WG254621ICB	ICB	10/28/08 8:17				U	mg/L		-0.00088	0.00088			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.01		.00959	mg/L	95.9	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.01	U	.00888	mg/L	88.8	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.01	U	.0089	mg/L	89	70	130	0.22	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254621</b>													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.05		.05116	mg/L	102.3	90	110			
WG254621ICB	ICB	10/28/08 8:17				U	mg/L		-0.0011	0.0011			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.05		.04995	mg/L	99.9	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.05	U	.05096	mg/L	101.9	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.05	U	.05153	mg/L	103.1	70	130	1.11	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	2		1.946	mg/L	97.3	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.009	0.009			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	.5		.5028	mg/L	100.6	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	.5	.009	.5423	mg/L	106.7	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	.5	.009	.5326	mg/L	104.7	85	115	1.8	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72578

Project ID: OJ06DZ

Beryllium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254621													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.05		.05016	mg/L	100.3	90	110			
WG254621ICB	ICB	10/28/08 8:17				.0001	mg/L		-0.00022	0.00022			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.05005		.05102	mg/L	101.9	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.05005	U	.04651	mg/L	92.9	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.05005	U	.04755	mg/L	95	70	130	2.21	20	
Cadmium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254621													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.05		.04918	mg/L	98.4	90	110			
WG254621ICB	ICB	10/28/08 8:17				U	mg/L		-0.00022	0.00022			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.05		.04941	mg/L	98.8	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.05	U	.0464	mg/L	92.8	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.05	U	.04711	mg/L	94.2	70	130	1.52	20	
Calcium, dissolved			M200.7 ICP										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254351													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	100		96.1	mg/L	96.1	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.6	0.6			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	67.97008		68.48	mg/L	100.8	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	67.97008	187	243.32	mg/L	82.9	85	115			M2
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	67.97008	187	243.61	mg/L	83.3	85	115	0.12	20	M2
Chloride			SM4500Cl-E										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254543													
WG254543ICB	ICB	10/25/08 12:52				U	mg/L		-3	3			
WG254543ICV	ICV	10/25/08 12:52	WI080808-1	54.945		57	mg/L	103.7	90	110			
L72563-03AS	AS	10/25/08 13:57	WI080818-2	30	10	42	mg/L	106.7	90	110			
L72563-04DUP	DUP	10/25/08 13:57			10	9.4	mg/L				6.2	20	
L72578-04AS	AS	10/25/08 14:03	WI080818-2	30	10	42.2	mg/L	107.3	90	110			
L72580-01DUP	DUP	10/25/08 14:05			6	5.6	mg/L				6.9	20	RA
WG254543LFB1	LFB	10/25/08 14:12	WI080818-2	30		32.8	mg/L	109.3	90	110			
WG254543LFB2	LFB	10/25/08 14:23	WI080818-2	30		32	mg/L	106.7	90	110			
Chromium, dissolved			M200.7 ICP										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254744													
WG254744ICV	ICV	10/29/08 11:41	II080818-1	2		1.997	mg/L	99.9	95	105			
WG254744ICB	ICB	10/29/08 11:44				U	mg/L		-0.03	0.03			
WG254744LFB	LFB	10/29/08 11:55	II081023-4	.5		.527	mg/L	105.4	85	115			
L72438-01AS	AS	10/29/08 12:01	II081023-4	.5	U	.534	mg/L	106.8	85	115			
L72438-01ASD	ASD	10/29/08 12:03	II081023-4	.5	U	.529	mg/L	105.8	85	115	0.94	20	
L72588-14AS	AS	10/29/08 12:47	II081023-4	1	U	1.045	mg/L	104.5	85	115			
L72588-14ASD	ASD	10/29/08 12:50	II081023-4	1	U	1.047	mg/L	104.7	85	115	0.19	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72578

**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	2.002		1.914	mg/L	95.6	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.03	0.03			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	.5		.507	mg/L	101.4	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	.5	.18	.672	mg/L	98.4	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	.5	.18	.675	mg/L	99	85	115	0.45	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254528</b>													
WG254528LCSW1	LCSW	10/24/08 17:44	PCN30288	1408.8		1449	µmhos/cm	102.9	90	110			
WG254528LCSW4	LCSW	10/24/08 21:10	PCN30288	1408.8		1400	µmhos/cm	99.4	90	110			
L72578-01DUP	DUP	10/24/08 23:01			339	339	µmhos/cm				0	20	
L72585-01DUP	DUP	10/25/08 0:19			4730	4760	µmhos/cm				0.6	20	
WG254528LCSW7	LCSW	10/25/08 0:26	PCN30288	1408.8		1403	µmhos/cm	99.6	90	110			
WG254528LCSW10	LCSW	10/25/08 3:41	PCN30288	1408.8		1407	µmhos/cm	99.9	90	110			
WG254528LCSW13	LCSW	10/25/08 6:26	PCN30288	1408.8		1404	µmhos/cm	99.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254744</b>													
WG254744ICV	ICV	10/29/08 11:41	II080818-1	2		1.967	mg/L	98.4	95	105			
WG254744ICB	ICB	10/29/08 11:44				U	mg/L		-0.03	0.03			
WG254744LFB	LFB	10/29/08 11:55	II081023-4	.5		.516	mg/L	103.2	85	115			
L72438-01AS	AS	10/29/08 12:01	II081023-4	.5	U	.528	mg/L	105.6	85	115			
L72438-01ASD	ASD	10/29/08 12:03	II081023-4	.5	U	.51	mg/L	102	85	115	3.47	20	
L72588-14AS	AS	10/29/08 12:47	II081023-4	1	U	1.036	mg/L	103.6	85	115			
L72588-14ASD	ASD	10/29/08 12:50	II081023-4	1	U	1.041	mg/L	104.1	85	115	0.48	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254683</b>													
WG254683ICV	ICV	10/28/08 14:54	WI081025-3	.3		.2848	mg/L	94.9	90	110			
WG254683ICB	ICB	10/28/08 14:55				U	mg/L		-0.015	0.015			
WG254593LRB	LRB	10/28/08 14:55				U	mg/L		-0.015	0.015			
WG254593LFB	LFB	10/28/08 14:56	WI081025-7	.2		.1976	mg/L	98.8	90	110			
L72534-01DUP	DUP	10/28/08 14:58			U	U	mg/L				0	20	RA
L72546-01LFM	LFM	10/28/08 15:00	WI081025-7	.2	U	.2027	mg/L	101.4	90	110			
L72581-01DUP	DUP	10/28/08 15:10			.006	.0071	mg/L				16.8	20	RA
L72590-01LFM	LFM	10/28/08 15:11	WI081025-7	.2	U	.1972	mg/L	98.6	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L72578**

Project ID: OJ06DZ

### Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254913</b>													
WG254913ICV	ICV	10/31/08 10:37	WC081028-1	2		2.1	mg/L	105	95	105			
WG254913ICB	ICB	10/31/08 10:44				U	mg/L		-0.3	0.3			
WG254913LFB1	LFB	10/31/08 10:50	WC080912-3	5		4.75	mg/L	95	90	110			
L72541-01DUP	DUP	10/31/08 11:42			23.4	23.45	mg/L				0.2	20	
L72541-02AS	AS	10/31/08 11:47	WC080912-3	50	41	102.9	mg/L	123.8	90	110			M1
WG254913LFB2	LFB	10/31/08 12:23	WC080912-3	5		4.56	mg/L	91.2	90	110			

### Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	2		1.933	mg/L	96.7	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.06	0.06			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	1		1.037	mg/L	103.7	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	1	.77	1.781	mg/L	101.1	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	1	.77	1.778	mg/L	100.8	85	115	0.17	20	

### Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254621</b>													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.05		.04897	mg/L	97.9	90	110			
WG254621ICB	ICB	10/28/08 8:17				.00011	mg/L		-0.00022	0.00022			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.05		.04682	mg/L	93.6	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.05	.0006	.04234	mg/L	83.5	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.05	.0006	.04246	mg/L	83.7	70	130	0.28	20	

### Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	100		98.16	mg/L	98.2	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.6	0.6			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	49.96908		50.91	mg/L	101.9	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	49.96908	70.5	120.12	mg/L	99.3	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	49.96908	70.5	118.91	mg/L	96.9	85	115	1.01	20	

### Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	2		1.8897	mg/L	94.5	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.015	0.015			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	.5		.5274	mg/L	105.5	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	.5	5.91	5.9685	mg/L	11.7	85	115			M3
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	.5	5.91	5.9523	mg/L	8.5	85	115	0.27	20	M3

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72578**

Project ID: **OJ06DZ**
**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254868</b>													
WG254868ICV	ICV	10/31/08 10:19	II081015-2	.005		.00486	mg/L	97.2	95	105			
WG254868ICB	ICB	10/31/08 10:21				U	mg/L		-0.0002	0.0002			
<b>WG254911</b>													
WG254911LRB	LRB	10/31/08 19:18				U	mg/L		-0.00044	0.00044			
WG254911LFB	LFB	10/31/08 19:20	II081027-2	.002		.00185	mg/L	92.5	85	115			
L72564-01LFM	LFM	10/31/08 19:25	II081027-2	.002	U	.00184	mg/L	92	85	115			
L72564-01LFMD	LFMD	10/31/08 19:27	II081027-2	.002	U	.00186	mg/L	93	85	115	1.08	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254744</b>													
WG254744ICV	ICV	10/29/08 11:41	II080818-1	2		1.992	mg/L	99.6	95	105			
WG254744ICB	ICB	10/29/08 11:44				U	mg/L		-0.03	0.03			
WG254744LFB	LFB	10/29/08 11:55	II081023-4	.5		.504	mg/L	100.8	85	115			
L72438-01AS	AS	10/29/08 12:01	II081023-4	.5	.04	.551	mg/L	102.2	85	115			
L72438-01ASD	ASD	10/29/08 12:03	II081023-4	.5	.04	.545	mg/L	101	85	115	1.09	20	
L72588-14AS	AS	10/29/08 12:47	II081023-4	1	U	1.025	mg/L	102.5	85	115			
L72588-14ASD	ASD	10/29/08 12:50	II081023-4	1	U	1.007	mg/L	100.7	85	115	1.77	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254744</b>													
WG254744ICV	ICV	10/29/08 11:41	II080818-1	2.004		1.968	mg/L	98.2	95	105			
WG254744ICB	ICB	10/29/08 11:44				U	mg/L		-0.03	0.03			
WG254744LFB	LFB	10/29/08 11:55	II081023-4	.4985		.529	mg/L	106.1	85	115			
L72438-01AS	AS	10/29/08 12:01	II081023-4	.4985	.01	.549	mg/L	108.1	85	115			
L72438-01ASD	ASD	10/29/08 12:03	II081023-4	.4985	.01	.541	mg/L	106.5	85	115	1.47	20	
L72588-14AS	AS	10/29/08 12:47	II081023-4	.997	U	1.061	mg/L	106.4	85	115			
L72588-14ASD	ASD	10/29/08 12:50	II081023-4	.997	U	1.049	mg/L	105.2	85	115	1.14	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
<b>WG254546</b>													
WG254546ICV	ICV	10/25/08 15:17	WI080916-5	2.416		2.283	mg/L	94.5	90	110			
WG254546ICB	ICB	10/25/08 15:18				U	mg/L		-0.06	0.06			
<b>WG254547</b>													
WG254547ICV	ICV	10/25/08 15:57	WI080916-5	2.416		2.288	mg/L	94.7	90	110			
WG254547ICB	ICB	10/25/08 15:58				U	mg/L		-0.06	0.06			
WG254547LFB	LFB	10/25/08 15:59	WI080913-4	2		1.943	mg/L	97.2	90	110			
L72496-01AS	AS	10/25/08 16:02	WI080913-4	2	.61	2.574	mg/L	98.2	90	110			
L72497-01DUP	DUP	10/25/08 16:04			.06	.058	mg/L				3.4	20	RA



FMI Gold & Copper - Sierrita

Project ID: OJ06DZ

ACZ Project ID: L72578

**pH (lab)** M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254528</b>													
WG254528LCSW3	LCSW	10/24/08 17:58	PCN29627	6		6.24	units	104	90	110			
WG254528LCSW6	LCSW	10/24/08 21:22	PCN29627	6		6.24	units	104	90	110			
L72578-01DUP	DUP	10/24/08 23:01			8.3	8.3	units				0	20	
L72585-01DUP	DUP	10/25/08 0:19			8.4	8.37	units				0.4	20	
WG254528LCSW9	LCSW	10/25/08 0:39	PCN29627	6		6.26	units	104.3	90	110			
WG254528LCSW12	LCSW	10/25/08 3:54	PCN29627	6		6.25	units	104.2	90	110			

**Potassium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	20		19.96	mg/L	99.8	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.9	0.9			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	99.76186		102.92	mg/L	103.2	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	99.76186	1.1	113.06	mg/L	112.2	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	99.76186	1.1	111.2	mg/L	110.4	85	115	1.66	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254311</b>													
WG254311PBW	PBW	10/22/08 11:00				U	mg/L		-20	20			
WG254311LCSW	LCSW	10/22/08 11:00	PCN29988	260		272	mg/L	104.6	80	120			
L72589-01DUP	DUP	10/22/08 11:19			1290	1308	mg/L				1.4	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254794</b>													
WG254794ICV	ICV	10/31/08 19:48	MS081003-4	.05		.05368	mg/L	107.4	90	110			
WG254794ICB	ICB	10/31/08 19:53				U	mg/L		-0.00022	0.00022			
WG254794LFB	LFB	10/31/08 20:04	MS081003-7	.05		.04894	mg/L	97.9	85	115			
L72578-04AS	AS	10/31/08 22:19	MS081003-7	.05	.0004	.05984	mg/L	118.9	70	130			
L72578-04ASD	ASD	10/31/08 22:25	MS081003-7	.05	.0004	.05903	mg/L	117.3	70	130	1.36	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254351</b>													
WG254351ICV	ICV	10/28/08 22:11	II080818-1	100		99.73	mg/L	99.7	95	105			
WG254351ICV	ICV	10/28/08 22:11	II080818-1	100		99	mg/L	99	95	105			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-6	6			
WG254351ICB	ICB	10/28/08 22:14				U	mg/L		-0.9	0.9			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	98.21624		101	mg/L	102.8	85	115			
WG254351LFB	LFB	10/28/08 22:28	II081016-2	98.21624		101.75	mg/L	103.6	85	115			
L72569-01AS	AS	10/28/08 23:22	II081016-2	98.21624	5.8	115.22	mg/L	111.4	85	115			
L72569-01ASD	ASD	10/28/08 23:26	II081016-2	98.21624	5.8	113.56	mg/L	109.7	85	115	1.45	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72578**

Project ID: OJ06DZ

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254514</b>													
WG254514PBW	PBW	10/24/08 14:40				19	mg/L		-30	30			
WG254514LCSW	LCSW	10/24/08 14:43	WC080910-2	100		113	mg/L	113	80	120			
L72578-03DUP	DUP	10/24/08 16:10			1270	1258	mg/L				0.9	20	
<b>WG254730</b>													
WG254730PBW	PBW	10/29/08 10:00				16	mg/L		-30	30			
WG254730LCSW	LCSW	10/29/08 10:03	WC080910-2	100		109	mg/L	109	80	120			
L72587-04DUP	DUP	10/29/08 10:47			U	11	mg/L				200	20	RA

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254621</b>													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.05		.04837	mg/L	96.7	90	110			
WG254621ICB	ICB	10/28/08 8:17				U	mg/L		-0.00022	0.00022			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.0501		.04756	mg/L	94.9	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.0501	.0002	.04622	mg/L	91.9	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.0501	.0002	.04561	mg/L	90.6	70	130	1.33	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254621</b>													
WG254621ICV	ICV	10/28/08 8:11	MS081003-4	.05		.04872	mg/L	97.4	90	110			
WG254621ICB	ICB	10/28/08 8:17				U	mg/L		-0.00022	0.00022			
WG254621LFB	LFB	10/28/08 8:29	MS081003-7	.05		.04836	mg/L	96.7	85	115			
L72564-01AS	AS	10/28/08 10:25	MS081003-7	.05	U	.0444	mg/L	88.8	70	130			
L72564-01ASD	ASD	10/28/08 10:43	MS081003-7	.05	U	.04442	mg/L	88.8	70	130	0.05	20	

**Zinc, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254744</b>													
WG254744ICV	ICV	10/29/08 11:41	II080818-1	2		1.958	mg/L	97.9	95	105			
WG254744ICB	ICB	10/29/08 11:44				U	mg/L		-0.03	0.03			
WG254744LFB	LFB	10/29/08 11:55	II081023-4	.5		.548	mg/L	109.6	85	115			
L72438-01AS	AS	10/29/08 12:01	II081023-4	.5	U	.519	mg/L	103.8	85	115			
L72438-01ASD	ASD	10/29/08 12:03	II081023-4	.5	U	.517	mg/L	103.4	85	115	0.39	20	
L72588-14AS	AS	10/29/08 12:47	II081023-4	1	U	1.045	mg/L	104.5	85	115			
L72588-14ASD	ASD	10/29/08 12:50	II081023-4	1	U	1.088	mg/L	108.8	85	115	4.03	20	

**FMI Gold & Copper - Sierrita****ACZ Project ID: L72578**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72578-01</b>	WG254351	Calcium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254744	Molybdenum, dissolved	M200.7 ICP	N1	See Case Narrative.
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254913	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254547	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72578-02</b>	WG254351	Calcium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254744	Molybdenum, dissolved	M200.7 ICP	N1	See Case Narrative.
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254913	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254547	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72578-03</b>	WG254351	Calcium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254744	Molybdenum, dissolved	M200.7 ICP	N1	See Case Narrative.
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254913	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254547	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72578**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72578-04</b>	WG254351	Calcium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254744	Molybdenum, dissolved	M200.7 ICP	N1	See Case Narrative.
	WG254543	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254913	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254547	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254730	Sulfate	SM4500 SO4-D	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: **L72578**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72578  
Date Received: 10/21/2008  
Received By:  
Date Printed: 10/21/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
2116	2.4	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**  
OJ06DZ

ACZ Project ID: L72578  
Date Received: 10/21/2008  
Received By:

**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
L72578-01	MH-25A		Y		Y							<input type="checkbox"/>
L72578-02	MH-25B		Y		Y							<input type="checkbox"/>
L72578-03	MH-25C		Y		Y							<input type="checkbox"/>
L72578-04	MH-26A		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: \_\_\_\_\_

November 04, 2008

## Report to:

Bill Dorris

FMI Gold &amp; Copper - Sierrita

P.O. Box 527

Green Valley, AZ 85622-0527

## Bill to:

Accounts Payable

FMI Gold &amp; Copper - Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson

Project ID: OJ069R

ACZ Project ID: L72586

Bill Dorris:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 21, 2008. This project has been assigned to ACZ's project number, L72586. Please reference this number in all future inquiries.

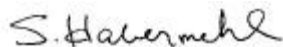
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72586. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

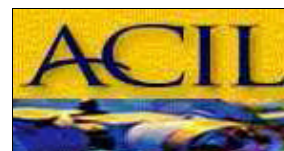
This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after December 04, 2008. 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: OJ069R

Sample ID: MO-2007-1A

ACZ Sample ID: **L72586-01**

Date Sampled: 10/17/08 11:19

Date Received: 10/21/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	17.9		*	mg/L	0.5	3	10/31/08 17:33	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-1B

ACZ Sample ID: **L72586-02**

Date Sampled: 10/17/08 10:35

Date Received: 10/21/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	54.3		*	mg/L	0.5	3	10/31/08 17:52	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.

**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.

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72586**

Project ID: OJ069R

**Sulfate**

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254713</b>													
WG254713ICV	ICV	10/28/08 19:48	WI081007-1	50		50.85	mg/L	101.7	90	110			
WG254713ICB	ICB	10/28/08 20:06				U	mg/L		-1.5	1.5			
WG254713ICV1	ICV	10/31/08 15:09	WI081031-2	50		52.4	mg/L	104.8	90	110			
WG254713ICB1	ICB	10/31/08 15:27				U	mg/L		-1.5	1.5			
WG254713LFB	LFB	10/31/08 15:45	WI081007-3	30		32.54	mg/L	108.5	90	110			
L72496-01AS	AS	10/31/08 16:21	WI081007-3	300	444	789.9	mg/L	115.3	90	110			M1
L72496-01DUP	DUP	10/31/08 16:39			444	488.9	mg/L				9.6	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72586**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L72586-01	WG254713	Sulfate	300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
L72586-02	WG254713	Sulfate	300.0 - 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: **L72586**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ069R

ACZ Project ID: L72586  
Date Received: 10/21/2008  
Received By:  
Date Printed: 10/21/2008

**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) Is the trip blank for Cyanide present?			X
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
2116	2.4	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**  
OJ069R

ACZ Project ID: L72586  
Date Received: 10/21/2008  
Received By:

**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
L72586-01	MO-2007-1A									X		<input type="checkbox"/>
L72586-02	MO-2007-1B									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: \_\_\_\_\_





November 13, 2008

## Report to:

Bill Dorris

FMI Gold &amp; Copper - Sierrita

P.O. Box 527

Green Valley, AZ 85622-0527

## Bill to:

Accounts Payable

FMI Gold &amp; Copper - Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson

Project ID: OJ069R

ACZ Project ID: L72606

Bill Dorris:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 22, 2008. This project has been assigned to ACZ's project number, L72606. Please reference this number in all future inquiries.

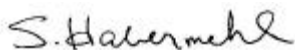
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72606. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after December 13, 2008. 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: OJ069R

Sample ID: MO-2007-1C

ACZ Sample ID: **L72606-01**

Date Sampled: 10/21/08 12:24

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	146		*	mg/L	3	10	11/11/08 2:12	aml

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-3C

ACZ Sample ID: **L72606-02**

Date Sampled: 10/21/08 11:27

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	103		*	mg/L	3	10	11/11/08 2:30	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.

## 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.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72606**

Project ID: OJ069R

Sulfate		300.0 - Ion Chromatography												
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG255184														
WG255184ICV	ICV	10/28/08 19:48	WI081031-2	50		50.85	mg/L	101.7	90	110				
WG255184ICB	ICB	10/28/08 20:06				U	mg/L		-1.5	1.5				
WG255184ICV1	ICV	11/06/08 15:09	WI081031-2	50		52.46	mg/L	104.9	90	110				
WG255184ICB1	ICB	11/06/08 15:27				U	mg/L		-1.5	1.5				
WG255184LFB	LFB	11/06/08 15:45	WI081007-3	30		32.31	mg/L	107.7	90	110				
L72668-05AS	AS	11/06/08 19:40	WI081007-3	30	U	34.43	mg/L	114.8	90	110			M1	
L72668-05DUP	DUP	11/06/08 19:59			U	U	mg/L				0	20	RA	
WG255184ICV2	ICV	11/10/08 12:04	WI081031-2	50		50.89	mg/L	101.8	90	110				
WG255184ICB2	ICB	11/10/08 12:22				U	mg/L		-1.5	1.5				
WG255184ICV3	ICV	11/11/08 1:18	WI081031-2	50		50.38	mg/L	100.8	90	110				
WG255184ICB3	ICB	11/11/08 1:36				U	mg/L		-1.5	1.5				

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72606**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72606-01</b>	WG255184	Sulfate	300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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).
<b>L72606-02</b>	WG255184	Sulfate	300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			300.0 - 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: **L72606**

No certification qualifiers associated with this analysis



**FMI Gold & Copper - Sierrita**  
OJ069R

ACZ Project ID: L72606  
Date Received: 10/22/2008  
Received By:  
Date Printed: 10/22/2008

**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) Is the trip blank for Cyanide present?			X
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
1713	4.2	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**  
OJ069R

ACZ Project ID: L72606  
Date Received: 10/22/2008  
Received By:

**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
L72606-01	MO-2007-1C									X		<input type="checkbox"/>
L72606-02	MO-2007-3C									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: \_\_\_\_\_



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

November 06, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72612- SULFATE ONLY

Bill Dorris:

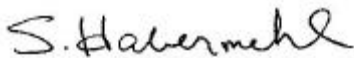
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 22, 2008. This project was assigned to ACZ's project number, L72612. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72612. 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: OJ06DZ

Sample ID: MH-13A

ACZ Sample ID: **L72612-01**

Date Sampled: 10/20/08 12:06

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1800			mg/L	20	100	10/29/08 11:14	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-13B

ACZ Sample ID: **L72612-02**

Date Sampled: 10/20/08 11:33

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1080			mg/L	20	100	10/29/08 11:17	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-13C

ACZ Sample ID: **L72612-03**

Date Sampled: 10/20/08 10:31

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	60			mg/L	10	50	10/29/08 11:19	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: MH-26-B

ACZ Sample ID: **L72612-04**

Date Sampled: 10/20/08 12:55

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1650			mg/L	50	250	10/29/08 11:22	kah

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-19

ACZ Sample ID: **L72612-05**

Date Sampled: 10/20/08 14:00

Date Received: 10/22/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1710			mg/L	50	250	10/29/08 11:24	kah

**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.

**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.

FMI Gold &amp; Copper - Sierrita

ACZ Project ID: **L72612**

Project ID: OJ06DZ

**Alkalinity as CaCO<sub>3</sub>**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837PBW1	PBW	10/30/08 13:26				U	mg/L		-20	20			
WG254837LCSW2	LCSW	10/30/08 13:36	WC081022-2	820.0001		782.5	mg/L	95.4	90	110			
L68011-34DUP	DUP	10/30/08 15:06			6	5.7	mg/L				5.1	20	RA
WG254837PBW2	PBW	10/30/08 16:23				U	mg/L		-20	20			
WG254837LCSW5	LCSW	10/30/08 16:34	WC081022-2	820.0001		789.3	mg/L	96.3	90	110			
WG254837PBW3	PBW	10/30/08 19:35				U	mg/L		-20	20			
WG254837LCSW8	LCSW	10/30/08 19:46	WC081022-2	820.0001		792.6	mg/L	96.7	90	110			
WG254837PBW4	PBW	10/30/08 22:58				U	mg/L		-20	20			
WG254837LCSW11	LCSW	10/30/08 23:09	WC081022-2	820.0001		802.3	mg/L	97.8	90	110			
WG254837LCSW14	LCSW	10/31/08 2:19	WC081022-2	820.0001		808.5	mg/L	98.6	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254737</b>													
WG254737ICV	ICV	10/29/08 21:51	II080818-1	2		1.936	mg/L	96.8	95	105			
WG254737ICB	ICB	10/29/08 21:55				U	mg/L		-0.09	0.09			
WG254737LFB	LFB	10/29/08 22:08	II081023-4	1		.963	mg/L	96.3	85	115			
L72605-10AS	AS	10/29/08 23:03	II081023-4	1	U	.965	mg/L	96.5	85	115			
L72605-10ASD	ASD	10/29/08 23:06	II081023-4	1	U	.947	mg/L	94.7	85	115	1.88	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254782</b>													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.02		.02102	mg/L	105.1	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.00088	0.00088			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.01		.00988	mg/L	98.8	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.1	U	.1122	mg/L	112.2	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.1	U	.1044	mg/L	104.4	70	130	7.2	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254782</b>													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.05052	mg/L	101	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.0011	0.0011			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.05		.04606	mg/L	92.1	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.5	.007	.5319	mg/L	105	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.5	.007	.4944	mg/L	97.5	70	130	7.31	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	2		2.0125	mg/L	100.6	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.009	0.009			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	.5		.5124	mg/L	102.5	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	.5	.009	.515	mg/L	101.2	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	.5	.009	.5162	mg/L	101.4	85	115	0.23	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72612**

Project ID: **OJ06DZ**

Beryllium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254782													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.0508	mg/L	101.6	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.00022	0.00022			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.05005		.04642	mg/L	92.7	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.5005	U	.5473	mg/L	109.4	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.5005	U	.5119	mg/L	102.3	70	130	6.68	20	
Cadmium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254782													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.05075	mg/L	101.5	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.00022	0.00022			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.05		.04702	mg/L	94	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.5	U	.5272	mg/L	105.4	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.5	U	.4862	mg/L	97.2	70	130	8.09	20	
Calcium, dissolved			M200.7 ICP										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254521													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	100		99.77	mg/L	99.8	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.6	0.6			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	67.97008		69.78	mg/L	102.7	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	67.97008	261	312.59	mg/L	75.9	85	115			M3
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	67.97008	261	309.18	mg/L	70.9	85	115	1.1	20	M3
Chloride			SM4500CL-E										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254738													
WG254738ICB	ICB	10/29/08 9:28				U	mg/L		-3	3			
WG254738ICV	ICV	10/29/08 9:28	WI080808-1	54.945		57.4	mg/L	104.5	90	110			
L72605-06DUP	DUP	10/29/08 10:11			54	54	mg/L				0	20	
L72615-01DUP	DUP	10/29/08 10:13			U	U	mg/L				0	20	RA
L72612-05AS	AS	10/29/08 10:29	10XCL	30	150	178	mg/L	93.3	90	110			
WG254738LFB1	LFB	10/29/08 10:37	WI080818-2	30		31.5	mg/L	105	90	110			
WG254738LFB2	LFB	10/29/08 10:37	WI080818-2	30		31.4	mg/L	104.7	90	110			
L72605-05AS	AS	10/29/08 10:48	10XCL	30	92	119	mg/L	90	90	110			
Chromium, dissolved			M200.7 ICP										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG254521													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	2		1.999	mg/L	100	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.03	0.03			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	.5		.507	mg/L	101.4	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	.5	U	.499	mg/L	99.8	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	.5	U	.511	mg/L	102.2	85	115	2.38	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72612

**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	2.002		2.002	mg/L	100	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.03	0.03			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	.5		.515	mg/L	103	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	.5	U	.517	mg/L	103.4	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	.5	U	.518	mg/L	103.6	85	115	0.19	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW1	LCSW	10/30/08 13:27	PCN30288	1408.8		1419	µmhos/cm	100.7	90	110			
L68011-34DUP	DUP	10/30/08 15:06			43	41.3	µmhos/cm				4	20	
WG254837LCSW4	LCSW	10/30/08 16:24	PCN30288	1408.8		1386	µmhos/cm	98.4	90	110			
WG254837LCSW7	LCSW	10/30/08 19:37	PCN30288	1408.8		1388	µmhos/cm	98.5	90	110			
WG254837LCSW10	LCSW	10/30/08 22:59	PCN30288	1408.8		1384	µmhos/cm	98.2	90	110			
WG254837LCSW13	LCSW	10/31/08 2:09	PCN30288	1408.8		1391	µmhos/cm	98.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	2		1.961	mg/L	98.1	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.03	0.03			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	.5		.499	mg/L	99.8	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	.5	U	.492	mg/L	98.4	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	.5	U	.507	mg/L	101.4	85	115	3	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254683</b>													
WG254683ICV	ICV	10/28/08 14:54	WI081025-3	.3		.2848	mg/L	94.9	90	110			
WG254683ICB	ICB	10/28/08 14:55				U	mg/L		-0.015	0.015			
WG254593LRB	LRB	10/28/08 14:55				U	mg/L		-0.015	0.015			
WG254593LFB	LFB	10/28/08 14:56	WI081025-7	.2		.1976	mg/L	98.8	90	110			
L72534-01DUP	DUP	10/28/08 14:58			U	U	mg/L				0	20	RA
L72546-01LFM	LFM	10/28/08 15:00	WI081025-7	.2	U	.2027	mg/L	101.4	90	110			
L72581-01DUP	DUP	10/28/08 15:10			.006	.0071	mg/L				16.8	20	RA
L72590-01LFM	LFM	10/28/08 15:11	WI081025-7	.2	U	.1972	mg/L	98.6	90	110			
<b>WG254898</b>													
WG254898ICV	ICV	10/30/08 21:53	WI081025-3	.3		.2835	mg/L	94.5	90	110			
WG254898ICB	ICB	10/30/08 21:53				U	mg/L		-0.015	0.015			
WG254750LRB	LRB	10/30/08 21:54				U	mg/L		-0.015	0.015			
WG254750LFB	LFB	10/30/08 21:55	WI081025-7	.2		.1901	mg/L	95.1	90	110			
L72612-04DUP	DUP	10/30/08 21:59			.009	.0096	mg/L				6.5	20	RA
L72612-05LFM	LFM	10/30/08 22:01	WI081025-7	.2	.011	.2004	mg/L	94.7	90	110			

FMI Gold & Copper - Sierrita

ACZ Project ID: **L72612**

Project ID: OJ06DZ

### Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254913</b>													
WG254913ICV	ICV	10/31/08 10:37	WC081028-1	2		2.1	mg/L	105	95	105			
WG254913ICB	ICB	10/31/08 10:44				U	mg/L		-0.3	0.3			
WG254913LFB1	LFB	10/31/08 10:50	WC080912-3	5		4.75	mg/L	95	90	110			
WG254913LFB2	LFB	10/31/08 12:23	WC080912-3	5		4.56	mg/L	91.2	90	110			
L72595-05DUP	DUP	10/31/08 13:30			.4	.36	mg/L				10.5	20	RA
L72595-06AS	AS	10/31/08 13:35	WC080912-3	5	2.2	6.89	mg/L	93.8	90	110			
<b>WG255003</b>													
WG255003ICV	ICV	11/03/08 10:19	WC081029-9	2		2.1	mg/L	105	95	105			
WG255003ICB	ICB	11/03/08 10:26				U	mg/L		-0.3	0.3			
WG255003LFB1	LFB	11/03/08 10:30	WC080912-3	5		5.09	mg/L	101.8	90	110			
L72497-01DUP	DUP	11/03/08 10:35			.6	.56	mg/L				6.9	20	RA
L72502-02AS	AS	11/03/08 10:40	WC080912-3	5	.9	6.3	mg/L	108	90	110			
WG255003LFB2	LFB	11/03/08 12:00	WC080912-3	5		4.77	mg/L	95.4	90	110			

### Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	2		1.932	mg/L	96.6	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.06	0.06			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	1		1.017	mg/L	101.7	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	1	1.56	2.491	mg/L	93.1	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	1	1.56	2.507	mg/L	94.7	85	115	0.64	20	

### Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254782</b>													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.04853	mg/L	97.1	90	110			
WG254782ICB	ICB	10/31/08 3:28				.0001	mg/L		-0.00022	0.00022			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.05		.04342	mg/L	86.8	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.5	U	.4907	mg/L	98.1	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.5	U	.455	mg/L	91	70	130	7.55	20	

### Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	100		99.99	mg/L	100	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.6	0.6			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	49.96908		50.47	mg/L	101	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	49.96908	17.7	68.54	mg/L	101.7	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	49.96908	17.7	66.51	mg/L	97.7	85	115	3.01	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72612**

Project ID: OJ06DZ

**Manganese, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	I080818-1	2		1.9938	mg/L	99.7	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.015	0.015			
WG254521LFB	LFB	10/28/08 18:51	I081023-4	.5		.5438	mg/L	108.8	85	115			
L72605-10AS	AS	10/28/08 19:38	I081023-4	.5	.327	.8552	mg/L	105.6	85	115			
L72605-10ASD	ASD	10/28/08 19:41	I081023-4	.5	.327	.8555	mg/L	105.7	85	115	0.04	20	

**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254935</b>													
WG254935ICV	ICV	11/01/08 11:10	I081015-2	.005		.00507	mg/L	101.4	95	105			
WG254935ICB	ICB	11/01/08 11:13				U	mg/L		-0.0002	0.0002			
WG254935LRB	LRB	11/01/08 11:17				U	mg/L		-0.00044	0.00044			
WG254935LFB	LFB	11/01/08 11:19	I081027-2	.002		.00194	mg/L	97	85	115			
L72468-01LFM	LFM	11/01/08 11:25	I081027-2	.002	U	.00189	mg/L	94.5	85	115			
L72468-01LFMD	LFMD	11/01/08 11:27	I081027-2	.002	U	.00186	mg/L	93	85	115	1.6	20	
L72612-02LFM	LFM	11/01/08 11:57	I081027-2	.002	U	.00192	mg/L	96	85	115			
L72612-02LFMD	LFMD	11/01/08 11:59	I081027-2	.002	U	.00191	mg/L	95.5	85	115	0.52	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	I080818-1	2		1.996	mg/L	99.8	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.03	0.03			
WG254521LFB	LFB	10/28/08 18:51	I081023-4	.5		.509	mg/L	101.8	85	115			
L72605-10AS	AS	10/28/08 19:38	I081023-4	.5	.06	.555	mg/L	99	85	115			
L72605-10ASD	ASD	10/28/08 19:41	I081023-4	.5	.06	.553	mg/L	98.6	85	115	0.36	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	I080818-1	2.004		1.968	mg/L	98.2	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.03	0.03			
WG254521LFB	LFB	10/28/08 18:51	I081023-4	.4985		.512	mg/L	102.7	85	115			
L72605-10AS	AS	10/28/08 19:38	I081023-4	.4985	.01	.52	mg/L	102.3	85	115			
L72605-10ASD	ASD	10/28/08 19:41	I081023-4	.4985	.01	.533	mg/L	104.9	85	115	2.47	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72612**

Project ID: **OJ06DZ**
**Nitrate/Nitrite as N**

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254717</b>													
WG254717ICV	ICV	10/28/08 18:28	WI080916-5	2.416		2.395	mg/L	99.1	90	110			
WG254717ICB	ICB	10/28/08 18:29				U	mg/L		-0.06	0.06			
<b>WG254721</b>													
WG254721ICV	ICV	10/28/08 20:15	WI080916-5	2.416		2.281	mg/L	94.4	90	110			
WG254721ICB	ICB	10/28/08 20:17				U	mg/L		-0.06	0.06			
WG254721LFB1	LFB	10/28/08 20:18	WI080913-4	2		1.934	mg/L	96.7	90	110			
L72542-09AS	AS	10/28/08 20:39	WI080913-4	2	.15	2.18	mg/L	101.5	90	110			
L72542-10DUP	DUP	10/28/08 20:42			1.52	1.502	mg/L				1.2	20	
WG254721LFB2	LFB	10/28/08 20:57	WI080913-4	2		1.897	mg/L	94.9	90	110			

**pH (lab)**

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW3	LCSW	10/30/08 13:40	PCN29627	6		6.13	units	102.2	90	110			
L68011-34DUP	DUP	10/30/08 15:06			7.2	7.3	units				1.4	20	
WG254837LCSW6	LCSW	10/30/08 16:37	PCN29627	6		6.17	units	102.8	90	110			
WG254837LCSW9	LCSW	10/30/08 19:50	PCN29627	6		6.14	units	102.3	90	110			
WG254837LCSW12	LCSW	10/30/08 23:12	PCN29627	6		6.06	units	101	90	110			
WG254837LCSW15	LCSW	10/31/08 2:23	PCN29627	6		6.17	units	102.8	90	110			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254737</b>													
WG254737ICV	ICV	10/29/08 21:51	II080818-1	20		19.93	mg/L	99.7	95	105			
WG254737ICB	ICB	10/29/08 21:55				U	mg/L		-0.9	0.9			
WG254737LFB	LFB	10/29/08 22:08	II081023-4	99.76186		99.3	mg/L	99.5	85	115			
L72605-10AS	AS	10/29/08 23:03	II081023-4	99.76186	5.2	106.7	mg/L	101.7	85	115			
L72605-10ASD	ASD	10/29/08 23:06	II081023-4	99.76186	5.2	105.41	mg/L	100.4	85	115	1.22	20	

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

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254606</b>													
WG254606PBW	PBW	10/27/08 14:50				U	mg/L		-20	20			
WG254606LCSW	LCSW	10/27/08 14:50	PCN29989	260		238	mg/L	91.5	80	120			
L72613-01DUP	DUP	10/27/08 15:00			330	372	mg/L				12	20	

**Selenium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254782</b>													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.05107	mg/L	102.1	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.00022	0.00022			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.05		.04422	mg/L	88.4	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.5	U	.4871	mg/L	97.4	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.5	U	.4639	mg/L	92.8	70	130	4.88	20	



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72612

**Sodium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254737</b>													
WG254737ICV	ICV	10/29/08 21:51	II080818-1	100		99.63	mg/L	99.6	95	105			
WG254737ICB	ICB	10/29/08 21:55				U	mg/L		-0.9	0.9			
WG254737LFB	LFB	10/29/08 22:08	II081023-4	98.21624		98.19	mg/L	100	85	115			
L72605-10AS	AS	10/29/08 23:03	II081023-4	98.21624	308	384.11	mg/L	77.5	85	115			M2
L72605-10ASD	ASD	10/29/08 23:06	II081023-4	98.21624	308	388.23	mg/L	81.7	85	115	1.07	20	M2

**Sulfate**

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254731</b>													
WG254731PBW	PBW	10/29/08 10:30				U	mg/L		-30	30			
WG254731LCSW	LCSW	10/29/08 10:32	WC080910-2	100		102	mg/L	102	80	120			
L72622-01DUP	DUP	10/29/08 11:30			1780	1585	mg/L				11.6	20	

**Thallium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254782</b>													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.04924	mg/L	98.5	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.00022	0.00022			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.0501		.04424	mg/L	88.3	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.501	U	.5017	mg/L	100.1	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.501	U	.4654	mg/L	92.9	70	130	7.51	20	

**Uranium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254782</b>													
WG254782ICV	ICV	10/31/08 3:23	MS081003-4	.05		.04694	mg/L	93.9	90	110			
WG254782ICB	ICB	10/31/08 3:28				U	mg/L		-0.00022	0.00022			
WG254782LFB	LFB	10/31/08 3:39	MS081003-7	.05		.0433	mg/L	86.6	85	115			
L72603-06AS	AS	10/31/08 5:02	MS081003-7	.5	.001	.4951	mg/L	98.8	70	130			
L72603-06ASD	ASD	10/31/08 5:07	MS081003-7	.5	.001	.4593	mg/L	91.7	70	130	7.5	20	

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254521</b>													
WG254521ICV	ICV	10/28/08 18:37	II080818-1	2		1.95	mg/L	97.5	95	105			
WG254521ICB	ICB	10/28/08 18:41				U	mg/L		-0.03	0.03			
WG254521LFB	LFB	10/28/08 18:51	II081023-4	.5		.505	mg/L	101	85	115			
L72605-10AS	AS	10/28/08 19:38	II081023-4	.5	.04	.558	mg/L	103.6	85	115			
L72605-10ASD	ASD	10/28/08 19:41	II081023-4	.5	.04	.542	mg/L	100.4	85	115	2.91	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72612**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72612-01</b>	WG254521	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254737	Sodium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254913	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72612-02</b>	WG254521	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254737	Sodium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254913	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72612-03</b>	WG254521	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254737	Sodium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254837	Conductivity @25C	SM2510B	N1	See Case Narrative.
	WG254683	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255003	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	pH	SM4500H+ B	N1	See Case Narrative.
		Total Alkalinity	SM2320B - Titration SM2320B - Titration	N1 RA	See Case Narrative. Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72612-04</b>	WG254521	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254737	Sodium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254898	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255003	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	Total Alkalinity	SM2320B - Titration	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: **L72612**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72612-05</b>	WG254521	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254737	Sodium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254738	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254898	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255003	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	Total Alkalinity	SM2320B - Titration	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: **L72612**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72612  
Date Received: 10/22/2008  
Received By:  
Date Printed: 10/22/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
1713	4.2	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**  
OJ06DZ

ACZ Project ID: L72612  
Date Received: 10/22/2008  
Received By:

**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
L72612-01	MH-13A		Y		Y							<input type="checkbox"/>
L72612-02	MH-13B		Y		Y							<input type="checkbox"/>
L72612-03	MH-13C		Y		Y							<input type="checkbox"/>
L72612-04	MH-26-B		Y		Y							<input type="checkbox"/>
L72612-05	IW-19		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: \_\_\_\_\_



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

November 12, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72697- SULFATE ONLY

Bill Dorris:

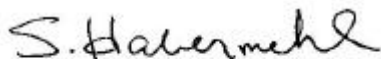
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 28, 2008. This project was assigned to ACZ's project number, L72697. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72697. 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: OJ06DZ

Sample ID: IW-18

ACZ Sample ID: **L72697-01**

Date Sampled: 10/24/08 09:55

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1680			mg/L	20	100	10/30/08 15:03	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-20

ACZ Sample ID: **L72697-02**

Date Sampled: 10/24/08 13:10

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1600			mg/L	10	50	10/30/08 15:06	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-21

ACZ Sample ID: **L72697-03**

Date Sampled: 10/24/08 13:20

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1640			mg/L	10	50	10/30/08 15:10	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-22

ACZ Sample ID: **L72697-04**

Date Sampled: 10/24/08 11:30

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720			mg/L	10	50	10/30/08 15:13	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-23

ACZ Sample ID: **L72697-05**

Date Sampled: 10/24/08 11:50

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1780			mg/L	50	250	10/30/08 15:19	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-24

ACZ Sample ID: **L72697-06**

Date Sampled: 10/24/08 12:00

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1640			mg/L	20	100	10/30/08 15:23	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: DUP102408A

ACZ Sample ID: **L72697-07**

Date Sampled: 10/24/08 00:00

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720			mg/L	10	50	10/30/08 15:26	kah

**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.

**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.



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72697

**Alkalinity as CaCO3**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837PBW1	PBW	10/30/08 13:26				U	mg/L		-20	20			
WG254837LCSW2	LCSW	10/30/08 13:36	WC081022-2	820.0001		782.5	mg/L	95.4	90	110			
WG254837PBW2	PBW	10/30/08 16:23				U	mg/L		-20	20			
WG254837LCSW5	LCSW	10/30/08 16:34	WC081022-2	820.0001		789.3	mg/L	96.3	90	110			
WG254837PBW3	PBW	10/30/08 19:35				U	mg/L		-20	20			
WG254837LCSW8	LCSW	10/30/08 19:46	WC081022-2	820.0001		792.6	mg/L	96.7	90	110			
L72697-01DUP	DUP	10/30/08 22:52			125	126.1	mg/L				0.9	20	
WG254837PBW4	PBW	10/30/08 22:58				U	mg/L		-20	20			
WG254837LCSW11	LCSW	10/30/08 23:09	WC081022-2	820.0001		802.3	mg/L	97.8	90	110			
L72698-04DUP	DUP	10/31/08 0:39			120	120.2	mg/L				0.2	20	
WG254837LCSW14	LCSW	10/31/08 2:19	WC081022-2	820.0001		808.5	mg/L	98.6	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255180</b>													
WG255180ICV	ICV	11/05/08 13:48	I080818-1	2		1.975	mg/L	98.8	95	105			
WG255180ICB	ICB	11/05/08 13:52				U	mg/L		-0.09	0.09			
WG255180LFB	LFB	11/05/08 14:04	I081023-4	1		1.019	mg/L	101.9	85	115			
L72696-01AS	AS	11/05/08 14:21	I081023-4	1	U	1.025	mg/L	102.5	85	115			
L72696-01ASD	ASD	11/05/08 14:24	I081023-4	1	U	1.039	mg/L	103.9	85	115	1.36	20	
L72697-04AS	AS	11/05/08 14:57	I081023-4	2	U	2.096	mg/L	104.8	85	115			
L72697-04ASD	ASD	11/05/08 15:01	I081023-4	2	U	2.059	mg/L	103	85	115	1.78	20	
<b>WG255325</b>													
WG255325ICV	ICV	11/07/08 15:03	I080818-1	2		1.94	mg/L	97	95	105			
WG255325ICB	ICB	11/07/08 15:07				U	mg/L		-0.09	0.09			
WG255325LFB	LFB	11/07/08 15:20	I081105-2	1		1.001	mg/L	100.1	85	115			
L72709-01AS	AS	11/07/08 15:30	I081105-2	1	.07	1.071	mg/L	100.1	85	115			
L72709-01ASD	ASD	11/07/08 15:33	I081105-2	1	.07	1.067	mg/L	99.7	85	115	0.37	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.02		.02093	mg/L	104.7	90	110			
WG255377ICB	ICB	11/07/08 17:43				.00068	mg/L		-0.00088	0.00088			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.01		.00948	mg/L	94.8	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.02	U	.01997	mg/L	99.9	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.02	U	.02238	mg/L	111.9	70	130	11.38	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05045	mg/L	100.9	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.0011	0.0011			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05187	mg/L	103.7	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.002	.1152	mg/L	113.2	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.002	.1135	mg/L	111.5	70	130	1.49	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72697**Project ID: **OJ06DZ****Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	II080818-1	2		2.031	mg/L	101.6	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.009	0.009			
WG254880LFB	LFB	11/04/08 10:49	II081023-4	.5		.5246	mg/L	104.9	85	115			
L72696-03AS	AS	11/04/08 11:40	II081023-4	.5	.049	.5727	mg/L	104.7	85	115			
L72696-03ASD	ASD	11/04/08 11:44	II081023-4	.5	.049	.577	mg/L	105.6	85	115	0.75	20	

**Beryllium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05009	mg/L	100.2	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05005		.05006	mg/L	100	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1001	U	.10656	mg/L	106.5	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1001	U	.10626	mg/L	106.2	70	130	0.28	20	

**Cadmium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05097	mg/L	101.9	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05208	mg/L	104.2	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	U	.10614	mg/L	106.1	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	U	.10628	mg/L	106.3	70	130	0.13	20	

**Calcium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	II080818-1	100		100.17	mg/L	100.2	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.6	0.6			
WG254880LFB	LFB	11/04/08 10:49	II081023-4	67.97008		72.04	mg/L	106	85	115			
L72696-03AS	AS	11/04/08 11:40	II081023-4	67.97008	222	284.53	mg/L	92	85	115			
L72696-03ASD	ASD	11/04/08 11:44	II081023-4	67.97008	222	284.6	mg/L	92.1	85	115	0.02	20	

**Chloride**

SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254833</b>													
WG254833ICB	ICB	10/30/08 8:44				U	mg/L		-3	3			
WG254833ICV	ICV	10/30/08 8:44	WI080808-1	54.945		57.5	mg/L	104.7	90	110			
WG254833LFB2	LFB	10/30/08 13:09	WI080818-2	30		32.8	mg/L	109.3	90	110			
L72678-02AS	AS	10/30/08 13:09	WI080818-2	30	22	55.1	mg/L	110.3	90	110			
L72678-03DUP	DUP	10/30/08 13:09			23	22.8	mg/L				0.9	20	
WG254833LFB1	LFB	10/30/08 13:24	WI080818-2	30		32.7	mg/L	109	90	110			
L72697-06AS	AS	10/30/08 13:33	10XCL	30	160	193	mg/L	110	90	110			
L72697-07DUP	DUP	10/30/08 13:34			140	140	mg/L				0	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72697

**Chromium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	I1080818-1	2		1.974	mg/L	98.7	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.03	0.03			
WG254880LFB	LFB	11/04/08 10:49	I1081023-4	.5		.522	mg/L	104.4	85	115			
L72696-03AS	AS	11/04/08 11:40	I1081023-4	.5	U	.537	mg/L	107.4	85	115			
L72696-03ASD	ASD	11/04/08 11:44	I1081023-4	.5	U	.542	mg/L	108.4	85	115	0.93	20	

**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	I1080818-1	2.002		2.006	mg/L	100.2	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.03	0.03			
WG254880LFB	LFB	11/04/08 10:49	I1081023-4	.5		.532	mg/L	106.4	85	115			
L72696-03AS	AS	11/04/08 11:40	I1081023-4	.5	U	.545	mg/L	109	85	115			
L72696-03ASD	ASD	11/04/08 11:44	I1081023-4	.5	U	.545	mg/L	109	85	115	0	20	

**WG255180**

WG255180ICV	ICV	11/05/08 13:48	I1080818-1	2.002		2	mg/L	99.9	95	105			
WG255180ICB	ICB	11/05/08 13:52				U	mg/L		-0.03	0.03			
WG255180LFB	LFB	11/05/08 14:04	I1081023-4	.5		.519	mg/L	103.8	85	115			
L72696-01AS	AS	11/05/08 14:21	I1081023-4	.5	U	.533	mg/L	106.6	85	115			
L72696-01ASD	ASD	11/05/08 14:24	I1081023-4	.5	U	.521	mg/L	104.2	85	115	2.28	20	
L72697-04AS	AS	11/05/08 14:57	I1081023-4	1	U	1.037	mg/L	103.7	85	115			
L72697-04ASD	ASD	11/05/08 15:01	I1081023-4	1	U	.992	mg/L	99.2	85	115	4.44	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW1	LCSW	10/30/08 13:27	PCN30288	1408.8		1419	µmhos/cm	100.7	90	110			
WG254837LCSW4	LCSW	10/30/08 16:24	PCN30288	1408.8		1386	µmhos/cm	98.4	90	110			
WG254837LCSW7	LCSW	10/30/08 19:37	PCN30288	1408.8		1388	µmhos/cm	98.5	90	110			
L72697-01DUP	DUP	10/30/08 22:52			3070	3100	µmhos/cm				1	20	
WG254837LCSW10	LCSW	10/30/08 22:59	PCN30288	1408.8		1384	µmhos/cm	98.2	90	110			
L72698-04DUP	DUP	10/31/08 0:39			3310	3300	µmhos/cm				0.3	20	
WG254837LCSW13	LCSW	10/31/08 2:09	PCN30288	1408.8		1391	µmhos/cm	98.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	I1080818-1	2		1.971	mg/L	98.6	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.03	0.03			
WG254880LFB	LFB	11/04/08 10:49	I1081023-4	.5		.523	mg/L	104.6	85	115			
L72696-03AS	AS	11/04/08 11:40	I1081023-4	.5	U	.524	mg/L	104.8	85	115			
L72696-03ASD	ASD	11/04/08 11:44	I1081023-4	.5	U	.539	mg/L	107.8	85	115	2.82	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72697

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255240</b>													
WG255240ICV	ICV	11/06/08 10:39	WI081025-3	.3		.2803	mg/L	93.4	90	110			
WG255240ICB	ICB	11/06/08 10:40				U	mg/L		-0.015	0.015			
WG255091LRB	LRB	11/06/08 10:41				U	mg/L		-0.015	0.015			
WG255091LFB	LFB	11/06/08 10:42	WI081025-7	.2		.1916	mg/L	95.8	90	110			
L72677-01DUP	DUP	11/06/08 10:44			U	U	mg/L				0	20	RA
L72697-01LFM	LFM	11/06/08 10:45	WI081025-7	.2	.017	.2037	mg/L	93.4	90	110			

**Fluoride**

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255078</b>													
WG255078ICV	ICV	11/04/08 9:29	WC081029-9	2		2.1	mg/L	105	95	105			
WG255078ICB	ICB	11/04/08 9:39				U	mg/L		-0.3	0.3			
WG255078LFB1	LFB	11/04/08 9:45	WC080912-3	5		4.91	mg/L	98.2	90	110			
WG255078LFB2	LFB	11/04/08 11:23	WC080912-3	5		4.79	mg/L	95.8	90	110			
L72678-02AS	AS	11/04/08 12:28	WC080912-3	5	.2	3.92	mg/L	74.4	90	110			M2
L72678-02DUP	DUP	11/04/08 12:30			.2	.19	mg/L				5.1	20	RA

**WG255164**

WG255164ICV	ICV	11/06/08 14:10	WC081106-1	2		2.05	mg/L	102.5	95	105			
WG255164ICB	ICB	11/06/08 14:17				U	mg/L		-0.3	0.3			
WG255164LFB1	LFB	11/06/08 14:22	WC080912-3	5		4.98	mg/L	99.6	90	110			
L72630-01AS	AS	11/06/08 14:37	WC080912-3	5	48.4	53.61	mg/L	104.2	90	110			
L72630-01DUP	DUP	11/06/08 14:40			48.4	47.69	mg/L				1.5	20	
WG255164LFB2	LFB	11/06/08 16:04	WC080912-3	5		4.75	mg/L	95	90	110			

**Iron, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	II080818-1	2		1.955	mg/L	97.8	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.06	0.06			
WG254880LFB	LFB	11/04/08 10:49	II081023-4	1		1.041	mg/L	104.1	85	115			
L72696-03AS	AS	11/04/08 11:40	II081023-4	1	.06	1.13	mg/L	107	85	115			
L72696-03ASD	ASD	11/04/08 11:44	II081023-4	1	.06	1.137	mg/L	107.7	85	115	0.62	20	

**Lead, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.04759	mg/L	95.2	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.0476	mg/L	95.2	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.0003	.1034	mg/L	103.1	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.0003	.10378	mg/L	103.5	70	130	0.37	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72697

**Magnesium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	I1080818-1	100		100.33	mg/L	100.3	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.6	0.6			
WG254880LFB	LFB	11/04/08 10:49	I1081023-4	49.96908		52.12	mg/L	104.3	85	115			
L72696-03AS	AS	11/04/08 11:40	I1081023-4	49.96908	34.1	87.44	mg/L	106.7	85	115			
L72696-03ASD	ASD	11/04/08 11:44	I1081023-4	49.96908	34.1	87.86	mg/L	107.6	85	115	0.48	20	
<b>WG255180</b>													
WG255180ICV	ICV	11/05/08 13:48	I1080818-1	100		100.56	mg/L	100.6	95	105			
WG255180ICB	ICB	11/05/08 13:52				U	mg/L		-0.6	0.6			
WG255180LFB	LFB	11/05/08 14:04	I1081023-4	49.96908		51.27	mg/L	102.6	85	115			
L72696-01AS	AS	11/05/08 14:21	I1081023-4	49.96908	6.9	58.7	mg/L	103.7	85	115			
L72696-01ASD	ASD	11/05/08 14:24	I1081023-4	49.96908	6.9	59.48	mg/L	105.2	85	115	1.32	20	
L72697-04AS	AS	11/05/08 14:57	I1081023-4	99.93816	88.1	187.54	mg/L	99.5	85	115			
L72697-04ASD	ASD	11/05/08 15:01	I1081023-4	99.93816	88.1	184.57	mg/L	96.5	85	115	1.6	20	

**Manganese, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	I1080818-1	2		1.9802	mg/L	99	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.015	0.015			
WG254880LFB	LFB	11/04/08 10:49	I1081023-4	.5		.5496	mg/L	109.9	85	115			
L72696-03AS	AS	11/04/08 11:40	I1081023-4	.5	U	.5629	mg/L	112.6	85	115			
L72696-03ASD	ASD	11/04/08 11:44	I1081023-4	.5	U	.5661	mg/L	113.2	85	115	0.57	20	

**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254977</b>													
WG254977ICV	ICV	11/03/08 8:43	I1081015-2	.005		.00504	mg/L	100.8	95	105			
WG254977ICB	ICB	11/03/08 8:45				U	mg/L		-0.0002	0.0002			
<b>WG254980</b>													
WG254980LRB	LRB	11/03/08 13:33				U	mg/L		-0.00044	0.00044			
WG254980LFB	LFB	11/03/08 13:35	I1081027-2	.002		.00194	mg/L	97	85	115			
L72656-01LFM	LFM	11/03/08 13:39	I1081027-2	.002	U	.00191	mg/L	95.5	85	115			
L72656-01LFMD	LFMD	11/03/08 13:41	I1081027-2	.002	U	.00191	mg/L	95.5	85	115	0	20	
L72697-04LFM	LFM	11/03/08 14:11	I1081027-2	.002	U	.00205	mg/L	102.5	85	115			
L72697-04LFMD	LFMD	11/03/08 14:13	I1081027-2	.002	U	.00203	mg/L	101.5	85	115	0.98	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255180</b>													
WG255180ICV	ICV	11/05/08 13:48	I1080818-1	2		1.998	mg/L	99.9	95	105			
WG255180ICB	ICB	11/05/08 13:52				U	mg/L		-0.03	0.03			
WG255180LFB	LFB	11/05/08 14:04	I1081023-4	.5		.501	mg/L	100.2	85	115			
L72696-01AS	AS	11/05/08 14:21	I1081023-4	.5	U	.496	mg/L	99.2	85	115			
L72696-01ASD	ASD	11/05/08 14:24	I1081023-4	.5	U	.502	mg/L	100.4	85	115	1.2	20	
L72697-04AS	AS	11/05/08 14:57	I1081023-4	1	.12	1.168	mg/L	104.8	85	115			
L72697-04ASD	ASD	11/05/08 15:01	I1081023-4	1	.12	1.133	mg/L	101.3	85	115	3.04	20	

FMI Gold & Copper - Sierrita

Project ID: OJ06DZ

ACZ Project ID: L72697

Nickel, dissolved		M200.7 ICP											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	II080818-1	2.004		1.944	mg/L	97	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.03	0.03			
WG254880LFB	LFB	11/04/08 10:49	II081023-4	.4985		.519	mg/L	104.1	85	115			
L72696-03AS	AS	11/04/08 11:40	II081023-4	.4985	U	.55	mg/L	110.3	85	115			
L72696-03ASD	ASD	11/04/08 11:44	II081023-4	.4985	U	.554	mg/L	111.1	85	115	0.72	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
<b>WG254994</b>													
WG254994ICV	ICV	11/01/08 19:11	WI080916-5	2.416		2.391	mg/L	99	90	110			
WG254994ICB	ICB	11/01/08 19:12				.025	mg/L		-0.06	0.06			
WG254994LFB1	LFB	11/01/08 19:13	WI080913-4	2		2.058	mg/L	102.9	90	110			
L72688-01AS	AS	11/01/08 19:16	WI080913-4	2	.05	2.261	mg/L	110.6	90	110			M1
L72697-01DUP	DUP	11/01/08 19:18			2.17	2.159	mg/L				0.5	20	
WG254994LFB2	LFB	11/01/08 19:52	WI080913-4	2		1.988	mg/L	99.4	90	110			

<b>WG255219</b>													
WG255219ICV	ICV	11/05/08 19:45	WI080916-5	2.416		2.392	mg/L	99	90	110			
WG255219ICB	ICB	11/05/08 19:47				U	mg/L		-0.06	0.06			
<b>WG255221</b>													
WG255221ICV	ICV	11/05/08 21:03	WI080916-5	2.416		2.286	mg/L	94.6	90	110			
WG255221ICB	ICB	11/05/08 21:05				U	mg/L		-0.06	0.06			
WG255221LFB	LFB	11/05/08 21:06	WI080913-4	2		1.912	mg/L	95.6	90	110			
L72630-01AS	AS	11/05/08 21:08	WI080913-4	2	.1	1.915	mg/L	90.8	90	110			
L72639-01DUP	DUP	11/05/08 21:11			.55	.554	mg/L				0.7	20	

pH (lab)		M150.1 - Electrometric											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW3	LCSW	10/30/08 13:40	PCN29627	6		6.13	units	102.2	90	110			
WG254837LCSW6	LCSW	10/30/08 16:37	PCN29627	6		6.17	units	102.8	90	110			
WG254837LCSW9	LCSW	10/30/08 19:50	PCN29627	6		6.14	units	102.3	90	110			
L72697-01DUP	DUP	10/30/08 22:52			7.9	7.96	units				0.8	20	
WG254837LCSW12	LCSW	10/30/08 23:12	PCN29627	6		6.06	units	101	90	110			
L72698-04DUP	DUP	10/31/08 0:39			8	8.05	units				0.6	20	
WG254837LCSW15	LCSW	10/31/08 2:23	PCN29627	6		6.17	units	102.8	90	110			

Potassium, dissolved		M200.7 ICP											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	II080818-1	20		20.81	mg/L	104.1	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.9	0.9			
WG254880LFB	LFB	11/04/08 10:49	II081023-4	99.76186		105.79	mg/L	106	85	115			
L72696-03AS	AS	11/04/08 11:40	II081023-4	99.76186	3.5	112.52	mg/L	109.3	85	115			
L72696-03ASD	ASD	11/04/08 11:44	II081023-4	99.76186	3.5	113.25	mg/L	110	85	115	0.65	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72697

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254772</b>													
WG254772PBW	PBW	10/29/08 15:00				U	mg/L		-20	20			
WG254772LCSW	LCSW	10/29/08 15:00	PCN29989	260		256	mg/L	98.5	80	120			
L72698-02DUP	DUP	10/29/08 15:19			2640	2668	mg/L				1.1	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.051	mg/L	102	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05065	mg/L	101.3	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.001	.11272	mg/L	111.7	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.001	.11278	mg/L	111.8	70	130	0.05	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255180</b>													
WG255180ICV	ICV	11/05/08 13:48	II080818-1	100		101.47	mg/L	101.5	95	105			
WG255180ICB	ICB	11/05/08 13:52				U	mg/L		-0.9	0.9			
WG255180LFB	LFB	11/05/08 14:04	II081023-4	98.21624		101.5	mg/L	103.3	85	115			
L72696-01AS	AS	11/05/08 14:21	II081023-4	98.21624	26.4	126.71	mg/L	102.1	85	115			
L72696-01ASD	ASD	11/05/08 14:24	II081023-4	98.21624	26.4	127.18	mg/L	102.6	85	115	0.37	20	
L72697-04AS	AS	11/05/08 14:57	II081023-4	196.43248	194	391.53	mg/L	100.6	85	115			
L72697-04ASD	ASD	11/05/08 15:01	II081023-4	196.43248	194	381.2	mg/L	95.3	85	115	2.67	20	

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254865</b>													
WG254865PBW	PBW	10/30/08 14:37				U	mg/L		-30	30			
WG254865LCSW	LCSW	10/30/08 14:40	WC080910-2	100		95	mg/L	95	80	120			
L72697-04DUP	DUP	10/30/08 15:16			1720	1759	mg/L				2.2	20	
L72698-07DUP	DUP	10/30/08 15:52			1720	1757	mg/L				2.1	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.04956	mg/L	99.1	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.0501		.04912	mg/L	98	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1002	U	.10784	mg/L	107.6	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1002	U	.10806	mg/L	107.8	70	130	0.2	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72697

**Uranium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05075	mg/L	101.5	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05167	mg/L	103.3	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.0325	.15192	mg/L	119.4	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.0325	.15182	mg/L	119.3	70	130	0.07	20	

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254880</b>													
WG254880ICV	ICV	11/04/08 10:34	II080818-1	2		1.946	mg/L	97.3	95	105			
WG254880ICB	ICB	11/04/08 10:37				U	mg/L		-0.03	0.03			
WG254880LFB	LFB	11/04/08 10:49	II081023-4	.5		.519	mg/L	103.8	85	115			
L72696-03AS	AS	11/04/08 11:40	II081023-4	.5	.08	.651	mg/L	114.2	85	115			
L72696-03ASD	ASD	11/04/08 11:44	II081023-4	.5	.08	.626	mg/L	109.2	85	115	3.92	20	
<b>WG255180</b>													
WG255180ICV	ICV	11/05/08 13:48	II080818-1	2		1.961	mg/L	98.1	95	105			
WG255180ICB	ICB	11/05/08 13:52				U	mg/L		-0.03	0.03			
WG255180LFB	LFB	11/05/08 14:04	II081023-4	.5		.523	mg/L	104.6	85	115			
L72696-01AS	AS	11/05/08 14:21	II081023-4	.5	.05	.565	mg/L	103	85	115			
L72696-01ASD	ASD	11/05/08 14:24	II081023-4	.5	.05	.573	mg/L	104.6	85	115	1.41	20	
L72697-04AS	AS	11/05/08 14:57	II081023-4	1	.02	1.205	mg/L	118.5	85	115			MA
L72697-04ASD	ASD	11/05/08 15:01	II081023-4	1	.02	1.06	mg/L	104	85	115	12.8	20	



**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72697**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72697-01</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255078	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72697-02</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255078	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72697-03</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72697-04</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72697-05</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72697-06</b>	WG255180	Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72697-07</b>	WG255180	Zinc, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	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: **L72697**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72697  
Date Received: 10/28/2008  
Received By:  
Date Printed: 10/29/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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**

The requested analyses were not present. The requested analyses was not present on the chain of custody. The samples were entered for the AMBIENT-TB quote per the information present on the sample bags.

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

The client was not contacted.

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (μR/hr)
1549	2.1	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**  
OJ06DZ

ACZ Project ID: L72697  
Date Received: 10/28/2008  
Received By:

**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
L72697-01	IW-18		Y		Y							<input type="checkbox"/>
L72697-02	IW-20		Y		Y							<input type="checkbox"/>
L72697-03	IW-21		Y		Y							<input type="checkbox"/>
L72697-04	IW-22		Y		Y							<input type="checkbox"/>
L72697-05	IW-23		Y		Y							<input type="checkbox"/>
L72697-06	IW-24		Y		Y							<input type="checkbox"/>
L72697-07	DUP102408A		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: \_\_\_\_\_



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-11

ACZ Sample ID: **L72698-01**

Date Sampled: 10/24/08 11:10

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	2260		*	mg/L	50	250	11/18/08 10:17	abm

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-12

ACZ Sample ID: **L72698-02**

Date Sampled: 10/24/08 10:50

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1520			mg/L	20	100	10/30/08 15:33	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-13

ACZ Sample ID: **L72698-03**

Date Sampled: 10/24/08 10:40

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1930			mg/L	50	250	10/30/08 15:36	kah

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-14

ACZ Sample ID: **L72698-04**

Date Sampled: 10/24/08 10:30

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1840			mg/L	10	50	10/30/08 15:39	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-15

ACZ Sample ID: **L72698-05**

Date Sampled: 10/24/08 10:10

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1850			mg/L	50	250	10/30/08 15:43	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-16

ACZ Sample ID: **L72698-06**

Date Sampled: 10/24/08 10:05

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1850		*	mg/L	50	250	11/11/08 12:17	abm

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-17

ACZ Sample ID: **L72698-07**

Date Sampled: 10/24/08 10:00

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720			mg/L	10	50	10/30/08 15:49	kah

**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.

**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.

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72698

**Alkalinity as CaCO3**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837PBW1	PBW	10/30/08 13:26				U	mg/L		-20	20			
WG254837LCSW2	LCSW	10/30/08 13:36	WC081022-2	820.0001		782.5	mg/L	95.4	90	110			
WG254837PBW2	PBW	10/30/08 16:23				U	mg/L		-20	20			
WG254837LCSW5	LCSW	10/30/08 16:34	WC081022-2	820.0001		789.3	mg/L	96.3	90	110			
WG254837PBW3	PBW	10/30/08 19:35				U	mg/L		-20	20			
WG254837LCSW8	LCSW	10/30/08 19:46	WC081022-2	820.0001		792.6	mg/L	96.7	90	110			
WG254837PBW4	PBW	10/30/08 22:58				U	mg/L		-20	20			
WG254837LCSW11	LCSW	10/30/08 23:09	WC081022-2	820.0001		802.3	mg/L	97.8	90	110			
L72698-04DUP	DUP	10/31/08 0:39			120	120.2	mg/L				0.2	20	
L72699-07DUP	DUP	10/31/08 2:07			109	117	mg/L				7.1	20	
WG254837LCSW14	LCSW	10/31/08 2:19	WC081022-2	820.0001		808.5	mg/L	98.6	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		2.044	mg/L	102.2	95	105			
WG255096ICB	ICB	11/05/08 19:21				.043	mg/L		-0.09	0.09			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	1		1.125	mg/L	112.5	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	1	.07	.98	mg/L	91	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	1	.07	1.147	mg/L	107.7	85	115	15.7	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.02		.02093	mg/L	104.7	90	110			
WG255377ICB	ICB	11/07/08 17:43				.00068	mg/L		-0.00088	0.00088			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.01		.00948	mg/L	94.8	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.02	U	.01997	mg/L	99.9	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.02	U	.02238	mg/L	111.9	70	130	11.38	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.02	U	.02024	mg/L	101.2	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.02	U	.01997	mg/L	99.9	70	130	1.34	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05045	mg/L	100.9	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.0011	0.0011			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05187	mg/L	103.7	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.002	.1152	mg/L	113.2	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.002	.1135	mg/L	111.5	70	130	1.49	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1	.002	.1196	mg/L	117.6	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1	.002	.1154	mg/L	113.4	70	130	3.57	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72698

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.9686	mg/L	98.4	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.009	0.009			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	.5		.5129	mg/L	102.6	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	.5	.043	.5012	mg/L	91.6	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	.5	.043	.5313	mg/L	97.7	85	115	5.83	20	

**Beryllium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05009	mg/L	100.2	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05005		.05006	mg/L	100	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1001	U	.10656	mg/L	106.5	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1001	U	.10626	mg/L	106.2	70	130	0.28	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1001	U	.10876	mg/L	108.7	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1001	U	.1058	mg/L	105.7	70	130	2.76	20	

**Cadmium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05097	mg/L	101.9	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05208	mg/L	104.2	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	U	.10614	mg/L	106.1	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	U	.10628	mg/L	106.3	70	130	0.13	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1	U	.1094	mg/L	109.4	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1	U	.10602	mg/L	106	70	130	3.14	20	

**Calcium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	100		102.34	mg/L	102.3	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.6	0.6			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	67.97008		73.47	mg/L	108.1	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	67.97008	230	291.71	mg/L	90.8	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	67.97008	230	298.07	mg/L	100.1	85	115	2.16	20	
<b>WG255522</b>													
WG255522ICV	ICV	11/11/08 19:30	II080818-1	100		100.74	mg/L	100.7	95	105			
WG255522ICB	ICB	11/11/08 19:34				U	mg/L		-0.6	0.6			
WG255522LFB	LFB	11/11/08 19:46	II081110-2	67.97008		71.59	mg/L	105.3	85	115			
L72659-08AS	AS	11/11/08 19:56	II081110-2	67.97008	103	167.64	mg/L	95.1	85	115			
L72659-08ASD	ASD	11/11/08 19:59	II081110-2	67.97008	103	166.36	mg/L	93.2	85	115	0.77	20	
L72718-01AS	AS	11/11/08 20:42	II081110-2	67.97008	229	285.97	mg/L	83.8	85	115			M3
L72718-01ASD	ASD	11/11/08 20:46	II081110-2	67.97008	229	286.51	mg/L	84.6	85	115	0.19	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72698

**Chloride** SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254833</b>													
WG254833ICB	ICB	10/30/08 8:44				U	mg/L		-3	3			
WG254833ICV	ICV	10/30/08 8:44	WI080808-1	54.945		57.5	mg/L	104.7	90	110			
WG254833LFB2	LFB	10/30/08 13:09	WI080818-2	30		32.8	mg/L	109.3	90	110			
WG254833LFB1	LFB	10/30/08 13:24	WI080818-2	30		32.7	mg/L	109	90	110			
L72697-06AS	AS	10/30/08 13:33	10XCL	30	160	193	mg/L	110	90	110			
L72697-07DUP	DUP	10/30/08 13:34			140	140	mg/L				0	20	

**Chromium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		2.091	mg/L	104.6	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.57	mg/L	114	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	U	.532	mg/L	106.4	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	U	.559	mg/L	111.8	85	115	4.95	20	

**Cobalt, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2.002		2.042	mg/L	102	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.561	mg/L	112.2	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	.02	.516	mg/L	99.2	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	.02	.539	mg/L	103.8	85	115	4.36	20	

**Conductivity @25C** SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW1	LCSW	10/30/08 13:27	PCN30288	1408.8		1419	µmhos/cm	100.7	90	110			
WG254837LCSW4	LCSW	10/30/08 16:24	PCN30288	1408.8		1386	µmhos/cm	98.4	90	110			
WG254837LCSW7	LCSW	10/30/08 19:37	PCN30288	1408.8		1388	µmhos/cm	98.5	90	110			
WG254837LCSW10	LCSW	10/30/08 22:59	PCN30288	1408.8		1384	µmhos/cm	98.2	90	110			
L72698-04DUP	DUP	10/31/08 0:39			3310	3300	µmhos/cm				0.3	20	
L72699-07DUP	DUP	10/31/08 2:07			3240	3250	µmhos/cm				0.3	20	
WG254837LCSW13	LCSW	10/31/08 2:09	PCN30288	1408.8		1391	µmhos/cm	98.7	90	110			

**Copper, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.92	mg/L	96	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.03	0.03			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	.5		.516	mg/L	103.2	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	.5	U	.463	mg/L	92.6	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	.5	U	.497	mg/L	99.4	85	115	7.08	20	



FMI Gold & Copper - Sierrita

ACZ Project ID: L72698

Project ID: OJ06DZ

Cyanide, total			M335.4 - Colorimetric w/ distillation											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG255240														
WG255240ICV	ICV	11/06/08 10:39	WI081025-3	.3		.2803	mg/L	93.4	90	110				
WG255240ICB	ICB	11/06/08 10:40				U	mg/L		-0.015	0.015				
WG255091LRB	LRB	11/06/08 10:41				U	mg/L		-0.015	0.015				
WG255091LFB	LFB	11/06/08 10:42	WI081025-7	.2		.1916	mg/L	95.8	90	110				
L72677-01DUP	DUP	11/06/08 10:44			U	U	mg/L				0	20	RA	
L72697-01LFM	LFM	11/06/08 10:45	WI081025-7	.2	.017	.2037	mg/L	93.4	90	110				
L72698-01DUP	DUP	11/06/08 10:54			.006	.0062	mg/L				3.3	20	RA	
L72698-02LFM	LFM	11/06/08 10:56	WI081025-7	.2	.011	.2079	mg/L	98.5	90	110				
Fluoride														
SM4500F-C														
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG255078														
WG255078ICV	ICV	11/04/08 9:29	WC081029-9	2		2.1	mg/L	105	95	105				
WG255078ICB	ICB	11/04/08 9:39				U	mg/L		-0.3	0.3				
WG255135														
WG255135ICV	ICV	11/04/08 15:24	WC081029-9	2		1.95	mg/L	97.5	95	105				
WG255135ICB	ICB	11/04/08 15:32				U	mg/L		-0.3	0.3				
WG255135LFB1	LFB	11/04/08 15:39	WC080912-3	5		5.02	mg/L	100.4	90	110				
L72698-05AS	AS	11/04/08 16:28	WC080912-3	5	.3	3.76	mg/L	69.2	90	110			M2	
L72698-05DUP	DUP	11/04/08 16:30			.3	.27	mg/L				10.5	20	RA	
WG255135LFB2	LFB	11/04/08 17:08	WC080912-3	5		4.93	mg/L	98.6	90	110				
WG255164														
WG255164ICV	ICV	11/06/08 14:10	WC081106-1	2		2.05	mg/L	102.5	95	105				
WG255164ICB	ICB	11/06/08 14:17				U	mg/L		-0.3	0.3				
WG255164LFB1	LFB	11/06/08 14:22	WC080912-3	5		4.98	mg/L	99.6	90	110				
L72630-01AS	AS	11/06/08 14:37	WC080912-3	5	48.4	53.61	mg/L	104.2	90	110				
L72630-01DUP	DUP	11/06/08 14:40			48.4	47.69	mg/L				1.5	20		
L72698-04AS	AS	11/06/08 15:17	WC080912-3	5	.3	4.91	mg/L	92.2	90	110				
L72698-04DUP	DUP	11/06/08 15:20			.3	.3	mg/L				0	20	RA	
WG255164LFB2	LFB	11/06/08 16:04	WC080912-3	5		4.75	mg/L	95	90	110				
Iron, dissolved														
M200.7 ICP														
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
WG255267														
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.948	mg/L	97.4	95	105				
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.06	0.06				
WG255267LFB	LFB	11/06/08 15:52	II081105-2	1		1.104	mg/L	110.4	85	115				
L72699-01AS	AS	11/06/08 16:32	II081105-2	1	.14	1.101	mg/L	96.1	85	115				
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	1	.14	1.152	mg/L	101.2	85	115	4.53	20		

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72698

**Lead, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.04759	mg/L	95.2	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.0476	mg/L	95.2	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.0003	.1034	mg/L	103.1	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.0003	.10378	mg/L	103.5	70	130	0.37	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1	.0003	.10692	mg/L	106.6	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1	.0003	.10364	mg/L	103.3	70	130	3.12	20	

**Magnesium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	100		102.51	mg/L	102.5	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.6	0.6			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	49.96908		53.53	mg/L	107.1	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	49.96908	53.7	105.37	mg/L	103.4	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	49.96908	53.7	108.2	mg/L	109.1	85	115	2.65	20	
<b>WG255522</b>													
WG255522ICV	ICV	11/11/08 19:30	II080818-1	100		100.29	mg/L	100.3	95	105			
WG255522ICB	ICB	11/11/08 19:34				U	mg/L		-0.6	0.6			
WG255522LFB	LFB	11/11/08 19:46	II081110-2	49.96908		51.88	mg/L	103.8	85	115			
L72659-08AS	AS	11/11/08 19:56	II081110-2	49.96908	24.8	77.49	mg/L	105.4	85	115			
L72659-08ASD	ASD	11/11/08 19:59	II081110-2	49.96908	24.8	76.77	mg/L	104	85	115	0.93	20	
L72718-01AS	AS	11/11/08 20:42	II081110-2	49.96908	48	97.37	mg/L	98.8	85	115			
L72718-01ASD	ASD	11/11/08 20:46	II081110-2	49.96908	48	98.84	mg/L	101.7	85	115	1.5	20	

**Manganese, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.9014	mg/L	95.1	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.015	0.015			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	.5		.5425	mg/L	108.5	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	.5	U	.4853	mg/L	97.1	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	.5	U	.5164	mg/L	103.3	85	115	6.21	20	

**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255124</b>													
WG255124ICV	ICV	11/07/08 11:22	II081103-1	.005		.00527	mg/L	105.4	95	105			
WG255124ICB	ICB	11/07/08 11:24				U	mg/L		-0.0002	0.0002			
<b>WG255270</b>													
WG255270LRB	LRB	11/07/08 16:52				U	mg/L		-0.00044	0.00044			
WG255270LFB	LFB	11/07/08 16:54	II081027-2	.002		.00196	mg/L	98	85	115			
L72639-01LFM	LFM	11/07/08 16:58	II081027-2	.002	U	.00198	mg/L	99	85	115			
L72639-01LFMD	LFMD	11/07/08 17:00	II081027-2	.002	U	.00198	mg/L	99	85	115	0	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72698

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		2.018	mg/L	100.9	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.541	mg/L	108.2	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	U	.491	mg/L	98.2	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	U	.538	mg/L	107.6	85	115	9.14	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2.004		1.992	mg/L	99.4	95	105			
WG255096ICB	ICB	11/05/08 19:21				.01	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.4985		.542	mg/L	108.7	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.4985	.01	.505	mg/L	99.3	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.4985	.01	.548	mg/L	107.9	85	115	8.17	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
<b>WG254994</b>													
WG254994ICV	ICV	11/01/08 19:11	WI080916-5	2.416		2.391	mg/L	99	90	110			
WG254994ICB	ICB	11/01/08 19:12				.025	mg/L		-0.06	0.06			
WG254994LFB1	LFB	11/01/08 19:13	WI080913-4	2		2.058	mg/L	102.9	90	110			
L72688-01AS	AS	11/01/08 19:16	WI080913-4	2	.05	2.261	mg/L	110.6	90	110			M1
L72697-01DUP	DUP	11/01/08 19:18			2.17	2.159	mg/L				0.5	20	
L72698-04AS	AS	11/01/08 19:35	WI080913-4	2	1.58	3.865	mg/L	114.3	90	110			M1
L72698-05DUP	DUP	11/01/08 19:37			2.01	2.007	mg/L				0.1	20	
WG254994LFB2	LFB	11/01/08 19:52	WI080913-4	2		1.988	mg/L	99.4	90	110			

**pH (lab)**

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW3	LCSW	10/30/08 13:40	PCN29627	6		6.13	units	102.2	90	110			
WG254837LCSW6	LCSW	10/30/08 16:37	PCN29627	6		6.17	units	102.8	90	110			
WG254837LCSW9	LCSW	10/30/08 19:50	PCN29627	6		6.14	units	102.3	90	110			
WG254837LCSW12	LCSW	10/30/08 23:12	PCN29627	6		6.06	units	101	90	110			
L72698-04DUP	DUP	10/31/08 0:39			8	8.05	units				0.6	20	
L72699-07DUP	DUP	10/31/08 2:07			8.3	8.43	units				1.6	20	
WG254837LCSW15	LCSW	10/31/08 2:23	PCN29627	6		6.17	units	102.8	90	110			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	20		21	mg/L	105	95	105			
WG255096ICB	ICB	11/05/08 19:21				.46	mg/L		-0.9	0.9			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	99.76186		105.81	mg/L	106.1	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	99.76186	10.4	115.54	mg/L	105.4	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	99.76186	10.4	122.54	mg/L	112.4	85	115	5.88	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72698**

Project ID: **OJ06DZ**
**Residue, Filterable (TDS) @180C** SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254772</b>													
WG254772PBW	PBW	10/29/08 15:00				U	mg/L		-20	20			
WG254772LCSW	LCSW	10/29/08 15:00	PCN29989	260		256	mg/L	98.5	80	120			
L72698-02DUP	DUP	10/29/08 15:19			2640	2668	mg/L				1.1	20	
<b>WG254874</b>													
WG254874PBW	PBW	10/30/08 14:50				U	mg/L		-20	20			
WG254874LCSW	LCSW	10/30/08 14:50	PCN29990	260		238	mg/L	91.5	80	120			
L72699-05DUP	DUP	10/30/08 15:00			3110	3132	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
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.051	mg/L	102	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05065	mg/L	101.3	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.001	.11272	mg/L	111.7	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.001	.11278	mg/L	111.8	70	130	0.05	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1	.0008	.11604	mg/L	115.2	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1	.0008	.11724	mg/L	116.4	70	130	1.03	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	100		103.43	mg/L	103.4	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.9	0.9			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	98.21624		105.43	mg/L	107.3	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	98.21624	66.4	162.43	mg/L	97.8	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	98.21624	66.4	170.44	mg/L	105.9	85	115	4.81	20	
<b>WG255522</b>													
WG255522ICV	ICV	11/11/08 19:30	II080818-1	100		100.62	mg/L	100.6	95	105			
WG255522ICB	ICB	11/11/08 19:34				U	mg/L		-0.9	0.9			
WG255522LFB	LFB	11/11/08 19:46	II081110-2	98.21624		100.76	mg/L	102.6	85	115			
L72659-08AS	AS	11/11/08 19:56	II081110-2	98.21624	47.5	146.12	mg/L	100.4	85	115			
L72659-08ASD	ASD	11/11/08 19:59	II081110-2	98.21624	47.5	144.61	mg/L	98.9	85	115	1.04	20	
L72718-01AS	AS	11/11/08 20:42	II081110-2	98.21624	29.8	126.08	mg/L	98	85	115			
L72718-01ASD	ASD	11/11/08 20:46	II081110-2	98.21624	29.8	127.42	mg/L	99.4	85	115	1.06	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72698

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254865</b>													
WG254865PBW	PBW	10/30/08 14:37				U	mg/L		-30	30			
WG254865LCSW	LCSW	10/30/08 14:40	WC080910-2	100		95	mg/L	95	80	120			
L72698-07DUP	DUP	10/30/08 15:52			1720	1757	mg/L				2.1	20	
<b>WG255512</b>													
WG255512PBW	PBW	11/11/08 12:11				15	mg/L		-30	30			
WG255512LCSW	LCSW	11/11/08 12:13	WC080910-2	100		108	mg/L	108	80	120			
L72787-01DUP	DUP	11/11/08 12:36			80	81	mg/L				1.2	20	RA
<b>WG255904</b>													
WG255904PBW	PBW	11/18/08 10:10				U	mg/L		-30	30			
WG255904LCSW	LCSW	11/18/08 10:12	WC080910-2	100		103	mg/L	103	80	120			
L73029-06DUP	DUP	11/18/08 11:02			U	U	mg/L				0	20	RA

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.04956	mg/L	99.1	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.0501		.04912	mg/L	98	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1002	U	.10784	mg/L	107.6	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1002	U	.10806	mg/L	107.8	70	130	0.2	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1002	U	.11112	mg/L	110.9	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1002	U	.10786	mg/L	107.6	70	130	2.98	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255377</b>													
WG255377ICV	ICV	11/07/08 17:40	MS081101-2	.05		.05075	mg/L	101.5	90	110			
WG255377ICB	ICB	11/07/08 17:43				U	mg/L		-0.00022	0.00022			
WG255377LFB	LFB	11/07/08 17:49	MS081003-7	.05		.05167	mg/L	103.3	85	115			
L72697-02AS	AS	11/07/08 17:59	MS081003-7	.1	.0325	.15192	mg/L	119.4	70	130			
L72697-02ASD	ASD	11/07/08 18:02	MS081003-7	.1	.0325	.15182	mg/L	119.3	70	130	0.07	20	
L72698-04AS	AS	11/07/08 18:39	MS081003-7	.1	.0379	.16048	mg/L	122.6	70	130			
L72698-04ASD	ASD	11/07/08 18:42	MS081003-7	.1	.0379	.15848	mg/L	120.6	70	130	1.25	20	

**Zinc, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		1.979	mg/L	99	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.546	mg/L	109.2	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	U	.535	mg/L	107	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	U	.562	mg/L	112.4	85	115	4.92	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72698**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72698-01</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255904	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72698-02</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72698-03</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72698-04</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255164	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72698-05</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
<b>L72698-06</b>	WG255522	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254837	Conductivity @25C	SM2510B	N1	See Case Narrative.
	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254837	pH	SM4500H+ B	N1	See Case Narrative.
	WG255512	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	Total Alkalinity	SM2320B - Titration	N1	See Case Narrative.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72698**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72698-07</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	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: **L72698**

No certification qualifiers associated with this analysis



**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72698  
Date Received: 10/28/2008  
Received By:  
Date Printed: 10/28/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
2435	5.3	17

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**  
OJ06DZ

ACZ Project ID: L72698  
Date Received: 10/28/2008  
Received By:

**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
L72698-01	IW-11		Y		Y							<input type="checkbox"/>
L72698-02	IW-12		Y		Y							<input type="checkbox"/>
L72698-03	IW-13		Y		Y							<input type="checkbox"/>
L72698-04	IW-14		Y		Y							<input type="checkbox"/>
L72698-05	IW-15		Y		Y							<input type="checkbox"/>
L72698-06	IW-16		Y		Y							<input type="checkbox"/>
L72698-07	IW-17		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: \_\_\_\_\_

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

November 13, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72699- SULFATE ONLY

Bill Dorris:

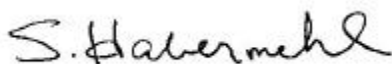
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 28, 2008. This project was assigned to ACZ's project number, L72699. Please reference this number in all future inquiries.

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.

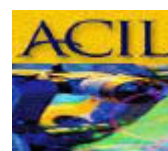
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72699. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, 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: OJ06DZ

Sample ID: IW-1

ACZ Sample ID: **L72699-01**

Date Sampled: 10/24/08 12:55

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	700		*	mg/L	10	50	11/03/08 10:37	gkj

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-2A

ACZ Sample ID: **L72699-02**

Date Sampled: 10/24/08 12:45

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	60		*	mg/L	10	50	11/03/08 10:40	gkj

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-4

ACZ Sample ID: **L72699-03**

Date Sampled: 10/24/08 12:05

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1630		*	mg/L	50	250	11/03/08 10:44	gkj

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-6A

ACZ Sample ID: **L72699-04**

Date Sampled: 10/24/08 11:00

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1930		*	mg/L	50	250	11/03/08 10:47	gkj

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-8

ACZ Sample ID: **L72699-05**

Date Sampled: 10/24/08 12:30

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1890		*	mg/L	50	250	11/03/08 10:50	gkj

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-9

ACZ Sample ID: **L72699-06**

Date Sampled: 10/24/08 12:15

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720		*	mg/L	10	50	11/03/08 10:53	gkj

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-10

ACZ Sample ID: **L72699-07**

Date Sampled: 10/24/08 11:40

Date Received: 10/28/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1730		*	mg/L	10	50	11/03/08 10:57	gkj

**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.

**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.

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72699

**Alkalinity as CaCO3**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837PBW1	PBW	10/30/08 13:26				U	mg/L		-20	20			
WG254837LCSW2	LCSW	10/30/08 13:36	WC081022-2	820.0001		782.5	mg/L	95.4	90	110			
WG254837PBW2	PBW	10/30/08 16:23				U	mg/L		-20	20			
WG254837LCSW5	LCSW	10/30/08 16:34	WC081022-2	820.0001		789.3	mg/L	96.3	90	110			
WG254837PBW3	PBW	10/30/08 19:35				U	mg/L		-20	20			
WG254837LCSW8	LCSW	10/30/08 19:46	WC081022-2	820.0001		792.6	mg/L	96.7	90	110			
WG254837PBW4	PBW	10/30/08 22:58				U	mg/L		-20	20			
WG254837LCSW11	LCSW	10/30/08 23:09	WC081022-2	820.0001		802.3	mg/L	97.8	90	110			
L72699-07DUP	DUP	10/31/08 2:07			109	117	mg/L				7.1	20	
WG254837LCSW14	LCSW	10/31/08 2:19	WC081022-2	820.0001		808.5	mg/L	98.6	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		2.044	mg/L	102.2	95	105			
WG255096ICB	ICB	11/05/08 19:21				.043	mg/L		-0.09	0.09			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	1		1.125	mg/L	112.5	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	1	.07	.98	mg/L	91	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	1	.07	1.147	mg/L	107.7	85	115	15.7	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	1	.09	1.126	mg/L	103.6	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	1	.09	1.125	mg/L	103.5	85	115	0.09	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.02		.02078	mg/L	103.9	90	110			
WG255390ICB	ICB	11/09/08 1:04				U	mg/L		-0.00088	0.00088			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.01		.00976	mg/L	97.6	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.01	U	.00972	mg/L	97.2	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.01	U	.00977	mg/L	97.7	70	130	0.51	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.05228	mg/L	104.6	90	110			
WG255390ICB	ICB	11/09/08 1:04				U	mg/L		-0.0011	0.0011			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.05		.04985	mg/L	99.7	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.05	.0061	.05775	mg/L	103.3	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.05	.0061	.05758	mg/L	103	70	130	0.29	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72699

**Barium, dissolved****M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.9686	mg/L	98.4	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.009	0.009			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	.5		.5129	mg/L	102.6	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	.5	.043	.5012	mg/L	91.6	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	.5	.043	.5313	mg/L	97.7	85	115	5.83	20	
L72701-01AS	AS	11/06/08 17:12	II081105-2	.5	U	.5192	mg/L	103.8	85	115			
L72701-01ASD	ASD	11/06/08 17:15	II081105-2	.5	U	.5174	mg/L	103.5	85	115	0.35	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.04976	mg/L	99.5	90	110			
WG255390ICB	ICB	11/09/08 1:04				U	mg/L		-0.00022	0.00022			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.05005		.0492	mg/L	98.3	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.05005	U	.05094	mg/L	101.8	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.05005	U	.04948	mg/L	98.9	70	130	2.91	20	
<b>WG255450</b>													
WG255450ICV	ICV	11/10/08 22:52	MS081101-2	.05		.05064	mg/L	101.3	90	110			
WG255450ICB	ICB	11/10/08 22:57				U	mg/L		-0.00022	0.00022			
WG255450LFB	LFB	11/10/08 23:03	MS081108-3	.05005		.04872	mg/L	97.3	85	115			
L72699-03AS	AS	11/10/08 23:13	MS081108-3	.1001	U	.09958	mg/L	99.5	70	130			
L72699-03ASD	ASD	11/10/08 23:18	MS081108-3	.1001	U	.09906	mg/L	99	70	130	0.52	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.0502	mg/L	100.4	90	110			
WG255390ICB	ICB	11/09/08 1:04				.00011	mg/L		-0.00022	0.00022			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.05		.04819	mg/L	96.4	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.05	U	.04727	mg/L	94.5	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.05	U	.04719	mg/L	94.4	70	130	0.17	20	

**Calcium, dissolved****M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	100		102.34	mg/L	102.3	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.6	0.6			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	67.97008		73.47	mg/L	108.1	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	67.97008	230	291.71	mg/L	90.8	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	67.97008	230	298.07	mg/L	100.1	85	115	2.16	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	67.97008	12.8	84.5	mg/L	105.5	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	67.97008	12.8	84.93	mg/L	106.1	85	115	0.51	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72699**

Project ID: **OJ06DZ**
**Chloride** SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254882</b>													
WG254882ICB	ICB	10/30/08 8:44				U	mg/L		-3	3			
WG254882ICV	ICV	10/30/08 8:44	WI080818-1	54.945		57.5	mg/L	104.7	90	110			
WG254882LFB1	LFB	10/30/08 14:45	WI080818-2	30		32.5	mg/L	108.3	90	110			
L72688-01AS	AS	10/30/08 14:45	WI080818-2	300	30	319	mg/L	96.3	90	110			
L72699-01DUP	DUP	10/30/08 14:45			72	71.5	mg/L				0.7	20	
WG254882LFB2	LFB	10/30/08 14:49	WI080818-2	30		33.1	mg/L	110.3	90	110			
WG254882LFB2	LFB	10/30/08 15:22	WI080818-2	30		32.5	mg/L	108.3	90	110			

**Chromium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		2.091	mg/L	104.6	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.57	mg/L	114	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	U	.532	mg/L	106.4	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	U	.559	mg/L	111.8	85	115	4.95	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	.5	.02	.567	mg/L	109.4	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	.5	.02	.574	mg/L	110.8	85	115	1.23	20	

**Cobalt, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2.002		2.042	mg/L	102	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.561	mg/L	112.2	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	.02	.516	mg/L	99.2	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	.02	.539	mg/L	103.8	85	115	4.36	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	.5	U	.543	mg/L	108.6	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	.5	U	.543	mg/L	108.6	85	115	0	20	

**Conductivity @25C** SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW1	LCSW	10/30/08 13:27	PCN30288	1408.8		1419	µmhos/cm	100.7	90	110			
WG254837LCSW4	LCSW	10/30/08 16:24	PCN30288	1408.8		1386	µmhos/cm	98.4	90	110			
WG254837LCSW7	LCSW	10/30/08 19:37	PCN30288	1408.8		1388	µmhos/cm	98.5	90	110			
WG254837LCSW10	LCSW	10/30/08 22:59	PCN30288	1408.8		1384	µmhos/cm	98.2	90	110			
L72699-07DUP	DUP	10/31/08 2:07			3240	3250	µmhos/cm				0.3	20	
WG254837LCSW13	LCSW	10/31/08 2:09	PCN30288	1408.8		1391	µmhos/cm	98.7	90	110			

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72699

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.92	mg/L	96	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.03	0.03			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	.5		.516	mg/L	103.2	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	.5	U	.463	mg/L	92.6	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	.5	U	.497	mg/L	99.4	85	115	7.08	20	
L72701-01AS	AS	11/06/08 17:12	II081105-2	.5	U	.522	mg/L	104.4	85	115			
L72701-01ASD	ASD	11/06/08 17:15	II081105-2	.5	U	.521	mg/L	104.2	85	115	0.19	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255240</b>													
WG255240ICV	ICV	11/06/08 10:39	WI081025-3	.3		.2803	mg/L	93.4	90	110			
WG255240ICB	ICB	11/06/08 10:40				U	mg/L		-0.015	0.015			
WG255091LRB	LRB	11/06/08 10:41				U	mg/L		-0.015	0.015			
WG255091LFB	LFB	11/06/08 10:42	WI081025-7	.2		.1916	mg/L	95.8	90	110			
L72698-01DUP	DUP	11/06/08 10:54			.006	.0062	mg/L				3.3	20	RA
L72698-02LFM	LFM	11/06/08 10:56	WI081025-7	.2	.011	.2079	mg/L	98.5	90	110			
<b>WG255259</b>													
WG255259ICV	ICV	11/06/08 11:15	WI081025-3	.3		.2865	mg/L	95.5	90	110			
WG255259ICB	ICB	11/06/08 11:16				U	mg/L		-0.015	0.015			
WG255160LRB	LRB	11/06/08 11:17				U	mg/L		-0.015	0.015			
WG255160LFB	LFB	11/06/08 11:18	WI081025-7	.2		.1909	mg/L	95.5	90	110			
L72694-01DUP	DUP	11/06/08 11:19			U	U	mg/L				0	20	RA
L72694-02LFM	LFM	11/06/08 11:21	WI081025-7	.2	U	.1925	mg/L	96.3	90	110			
L72709-04DUP	DUP	11/06/08 11:31			U	U	mg/L				0	20	RA
L72709-05LFM	LFM	11/06/08 11:33	WI081025-7	.2	U	.1908	mg/L	95.4	90	110			

**Fluoride**

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255078</b>													
WG255078ICV	ICV	11/04/08 9:29	WC081029-9	2		2.1	mg/L	105	95	105			
WG255078ICB	ICB	11/04/08 9:39				U	mg/L		-0.3	0.3			
<b>WG255135</b>													
WG255135ICV	ICV	11/04/08 15:24	WC081029-9	2		1.95	mg/L	97.5	95	105			
WG255135ICB	ICB	11/04/08 15:32				U	mg/L		-0.3	0.3			
WG255135LFB1	LFB	11/04/08 15:39	WC080912-3	5		5.02	mg/L	100.4	90	110			
L72698-05AS	AS	11/04/08 16:28	WC080912-3	5	.3	3.76	mg/L	69.2	90	110			M2
L72698-05DUP	DUP	11/04/08 16:30			.3	.27	mg/L				10.5	20	RA
WG255135LFB2	LFB	11/04/08 17:08	WC080912-3	5		4.93	mg/L	98.6	90	110			

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72699**Project ID: **OJ06DZ**

Iron, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.948	mg/L	97.4	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.06	0.06			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	1		1.104	mg/L	110.4	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	1	.14	1.101	mg/L	96.1	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	1	.14	1.152	mg/L	101.2	85	115	4.53	20	
L72701-01AS	AS	11/06/08 17:12	II081105-2	1	.04	1.189	mg/L	114.9	85	115			
L72701-01ASD	ASD	11/06/08 17:15	II081105-2	1	.04	1.125	mg/L	108.5	85	115	5.53	20	
Lead, dissolved					M200.8 ICP-MS								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.04813	mg/L	96.3	90	110			
WG255390ICB	ICB	11/09/08 1:04				.00018	mg/L		-0.00022	0.00022			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.05		.04519	mg/L	90.4	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.05	.0009	.04502	mg/L	88.2	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.05	.0009	.04416	mg/L	86.5	70	130	1.93	20	
Magnesium, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	100		102.51	mg/L	102.5	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.6	0.6			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	49.96908		53.53	mg/L	107.1	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	49.96908	53.7	105.37	mg/L	103.4	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	49.96908	53.7	108.2	mg/L	109.1	85	115	2.65	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	49.96908	2.6	52.38	mg/L	99.6	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	49.96908	2.6	52.42	mg/L	99.7	85	115	0.08	20	
Manganese, dissolved					M200.7 ICP								
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	II080818-1	2		1.9014	mg/L	95.1	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.015	0.015			
WG255267LFB	LFB	11/06/08 15:52	II081105-2	.5		.5425	mg/L	108.5	85	115			
L72699-01AS	AS	11/06/08 16:32	II081105-2	.5	U	.4853	mg/L	97.1	85	115			
L72699-01ASD	ASD	11/06/08 16:36	II081105-2	.5	U	.5164	mg/L	103.3	85	115	6.21	20	
L72701-01AS	AS	11/06/08 17:12	II081105-2	.5	U	.5519	mg/L	110.4	85	115			
L72701-01ASD	ASD	11/06/08 17:15	II081105-2	.5	U	.5511	mg/L	110.2	85	115	0.15	20	



**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72699**Project ID: **OJ06DZ****Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255124</b>													
WG255124ICV	ICV	11/07/08 11:22	I1081103-1	.005		.00527	mg/L	105.4	95	105			
WG255124ICB	ICB	11/07/08 11:24				U	mg/L		-0.0002	0.0002			
<b>WG255270</b>													
WG255270LRB	LRB	11/07/08 16:52				U	mg/L		-0.00044	0.00044			
WG255270LFB	LFB	11/07/08 16:54	I1081027-2	.002		.00196	mg/L	98	85	115			
L72639-01LFM	LFM	11/07/08 16:58	I1081027-2	.002	U	.00198	mg/L	99	85	115			
L72639-01LFMD	LFMD	11/07/08 17:00	I1081027-2	.002	U	.00198	mg/L	99	85	115	0	20	
L72699-03LFM	LFM	11/07/08 17:31	I1081027-2	.002	U	.00206	mg/L	103	85	115			
L72699-03LFMD	LFMD	11/07/08 17:33	I1081027-2	.002	U	.00204	mg/L	102	85	115	0.98	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	I1080818-1	2		2.018	mg/L	100.9	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	I1081023-4	.5		.541	mg/L	108.2	85	115			
L72699-01AS	AS	11/05/08 20:04	I1081023-4	.5	U	.491	mg/L	98.2	85	115			
L72699-01ASD	ASD	11/05/08 20:14	I1081023-4	.5	U	.538	mg/L	107.6	85	115	9.14	20	
L72701-01AS	AS	11/05/08 20:41	I1081023-4	.5	.05	.569	mg/L	103.8	85	115			
L72701-01ASD	ASD	11/05/08 20:44	I1081023-4	.5	.05	.585	mg/L	107	85	115	2.77	20	
<b>WG255267</b>													
WG255267ICV	ICV	11/06/08 15:34	I1080818-1	2		1.905	mg/L	95.3	95	105			
WG255267ICB	ICB	11/06/08 15:38				U	mg/L		-0.03	0.03			
WG255267LFB	LFB	11/06/08 15:52	I1081105-2	.5		.52	mg/L	104	85	115			
L72699-01AS	AS	11/06/08 16:32	I1081105-2	.5	.03	.453	mg/L	84.6	85	115			
L72699-01ASD	ASD	11/06/08 16:36	I1081105-2	.5	.03	.485	mg/L	91	85	115	6.82	20	
L72701-01AS	AS	11/06/08 17:12	I1081105-2	.5	.05	.56	mg/L	102	85	115			
L72701-01ASD	ASD	11/06/08 17:15	I1081105-2	.5	.05	.554	mg/L	100.8	85	115	1.08	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	I1080818-1	2.004		1.992	mg/L	99.4	95	105			
WG255096ICB	ICB	11/05/08 19:21				.01	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	I1081023-4	.4985		.542	mg/L	108.7	85	115			
L72699-01AS	AS	11/05/08 20:04	I1081023-4	.4985	.01	.505	mg/L	99.3	85	115			
L72699-01ASD	ASD	11/05/08 20:14	I1081023-4	.4985	.01	.548	mg/L	107.9	85	115	8.17	20	
L72701-01AS	AS	11/05/08 20:41	I1081023-4	.4985	.02	.542	mg/L	104.7	85	115			
L72701-01ASD	ASD	11/05/08 20:44	I1081023-4	.4985	.02	.533	mg/L	102.9	85	115	1.67	20	

FMI Gold & Copper - Sierrita

Project ID: OJ06DZ

ACZ Project ID: L72699

### Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254994</b>													
WG254994ICV	ICV	11/01/08 19:11	WI080916-5	2.416		2.391	mg/L	99	90	110			
WG254994ICB	ICB	11/01/08 19:12				.025	mg/L		-0.06	0.06			
WG254994LFB1	LFB	11/01/08 19:13	WI080913-4	2		2.058	mg/L	102.9	90	110			
L72698-04AS	AS	11/01/08 19:35	WI080913-4	2	1.58	3.865	mg/L	114.3	90	110			M1
L72698-05DUP	DUP	11/01/08 19:37			2.01	2.007	mg/L				0.1	20	
WG254994LFB2	LFB	11/01/08 19:52	WI080913-4	2		1.988	mg/L	99.4	90	110			
L72699-07AS	AS	11/01/08 19:55	WI080913-4	2	1.12	3.301	mg/L	109.1	90	110			
L72700-01DUP	DUP	11/01/08 19:57			.18	.177	mg/L				1.7	20	RA

### pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254837</b>													
WG254837LCSW3	LCSW	10/30/08 13:40	PCN29627	6		6.13	units	102.2	90	110			
WG254837LCSW6	LCSW	10/30/08 16:37	PCN29627	6		6.17	units	102.8	90	110			
WG254837LCSW9	LCSW	10/30/08 19:50	PCN29627	6		6.14	units	102.3	90	110			
WG254837LCSW12	LCSW	10/30/08 23:12	PCN29627	6		6.06	units	101	90	110			
L72699-07DUP	DUP	10/31/08 2:07			8.3	8.43	units				1.6	20	
WG254837LCSW15	LCSW	10/31/08 2:23	PCN29627	6		6.17	units	102.8	90	110			

### Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	20		21	mg/L	105	95	105			
WG255096ICB	ICB	11/05/08 19:21				.46	mg/L		-0.9	0.9			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	99.76186		105.81	mg/L	106.1	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	99.76186	10.4	115.54	mg/L	105.4	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	99.76186	10.4	122.54	mg/L	112.4	85	115	5.88	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	99.76186	2.9	112.28	mg/L	109.6	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	99.76186	2.9	112.51	mg/L	109.9	85	115	0.2	20	

### Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG254874</b>													
WG254874PBW	PBW	10/30/08 14:50				U	mg/L		-20	20			
WG254874LCSW	LCSW	10/30/08 14:50	PCN29990	260		238	mg/L	91.5	80	120			
L72699-05DUP	DUP	10/30/08 15:00			3110	3132	mg/L				0.7	20	
L72746-05DUP	DUP	10/30/08 15:09			220	186	mg/L				16.7	20	

### Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.0517	mg/L	103.4	90	110			
WG255390ICB	ICB	11/09/08 1:04				.00012	mg/L		-0.00022	0.00022			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.05		.04907	mg/L	98.1	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.05	.0005	.05196	mg/L	102.9	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.05	.0005	.04942	mg/L	97.8	70	130	5.01	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72699

Project ID: OJ06DZ

### Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	100		103.43	mg/L	103.4	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.9	0.9			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	98.21624		105.43	mg/L	107.3	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	98.21624	66.4	162.43	mg/L	97.8	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	98.21624	66.4	170.44	mg/L	105.9	85	115	4.81	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	98.21624	174	271.86	mg/L	99.6	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	98.21624	174	272.6	mg/L	100.4	85	115	0.27	20	

### Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255024</b>													
WG255024PBW	PBW	11/03/08 10:31				U	mg/L		-30	30			
WG255024LCSW	LCSW	11/03/08 10:34	WC080910-2	100		95	mg/L	95	80	120			
L72709-02DUP	DUP	11/03/08 11:10			30	35	mg/L				15.4	20	RA

### Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.05033	mg/L	100.7	90	110			
WG255390ICB	ICB	11/09/08 1:04				.00013	mg/L		-0.00022	0.00022			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.0501		.04657	mg/L	93	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.0501	U	.04604	mg/L	91.9	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.0501	U	.04569	mg/L	91.2	70	130	0.76	20	

### Uranium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255390</b>													
WG255390ICV	ICV	11/09/08 0:58	MS081101-2	.05		.0471	mg/L	94.2	90	110			
WG255390ICB	ICB	11/09/08 1:04				U	mg/L		-0.00022	0.00022			
WG255390LFB	LFB	11/09/08 1:14	MS081003-7	.05		.04481	mg/L	89.6	85	115			
L72699-02AS	AS	11/09/08 1:30	MS081003-7	.05	.002	.04734	mg/L	90.7	70	130			
L72699-02ASD	ASD	11/09/08 1:35	MS081003-7	.05	.002	.04675	mg/L	89.5	70	130	1.25	20	

### Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255096</b>													
WG255096ICV	ICV	11/05/08 19:17	II080818-1	2		1.979	mg/L	99	95	105			
WG255096ICB	ICB	11/05/08 19:21				U	mg/L		-0.03	0.03			
WG255096LFB	LFB	11/05/08 19:34	II081023-4	.5		.546	mg/L	109.2	85	115			
L72699-01AS	AS	11/05/08 20:04	II081023-4	.5	U	.535	mg/L	107	85	115			
L72699-01ASD	ASD	11/05/08 20:14	II081023-4	.5	U	.562	mg/L	112.4	85	115	4.92	20	
L72701-01AS	AS	11/05/08 20:41	II081023-4	.5	.05	.602	mg/L	110.4	85	115			
L72701-01ASD	ASD	11/05/08 20:44	II081023-4	.5	.05	.607	mg/L	111.4	85	115	0.83	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72699**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72699-01</b>	WG255390	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [ $< \text{MDL}$ ].
	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG254994	Nitrate/Nitrite as N	M353.2 - H <sub>2</sub> SO <sub>4</sub> preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255024	Sulfate	SM4500 SO <sub>4</sub> -D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
<b>L72699-02</b>	WG255390	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [ $< \text{MDL}$ ].
	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG254994	Nitrate/Nitrite as N	M353.2 - H <sub>2</sub> SO <sub>4</sub> preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255024	Sulfate	SM4500 SO <sub>4</sub> -D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
<b>L72699-03</b>	WG255240	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG254994	Nitrate/Nitrite as N	M353.2 - H <sub>2</sub> SO <sub>4</sub> preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255024	Sulfate	SM4500 SO <sub>4</sub> -D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
<b>L72699-04</b>	WG255259	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).
	WG254994	Nitrate/Nitrite as N	M353.2 - H <sub>2</sub> SO <sub>4</sub> preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255024	Sulfate	SM4500 SO <sub>4</sub> -D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\text{x MDL}$ ).

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72699**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72699-05</b>	WG254837	Conductivity @25C	SM2510B	N1	See Case Narrative.
	WG255259	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG254837	pH	SM4500H+ B	N1	See Case Narrative.
	WG255024	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254837	Total Alkalinity	SM2320B - Titration	N1	See Case Narrative.
<b>L72699-06</b>	WG255259	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255024	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72699-07</b>	WG255160	Cyanide, total	M335.4 - Manual Distillation	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG255259		M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255135	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG254994	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255024	Sulfate	SM4500 SO4-D	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: **L72699**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72699  
Date Received: 10/28/2008  
Received By:  
Date Printed: 10/28/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
2248	2.5	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**  
OJ06DZ

ACZ Project ID: L72699  
Date Received: 10/28/2008  
Received By:

**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
L72699-01	IW-1		Y		Y							<input type="checkbox"/>
L72699-02	IW-2A		Y		Y							<input type="checkbox"/>
L72699-03	IW-4		Y		Y							<input type="checkbox"/>
L72699-04	IW-6A		Y		Y							<input type="checkbox"/>
L72699-05	IW-8		Y		Y							<input type="checkbox"/>
L72699-06	IW-9		Y		Y							<input type="checkbox"/>
L72699-07	IW-10		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: \_\_\_\_\_



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

November 21, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72698- SULFATE ONLY

Bill Dorris:

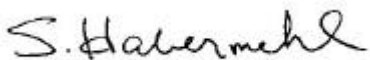
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 28, 2008. This project was assigned to ACZ's project number, L72698. Please reference this number in all future inquiries.

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.

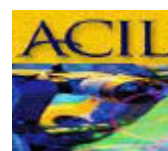
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72698. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, 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.



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

November 14, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72758- SULFATE ONLY

Bill Dorris:

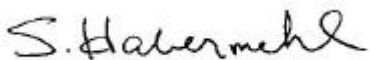
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 30, 2008. This project was assigned to ACZ's project number, L72758. Please reference this number in all future inquiries.

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.

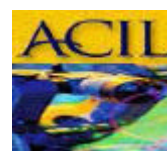
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72758. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute. Except as noted, 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: OJ06DZ

Sample ID: IW-3A

ACZ Sample ID: **L72758-01**

Date Sampled: 10/27/08 13:05

Date Received: 10/30/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1450			mg/L	10	50	11/04/08 10:42	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: IW-5

ACZ Sample ID: **L72758-02**

Date Sampled: 10/27/08 13:20

Date Received: 10/30/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1720			mg/L	10	50	11/04/08 10:44	kah

**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.

## 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.

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72758**Project ID: **OJ06DZ****Alkalinity as CaCO<sub>3</sub>**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255107</b>													
WG255107PBW1	PBW	11/04/08 15:58				16.2	mg/L		-20	20			
WG255107LCSW2	LCSW	11/04/08 16:09	WC081022-2	820.0001		820.1	mg/L	100	90	110			
WG255107PBW2	PBW	11/04/08 18:49				U	mg/L		-20	20			
WG255107LCSW5	LCSW	11/04/08 19:00	WC081022-2	820.0001		819.7	mg/L	100	90	110			
L72761-01DUP	DUP	11/04/08 20:31			141	142.2	mg/L				0.8	20	
WG255107PBW3	PBW	11/04/08 22:05				U	mg/L		-20	20			
WG255107LCSW8	LCSW	11/04/08 22:16	WC081022-2	820.0001		828.5	mg/L	101	90	110			
WG255107PBW4	PBW	11/05/08 0:17				U	mg/L		-20	20			
WG255107LCSW11	LCSW	11/05/08 0:29	WC081022-2	820.0001		826.3	mg/L	100.8	90	110			
WG255107LCSW14	LCSW	11/05/08 2:55	WC081022-2	820.0001		833.4	mg/L	101.6	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	2		2.038	mg/L	101.9	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.09	0.09			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	1		.996	mg/L	99.6	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	1	.03	1.092	mg/L	106.2	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	1	.03	1.138	mg/L	110.8	85	115	4.13	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.02		.02082	mg/L	104.1	90	110			
WG255392ICB	ICB	11/08/08 15:56				.00048	mg/L		-0.00088	0.00088			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.01		.00958	mg/L	95.8	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.01	U	.00891	mg/L	89.1	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.01	U	.00928	mg/L	92.8	70	130	4.07	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.05072	mg/L	101.4	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.0011	0.0011			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.05		.04784	mg/L	95.7	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.05	.0259	.0804	mg/L	109	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.05	.0259	.08101	mg/L	110.2	70	130	0.76	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255326</b>													
WG255326ICV	ICV	11/07/08 12:51	II080818-1	2		2.0107	mg/L	100.5	95	105			
WG255326ICB	ICB	11/07/08 12:55				U	mg/L		-0.009	0.009			
WG255326LFB	LFB	11/07/08 13:08	II081105-2	.5		.5029	mg/L	100.6	85	115			
L72724-03AS	AS	11/07/08 14:08	II081105-2	.5	.033	.5208	mg/L	97.6	85	115			
L72724-03ASD	ASD	11/07/08 14:11	II081105-2	.5	.033	.5248	mg/L	98.4	85	115	0.77	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72758

Project ID: OJ06DZ

### Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.04913	mg/L	98.3	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.00022	0.00022			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.05005		.0456	mg/L	91.1	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.05005	U	.04976	mg/L	99.4	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.05005	U	.05053	mg/L	101	70	130	1.54	20	

### Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.05073	mg/L	101.5	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.00022	0.00022			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.05		.04776	mg/L	95.5	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.05	U	.05071	mg/L	101.4	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.05	U	.05087	mg/L	101.7	70	130	0.32	20	

### Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	I1080818-1	100		98.25	mg/L	98.3	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.6	0.6			
WG255189LFB	LFB	11/05/08 22:02	I1081023-4	67.97008		68.2	mg/L	100.3	85	115			
L72745-04AS	AS	11/05/08 22:56	I1081023-4	67.97008	280	334.93	mg/L	80.8	85	115			M3
L72745-04ASD	ASD	11/05/08 23:00	I1081023-4	67.97008	280	331.66	mg/L	76	85	115	0.98	20	M3

### Chloride

SM4500CL-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255258</b>													
WG255258ICB	ICB	11/06/08 11:08				U	mg/L		-3	3			
WG255258ICV	ICV	11/06/08 11:08	WI081106-1	54.835		58	mg/L	105.8	90	110			
WG255258LFB1	LFB	11/06/08 12:32	WI080818-2	30		32.5	mg/L	108.3	90	110			
WG255258LFB2	LFB	11/06/08 12:36	WI080818-2	30		31.2	mg/L	104	90	110			
L72758-01AS	AS	11/06/08 13:01	10XCL	30	110	144	mg/L	113.3	90	110			M1
L72758-02DUP	DUP	11/06/08 13:03			170	169	mg/L				0.6	20	

### Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	I1080818-1	2		1.951	mg/L	97.6	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.03	0.03			
WG255189LFB	LFB	11/05/08 22:02	I1081023-4	.5		.481	mg/L	96.2	85	115			
L72745-04AS	AS	11/05/08 22:56	I1081023-4	.5	U	.512	mg/L	102.4	85	115			
L72745-04ASD	ASD	11/05/08 23:00	I1081023-4	.5	U	.5	mg/L	100	85	115	2.37	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72758

**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	2.002		1.98	mg/L	98.9	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.03	0.03			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	.5		.504	mg/L	100.8	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	.5	.02	.537	mg/L	103.4	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	.5	.02	.518	mg/L	99.6	85	115	3.6	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255107</b>													
WG255107LCSW1	LCSW	11/04/08 15:59	PCN30873	1408.8		1386	µmhos/cm	98.4	90	110			
WG255107LCSW4	LCSW	11/04/08 18:50	PCN30873	1408.8		1407	µmhos/cm	99.9	90	110			
L72761-01DUP	DUP	11/04/08 20:31			275	275	µmhos/cm				0	20	
WG255107LCSW7	LCSW	11/04/08 22:06	PCN30873	1408.8		1351	µmhos/cm	95.9	90	110			
WG255107LCSW10	LCSW	11/05/08 0:18	PCN30873	1408.8		1411	µmhos/cm	100.2	90	110			
WG255107LCSW13	LCSW	11/05/08 2:44	PCN30873	1408.8		1391	µmhos/cm	98.7	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	2		1.978	mg/L	98.9	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.03	0.03			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	.5		.507	mg/L	101.4	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	.5	U	.552	mg/L	110.4	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	.5	U	.525	mg/L	105	85	115	5.01	20	

**Cyanide, total**

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255314</b>													
WG255314ICV	ICV	11/06/08 20:04	WI081025-3	.3		.2923	mg/L	97.4	90	110			
WG255314ICB	ICB	11/06/08 20:05				U	mg/L		-0.015	0.015			
<b>WG255315</b>													
WG255315ICV	ICV	11/06/08 20:38	WI081025-3	.3		.2926	mg/L	97.5	90	110			
WG255315ICB	ICB	11/06/08 20:38				U	mg/L		-0.015	0.015			
WG255245LRB	LRB	11/06/08 20:39				U	mg/L		-0.015	0.015			
WG255245LFB	LFB	11/06/08 20:40	WI081025-7	.2		.1998	mg/L	99.9	90	110			
L72758-01DUP	DUP	11/06/08 20:44			.054	.055	mg/L				1.8	20	
L72758-02LFM	LFM	11/06/08 20:45	WI081025-7	.2	.007	.2121	mg/L	102.6	90	110			



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72758

**Fluoride** SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255164</b>													
WG255164ICV	ICV	11/06/08 14:10	WC081106-1	2		2.05	mg/L	102.5	95	105			
WG255164ICB	ICB	11/06/08 14:17				U	mg/L		-0.3	0.3			
WG255164LFB1	LFB	11/06/08 14:22	WC080912-3	5		4.98	mg/L	99.6	90	110			
L72698-04AS	AS	11/06/08 15:17	WC080912-3	5	.3	4.91	mg/L	92.2	90	110			
L72698-04DUP	DUP	11/06/08 15:20			.3	.3	mg/L				0	20	RA
WG255164LFB2	LFB	11/06/08 16:04	WC080912-3	5		4.75	mg/L	95	90	110			

**Iron, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	2		1.975	mg/L	98.8	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.06	0.06			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	1		1.027	mg/L	102.7	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	1	.13	1.209	mg/L	107.9	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	1	.13	1.16	mg/L	103	85	115	4.14	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.04689	mg/L	93.8	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.00022	0.00022			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.05		.04484	mg/L	89.7	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.05	U	.04607	mg/L	92.1	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.05	U	.04698	mg/L	94	70	130	1.96	20	

**Magnesium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	100		100.34	mg/L	100.3	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.6	0.6			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	49.96908		50.48	mg/L	101	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	49.96908	47.9	95.36	mg/L	95	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	49.96908	47.9	97.3	mg/L	98.9	85	115	2.01	20	

**Manganese, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	2		1.9614	mg/L	98.1	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.015	0.015			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	.5		.529	mg/L	105.8	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	.5	2.7	3.1311	mg/L	86.2	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	.5	2.7	3.0391	mg/L	67.8	85	115	2.98	20	M3

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72758**Project ID: **OJ06DZ****Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255124</b>													
WG255124ICV	ICV	11/07/08 11:22	I1081103-1	.005		.00527	mg/L	105.4	95	105			
WG255124ICB	ICB	11/07/08 11:24				U	mg/L		-0.0002	0.0002			
<b>WG255272</b>													
WG255272LRB	LRB	11/07/08 19:25				U	mg/L		-0.00044	0.00044			
WG255272LFB	LFB	11/07/08 19:27	I1081027-2	.002		.00193	mg/L	96.5	85	115			
L72677-01LFM	LFM	11/07/08 19:32	I1081027-2	.002	U	.00193	mg/L	96.5	85	115			
L72677-01LFMD	LFMD	11/07/08 19:34	I1081027-2	.002	U	.00197	mg/L	98.5	85	115	2.05	20	
L72758-02LFM	LFM	11/07/08 20:11	I1081027-2	.002	U	.002	mg/L	100	85	115			
L72758-02LFMD	LFMD	11/07/08 20:13	I1081027-2	.002	U	.00204	mg/L	102	85	115	1.98	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	I1080818-1	2		1.966	mg/L	98.3	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.03	0.03			
WG255189LFB	LFB	11/05/08 22:02	I1081023-4	.5		.506	mg/L	101.2	85	115			
L72745-04AS	AS	11/05/08 22:56	I1081023-4	.5	U	.477	mg/L	95.4	85	115			
L72745-04ASD	ASD	11/05/08 23:00	I1081023-4	.5	U	.52	mg/L	104	85	115	8.63	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	I1080818-1	2.004		1.905	mg/L	95.1	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.03	0.03			
WG255189LFB	LFB	11/05/08 22:02	I1081023-4	.4985		.491	mg/L	98.5	85	115			
L72745-04AS	AS	11/05/08 22:56	I1081023-4	.4985	.04	.542	mg/L	100.7	85	115			
L72745-04ASD	ASD	11/05/08 23:00	I1081023-4	.4985	.04	.523	mg/L	96.9	85	115	3.57	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
<b>WG255219</b>													
WG255219ICV	ICV	11/05/08 19:45	W1080916-5	2.416		2.392	mg/L	99	90	110			
WG255219ICB	ICB	11/05/08 19:47				U	mg/L		-0.06	0.06			
<b>WG255221</b>													
WG255221ICV	ICV	11/05/08 21:03	W1080916-5	2.416		2.286	mg/L	94.6	90	110			
WG255221ICB	ICB	11/05/08 21:05				U	mg/L		-0.06	0.06			
WG255221LFB	LFB	11/05/08 21:06	W1080913-4	2		1.912	mg/L	95.6	90	110			
L72630-01AS	AS	11/05/08 21:08	W1080913-4	2	.1	1.915	mg/L	90.8	90	110			
L72639-01DUP	DUP	11/05/08 21:11			.55	.554	mg/L				0.7	20	
L72758-02AS	AS	11/05/08 21:27	W1080913-4	2	1.01	3.043	mg/L	101.7	90	110			
L72759-01DUP	DUP	11/05/08 21:47			5.25	5.243	mg/L				0.1	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72758

Project ID: OJ06DZ

**pH (lab)** M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255107</b>													
WG255107LCSW3	LCSW	11/04/08 16:12	PCN29627	6		6.04	units	100.7	90	110			
WG255107LCSW6	LCSW	11/04/08 19:03	PCN29627	6		6.14	units	102.3	90	110			
L72761-01DUP	DUP	11/04/08 20:31			8.3	8.25	units				0.6	20	
WG255107LCSW9	LCSW	11/04/08 22:20	PCN29627	6		6.13	units	102.2	90	110			
WG255107LCSW12	LCSW	11/05/08 0:32	PCN29627	6		6.04	units	100.7	90	110			
WG255107LCSW15	LCSW	11/05/08 2:58	PCN29627	6		6.1	units	101.7	90	110			

**Potassium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255189</b>													
WG255189ICV	ICV	11/05/08 21:45	II080818-1	20		20.13	mg/L	100.7	95	105			
WG255189ICB	ICB	11/05/08 21:48				U	mg/L		-0.9	0.9			
WG255189LFB	LFB	11/05/08 22:02	II081023-4	99.76186		100.63	mg/L	100.9	85	115			
L72745-04AS	AS	11/05/08 22:56	II081023-4	99.76186	5	106.57	mg/L	101.8	85	115			
L72745-04ASD	ASD	11/05/08 23:00	II081023-4	99.76186	5	113.26	mg/L	108.5	85	115	6.09	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255016</b>													
WG255016PBW	PBW	11/03/08 10:10				U	mg/L		-20	20			
WG255016LCSW	LCSW	11/03/08 10:10	PCN29990	260		262	mg/L	100.8	80	120			
L72772-03DUP	DUP	11/03/08 10:29			3480	3500	mg/L				0.6	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.05105	mg/L	102.1	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.00022	0.00022			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.05		.04517	mg/L	90.3	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.05	.0002	.05702	mg/L	113.6	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.05	.0002	.05783	mg/L	115.3	70	130	1.41	20	

**Sodium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255326</b>													
WG255326ICV	ICV	11/07/08 12:51	II080818-1	100		101.79	mg/L	101.8	95	105			
WG255326ICB	ICB	11/07/08 12:55				U	mg/L		-0.9	0.9			
WG255326LFB	LFB	11/07/08 13:08	II081105-2	98.21624		100.15	mg/L	102	85	115			
L72724-03AS	AS	11/07/08 14:08	II081105-2	98.21624	20.3	123.77	mg/L	105.3	85	115			
L72724-03ASD	ASD	11/07/08 14:11	II081105-2	98.21624	20.3	124.59	mg/L	106.2	85	115	0.66	20	

**FMI Gold & Copper - Sierrita**  
 Project ID: OJ06DZ

ACZ Project ID: **L72758**

**Sulfate** SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255094</b>													
WG255094PBW	PBW	11/04/08 10:20				16	mg/L		-30	30			
WG255094LCSW	LCSW	11/04/08 10:22	WC080910-2	100		91	mg/L	91	80	120			
L72758-02DUP	DUP	11/04/08 10:46			1720	1762	mg/L				2.4	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.0492	mg/L	98.4	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.00022	0.00022			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.0501		.04517	mg/L	90.2	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.0501	U	.04656	mg/L	92.9	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.0501	U	.04757	mg/L	95	70	130	2.15	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255392</b>													
WG255392ICV	ICV	11/08/08 15:52	MS081101-2	.05		.05143	mg/L	102.9	90	110			
WG255392ICB	ICB	11/08/08 15:56				U	mg/L		-0.00022	0.00022			
WG255392LFB	LFB	11/08/08 16:03	MS081003-7	.05		.04879	mg/L	97.6	85	115			
L72746-03AS	AS	11/08/08 16:58	MS081003-7	.05	.004	.05611	mg/L	104.2	70	130			
L72746-03ASD	ASD	11/08/08 17:02	MS081003-7	.05	.004	.05726	mg/L	106.5	70	130	2.03	20	

**Zinc, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255435</b>													
WG255435ICV	ICV	11/12/08 9:29	II080818-1	2		1.996	mg/L	99.8	95	105			
WG255435ICB	ICB	11/12/08 9:33				U	mg/L		-0.03	0.03			
WG255435LFB	LFB	11/12/08 9:45	II081105-2	.5		.509	mg/L	101.8	85	115			
L72724-03AS	AS	11/12/08 10:45	II081105-2	.5	.04	.578	mg/L	107.6	85	115			
L72724-03ASD	ASD	11/12/08 10:49	II081105-2	.5	.04	.593	mg/L	110.6	85	115	2.56	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72758**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72758-01</b>	WG255189	Aluminum, dissolved	M200.7 ICP	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [ $< MDL$ ].
		Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255258	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255164	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10x MDL$ ).
<b>L72758-02</b>	WG255189	Aluminum, dissolved	M200.7 ICP	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [ $< MDL$ ].
		Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255258	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255164	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10x MDL$ ).

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72758**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72758  
Date Received: 10/30/2008  
Received By:  
Date Printed: 10/30/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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**

No Cyanide Trip Blank.

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

The client was not contacted.

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (μR/hr)
2970	4.6	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**  
OJ06DZ

ACZ Project ID: L72758  
Date Received: 10/30/2008  
Received By:

**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
L72758-01	IW-3A		Y		Y							<input type="checkbox"/>
L72758-02	IW-5		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: \_\_\_\_\_



**Laboratories, Inc.****L72758****CHAIN of CUSTODY**

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

**Report to:**

Name: Bill Dorris  
Company: Freepart McMoran Sierrita  
E-mail: billy-dorris@Ami.com

Address: 6200 W Duval Mine Rd  
Green Valley AZ 85614  
Telephone: 520-648-8873

**Copy of Report to:**

Name: Dan Simpson  
Company: Hydro Geo Chem

E-mail: dans@hginc.com  
Telephone: 520-293-1500 Ext 133

**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.

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

Quote #:  
Project/PO #: OJRG DZ  
Reporting state for compliance testing:  
Sampler's Name:  
Are any samples NRC licensable material?

# of Containers  
Ambient-TB  
Uranium  
Metal-dissolved

SAMPLE IDENTIFICATION		DATE:TIME	Matrix	# of Containers	Ambient-TB	Uranium	Metal-dissolved								
<u>IW-3A</u>		<u>10-27-08/13:05</u>	<u>GW</u>	<u>5</u>	<u>X</u>	<u>X</u>									
<u>IW-5</u>		<u>10-27-08/13:20</u>	<u>GW</u>	<u>5</u>	<u>X</u>	<u>X</u>									

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

**REMARKS/ SAMPLE DISCLOSURES**

Copy of report to Dan Simpson contains only "SDY" results with QC Summary.

PAGE  
of

UPS TRACKING # 1Z 867 7E4 23 1000 6000

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>Billy F. Dorris</u>	<u>10-29-08/15:00</u>	<u>MGS</u>	<u>10-30-08</u> <u>10:11</u>

December 02, 2008

## Report to:

Bill Dorris

FMI Gold &amp; Copper - Sierrita

P.O. Box 527

Green Valley, AZ 85622-0527

## Bill to:

Accounts Payable

FMI Gold &amp; Copper - Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson

Project ID: OJ069R

ACZ Project ID: L72783

Bill Dorris:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 31, 2008. This project has been assigned to ACZ's project number, L72783. Please reference this number in all future inquiries.

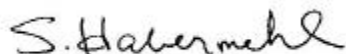
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72783. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 January 02, 2009. 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: OJ069R

Sample ID: MO-2007-3B

ACZ Sample ID: **L72783-01**

Date Sampled: 10/22/08 09:20

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	42.4	H	*	mg/L	0.5	3	11/26/08 1:38	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-4A

ACZ Sample ID: **L72783-02**

Date Sampled: 10/22/08 13:25

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	40.1	H	*	mg/L	0.5	3	11/26/08 2:32	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-4B

ACZ Sample ID: **L72783-03**

Date Sampled: 10/22/08 12:50

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	37.4	H	*	mg/L	0.5	3	11/26/08 2:50	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-4C

ACZ Sample ID: **L72783-04**

Date Sampled: 10/22/08 11:19

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	84.9	H	*	mg/L	0.5	3	11/26/08 3:08	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: DUP102208A

ACZ Sample ID: **L72783-05**

Date Sampled: 10/22/08 00:00

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.6	H	*	mg/L	0.5	3	11/26/08 3:26	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-5B

ACZ Sample ID: **L72783-06**

Date Sampled: 10/23/08 11:08

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	412	H	*	mg/L	5	30	11/26/08 3:44	ccp

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-5C

ACZ Sample ID: **L72783-07**

Date Sampled: 10/23/08 13:17

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	257	H	*	mg/L	3	10	11/26/08 4:03	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-6A

ACZ Sample ID: **L72783-08**

Date Sampled: 10/23/08 08:14

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	18.6	H	*	mg/L	0.5	3	11/26/08 4:57	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-6B

ACZ Sample ID: **L72783-09**

Date Sampled: 10/23/08 09:25

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	63.2	H	*	mg/L	0.5	3	11/26/08 5:15	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: I-10

ACZ Sample ID: **L72783-10**

Date Sampled: 10/28/08 08:30

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	526	H	*	mg/L	5	30	11/26/08 5:33	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-8

ACZ Sample ID: **L72783-11**

Date Sampled: 10/28/08 11:49

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	26.3	H	*	mg/L	0.5	3	11/26/08 5:51	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-9

ACZ Sample ID: **L72783-12**

Date Sampled: 10/28/08 14:17

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	74.8	H	*	mg/L	0.5	3	11/26/08 6:46	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-10

ACZ Sample ID: **L72783-13**

Date Sampled: 10/28/08 10:21

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	97.1	H	*	mg/L	0.5	3	11/26/08 7:04	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-20

ACZ Sample ID: **L72783-14**

Date Sampled: 10/28/08 12:30

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	1660	H	*	mg/L	30	100	11/26/08 7:22	ccp

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: DUP102808A

ACZ Sample ID: **L72783-15**

Date Sampled: 10/28/08 00:00

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	26.2	H	*	mg/L	0.5	3	11/26/08 7:40	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-1

ACZ Sample ID: **L72783-16**

Date Sampled: 10/30/08 09:36

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	121			mg/L	3	10	11/26/08 8:34	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-2

ACZ Sample ID: **L72783-17**

Date Sampled: 10/30/08 08:57

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	30.1			mg/L	0.5	3	11/26/08 8:52	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-3

ACZ Sample ID: **L72783-18**

Date Sampled: 10/30/08 10:10

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.8			mg/L	0.5	3	11/26/08 9:10	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-4

ACZ Sample ID: **L72783-19**

Date Sampled: 10/30/08 08:11

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	489			mg/L	5	30	11/26/08 9:28	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: DUP103008A

ACZ Sample ID: **L72783-20**

Date Sampled: 10/30/08 00:00

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	30.0			mg/L	0.5	3	11/26/08 9:47	ccp

**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.

## 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.

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: **L72783**

Project ID: OJ069R

**Sulfate**

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256365</b>													
WG256365ICV	ICV	11/25/08 12:54	WI081031-2	50		51.41	mg/L	102.8	90	110			
WG256365ICB	ICB	11/25/08 13:12				.59	mg/L		-1.5	1.5			
WG256365ICV1	ICV	11/25/08 14:46	WI081031-2	50		50.63	mg/L	101.3	90	110			
WG256365ICB1	ICB	11/25/08 15:04				U	mg/L		-1.5	1.5			
WG256365ICV2	ICV	11/26/08 19:05	WI081031-2	50		51.23	mg/L	102.5	90	110			
WG256365ICB2	ICB	11/26/08 19:23				U	mg/L		-1.5	1.5			
<b>WG256368</b>													
WG256368ICV	ICV	11/26/08 0:43	WI081031-2	50		51.32	mg/L	102.6	90	110			
WG256368ICB	ICB	11/26/08 1:02				U	mg/L		-1.5	1.5			
WG256368LFB	LFB	11/26/08 1:20	WI081125-2	30		31.1	mg/L	103.7	90	110			
L72783-01AS	AS	11/26/08 1:56	WI081125-2	30	42.4	71.37	mg/L	96.6	90	110			
L72783-01DUP	DUP	11/26/08 2:14			42.4	42.19	mg/L				0.5	20	
L72783-11AS	AS	11/26/08 6:09	WI081125-2	30	26.3	56.12	mg/L	99.4	90	110			
L72783-11DUP	DUP	11/26/08 6:27			26.3	26.35	mg/L				0.2	20	



**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72783**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L72783-01	WG256368	Sulfate	300.0 - 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.
L72783-02	WG256368	Sulfate	300.0 - 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.
L72783-03	WG256368	Sulfate	300.0 - 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.
L72783-04	WG256368	Sulfate	300.0 - 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.
L72783-05	WG256368	Sulfate	300.0 - 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.
L72783-06	WG256368	Sulfate	300.0 - 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.
L72783-07	WG256368	Sulfate	300.0 - 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.
L72783-08	WG256368	Sulfate	300.0 - 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.
L72783-09	WG256368	Sulfate	300.0 - 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.
L72783-10	WG256368	Sulfate	300.0 - 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.
L72783-11	WG256368	Sulfate	300.0 - 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.
L72783-12	WG256368	Sulfate	300.0 - 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.
L72783-13	WG256368	Sulfate	300.0 - 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.
L72783-14	WG256368	Sulfate	300.0 - 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.
L72783-15	WG256368	Sulfate	300.0 - 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.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72783**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ069R

ACZ Project ID: L72783  
Date Received: 10/31/2008  
Received By:  
Date Printed: 10/31/2008

**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) Is the trip blank for Cyanide present?			
12) Is the trip blank for VOA present?			
13) Are samples requiring no headspace, headspace free?			
14) Do the samples that require a Foreign Soils Permit have one?			

**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)

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**  
OJ069R

ACZ Project ID: L72783  
Date Received: 10/31/2008  
Received By:

**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
L72783-01	MO-2007-3B									X		<input type="checkbox"/>
L72783-02	MO-2007-4A									X		<input type="checkbox"/>
L72783-03	MO-2007-4B									X		<input type="checkbox"/>
L72783-04	MO-2007-4C									X		<input type="checkbox"/>
L72783-05	DUP102208A									X		<input type="checkbox"/>
L72783-06	MO-2007-5B									X		<input type="checkbox"/>
L72783-07	MO-2007-5C									X		<input type="checkbox"/>
L72783-08	MO-2007-6A									X		<input type="checkbox"/>
L72783-09	MO-2007-6B									X		<input type="checkbox"/>
L72783-10	I-10									X		<input type="checkbox"/>
L72783-11	M-8									X		<input type="checkbox"/>
L72783-12	M-9									X		<input type="checkbox"/>
L72783-13	M-10									X		<input type="checkbox"/>
L72783-14	M-20									X		<input type="checkbox"/>
L72783-15	DUP102808A									X		<input type="checkbox"/>
L72783-16	ESP-1									X		<input type="checkbox"/>
L72783-17	ESP-2									X		<input type="checkbox"/>
L72783-18	ESP-3									X		<input type="checkbox"/>
L72783-19	ESP-4									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: \_\_\_\_\_

**Laboratories, Inc.****170783****CHAIN of CUSTODY**

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

**Report to:**

Name: **Bill Dorris**  
Company: **Freight McMoran Sierrita**  
E-mail: **billy-dorris@fmi.com**

Address: **6200 W. Duval mine Rd**  
**Green Valley AZ 85614**  
Telephone: **520 648 8873**

**Copy of Report to:**

Name: **Dan Simpson**  
Company: **Hydro Geo Chem**

E-mail: **dans@hginc.com**  
Telephone: **520-293-1500 Ext 133**

**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.

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

Quote #:

Project/PO #: **OJ069R**

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers										
MO-2007-3B	10-22-08/9:20	GW	1	}									
MO-2007-4A	10-22-08/13:25	GW	1										
MO-2007-4B	10-22-08/12:50	GW	1										
MO-2007-4C	10-22-08/11:19	GW	1										
DUP102208A	10-22-08	GW	1										
MO-2007-5B	10-23-08/11:08	GW	1										
MO-2007-5C	10-23-08/13:17	GW	1										
MO-2007-6A	10-23-08/8:14	GW	1										
MO-2007-6B	10-23-08/9:25	GW	1										
I-10	10-28-08/8:30	GW	1										

**SD4 by**  
**EPA 300**  
**375**

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

**REMARKS/ SAMPLE DISCLOSURES**

PAGE

of

**UPS TRACKING # 1Z 867 7E4 23 1000 5994**

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

**RELINQUISHED BY:****DATE:TIME****RECEIVED BY:****DATE:TIME****Billy F. Dorris****10-30-08/15:00****11/18****10-31-08**  
**10:10**

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

November 21, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72925- SULFATE ONLY

Bill Dorris:

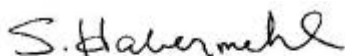
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 07, 2008. This project was assigned to ACZ's project number, L72925. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72925. 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: OJ06DZ

Sample ID: MH-10

ACZ Sample ID: **L72925-01**

Date Sampled: 11/04/08 15:00

Date Received: 11/07/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1450		*	mg/L	10	50	11/12/08 13:22	abm

**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.

**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.



FMI Gold & Copper - Sierrita

Project ID: OJ06DZ

ACZ Project ID: L72925

### Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255711</b>													
WG255711PBW1	PBW	11/13/08 17:48				3.5	mg/L		-20	20			
WG255711LCSW2	LCSW	11/13/08 17:59	WC081022-2	820.0001		790.1	mg/L	96.4	90	110			
WG255711PBW2	PBW	11/13/08 20:55				U	mg/L		-20	20			
WG255711LCSW5	LCSW	11/13/08 21:06	WC081022-2	820.0001		795.5	mg/L	97	90	110			
L72927-03DUP	DUP	11/13/08 23:08			U	U	mg/L				0	20	RA
WG255711PBW3	PBW	11/13/08 23:13				U	mg/L		-20	20			
WG255711LCSW8	LCSW	11/13/08 23:25	WC081113-3	820.0001		790.4	mg/L	96.4	90	110			
WG255711PBW4	PBW	11/14/08 2:07				U	mg/L		-20	20			
WG255711LCSW11	LCSW	11/14/08 2:18	WC081113-3	820.0001		791.9	mg/L	96.6	90	110			
WG255711LCSW14	LCSW	11/14/08 5:09	WC081022-2	820.0001		789.7	mg/L	96.3	90	110			

### Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	2		1.991	mg/L	99.6	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.09	0.09			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	1		1.011	mg/L	101.1	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	1	U	1.069	mg/L	106.9	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	1	U	1.05	mg/L	105	85	115	1.79	20	

### Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255696</b>													
WG255696ICV	ICV	11/14/08 3:54	MS081101-2	.02		.02152	mg/L	107.6	90	110			
WG255696ICB	ICB	11/14/08 3:58				.00057	mg/L		-0.00088	0.00088			
WG255696LFB	LFB	11/14/08 4:09	MS081108-3	.01		.0094	mg/L	94	85	115			
L72899-02AS	AS	11/14/08 5:11	MS081108-3	.01	U	.00908	mg/L	90.8	70	130			
L72899-02ASD	ASD	11/14/08 5:14	MS081108-3	.01	U	.00927	mg/L	92.7	70	130	2.07	20	

### Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255696</b>													
WG255696ICV	ICV	11/14/08 3:54	MS081101-2	.05		.05309	mg/L	106.2	90	110			
WG255696ICB	ICB	11/14/08 3:58				.00059	mg/L		-0.0011	0.0011			
WG255696LFB	LFB	11/14/08 4:09	MS081108-3	.05005		.04701	mg/L	93.9	85	115			
L72899-02AS	AS	11/14/08 5:11	MS081108-3	.05005	U	.05403	mg/L	108	70	130			
L72899-02ASD	ASD	11/14/08 5:14	MS081108-3	.05005	U	.05384	mg/L	107.6	70	130	0.35	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72925**Project ID: **OJ06DZ****Barium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	2		1.9831	mg/L	99.2	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.009	0.009			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	.5		.4963	mg/L	99.3	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	.5	.064	.5765	mg/L	102.5	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	.5	.064	.5573	mg/L	98.7	85	115	3.39	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255696</b>													
WG255696ICV	ICV	11/14/08 3:54	MS081101-2	.05		.04997	mg/L	99.9	90	110			
WG255696ICB	ICB	11/14/08 3:58				U	mg/L		-0.00022	0.00022			
WG255696LFB	LFB	11/14/08 4:09	MS081108-3	.05005		.04386	mg/L	87.6	85	115			
L72899-02AS	AS	11/14/08 5:11	MS081108-3	.05005	U	.04901	mg/L	97.9	70	130			
L72899-02ASD	ASD	11/14/08 5:14	MS081108-3	.05005	U	.04843	mg/L	96.8	70	130	1.19	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255696</b>													
WG255696ICV	ICV	11/14/08 3:54	MS081101-2	.05		.05136	mg/L	102.7	90	110			
WG255696ICB	ICB	11/14/08 3:58				U	mg/L		-0.00022	0.00022			
WG255696LFB	LFB	11/14/08 4:09	MS081108-3	.05		.04509	mg/L	90.2	85	115			
L72899-02AS	AS	11/14/08 5:11	MS081108-3	.05	U	.04865	mg/L	97.3	70	130			
L72899-02ASD	ASD	11/14/08 5:14	MS081108-3	.05	U	.04805	mg/L	96.1	70	130	1.24	20	

**Calcium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	100		95.89	mg/L	95.9	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.6	0.6			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	67.97008		67.48	mg/L	99.3	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	67.97008	149	211.38	mg/L	91.8	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	67.97008	149	208.56	mg/L	87.6	85	115	1.34	20	

**Chloride** SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255759</b>													
WG255759ICB	ICB	11/14/08 15:14				U	mg/L		-3	3			
WG255759ICV	ICV	11/14/08 15:14	WI081106-1	54.835		60	mg/L	109.4	90	110			
WG255759LFB1	LFB	11/14/08 15:27	WI080818-2	30		32.9	mg/L	109.7	90	110			
L72922-04AS	AS	11/14/08 15:31	WI080818-2	30	6	36.8	mg/L	102.7	90	110			
L72922-05DUP	DUP	11/14/08 15:31			U	U	mg/L				0	20	RA
WG255759LFB2	LFB	11/14/08 15:44	WI080818-2	30		32.1	mg/L	107	90	110			

**FMI Gold & Copper - Sierrita**  
 Project ID: OJ06DZ

ACZ Project ID: **L72925**

**Chromium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	2		1.898	mg/L	94.9	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.03	0.03			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	.5		.485	mg/L	97	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	.5	U	.504	mg/L	100.8	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	.5	U	.493	mg/L	98.6	85	115	2.21	20	

**Cobalt, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	2.002		1.925	mg/L	96.2	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.03	0.03			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	.5		.491	mg/L	98.2	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	.5	U	.494	mg/L	98.8	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	.5	U	.484	mg/L	96.8	85	115	2.04	20	

**Conductivity @25C** SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255711</b>													
WG255711LCSW1	LCSW	11/13/08 17:49	PCN30873	1408.8		1337	µmhos/cm	94.9	90	110			
WG255711LCSW4	LCSW	11/13/08 20:57	PCN30873	1408.8		1315	µmhos/cm	93.3	90	110			
L72927-03DUP	DUP	11/13/08 23:08			U	U	µmhos/cm				0	20	RA
WG255711LCSW7	LCSW	11/13/08 23:14	PCN30873	1408.8		1304	µmhos/cm	92.6	90	110			
WG255711LCSW10	LCSW	11/14/08 2:08	PCN30873	1408.8		1292	µmhos/cm	91.7	90	110			
WG255711LCSW13	LCSW	11/14/08 5:00	PCN30873	1408.8		1285	µmhos/cm	91.2	90	110			

**Copper, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	2		1.936	mg/L	96.8	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.03	0.03			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	.5		.496	mg/L	99.2	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	.5	U	.515	mg/L	103	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	.5	U	.499	mg/L	99.8	85	115	3.16	20	

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72925

Cyanide, total			M335.4 - Colorimetric w/ distillation										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255751													
WG255751ICV	ICV	11/14/08 12:53	WI081111-3	.3		.2818	mg/L	93.9	90	110			
WG255751ICB	ICB	11/14/08 12:54				U	mg/L		-0.015	0.015			
WG255774													
WG255774ICV	ICV	11/14/08 14:12	WI081111-3	.3		.2783	mg/L	92.8	90	110			
WG255774ICB	ICB	11/14/08 14:13				U	mg/L		-0.015	0.015			
WG255681LRB	LRB	11/14/08 14:14				U	mg/L		-0.015	0.015			
WG255681LFB	LFB	11/14/08 14:15	WI081111-7	.2		.1929	mg/L	96.5	90	110			
L72913-09DUP	DUP	11/14/08 14:17				U	mg/L					0	20
L72921-01LFM	LFM	11/14/08 14:18	WI081111-7	.2		.1979	mg/L	99	90	110			
L72956-01DUP	DUP	11/14/08 14:28				.009	.0094	mg/L				4.3	20
L72957-01LFM	LFM	11/14/08 14:30	WI081111-7	.2		.012	.2139	mg/L	101	90	110		
Fluoride			SM4500F-C										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255978													
WG255978ICV	ICV	11/19/08 15:32	WC081106-1	2		2.01	mg/L	100.5	95	105			
WG255978ICB	ICB	11/19/08 15:58				U	mg/L		-0.3	0.3			
WG255978LFB2	LFB	11/19/08 18:51	WC081114-3	5		4.52	mg/L	90.4	90	110			
L72926-01AS	AS	11/19/08 19:27	WC081114-3	5	1.2	5.93	mg/L	94.6	90	110			
L72926-01DUP	DUP	11/19/08 19:40				1.2	1.08	mg/L				10.5	20
Iron, dissolved			M200.7 ICP										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255828													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	2		1.931	mg/L	96.6	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.06	0.06			
WG255833													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	1		1.008	mg/L	100.8	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	1	U	1.048	mg/L	104.8	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	1	U	1.01	mg/L	101	85	115	3.69	20	
Lead, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255876													
WG255876ICV	ICV	11/18/08 3:46	MS081101-2	.05		.04654	mg/L	93.1	90	110			
WG255876ICB	ICB	11/18/08 3:50				U	mg/L		-0.00022	0.00022			
WG255876LFB	LFB	11/18/08 3:57	MS081108-3	.05		.1831	mg/L	366.2	85	115			LA
L72899-05AS	AS	11/18/08 5:07	MS081108-3	.05	U	.04469	mg/L	89.4	70	130			
L72899-05ASD	ASD	11/18/08 5:18	MS081108-3	.05	U	.04533	mg/L	90.7	70	130	1.42	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72925**Project ID: **OJ06DZ****Magnesium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	I1080818-1	100		98.02	mg/L	98	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.6	0.6			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	I1081113-5	49.96908		49.69	mg/L	99.4	85	115			
L72834-01AS	AS	11/17/08 12:59	I1081113-5	49.96908	47.8	98.32	mg/L	101.1	85	115			
L72834-01ASD	ASD	11/17/08 13:02	I1081113-5	49.96908	47.8	96.94	mg/L	98.3	85	115	1.41	20	

**Manganese, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	I1080818-1	2		1.903	mg/L	95.2	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.015	0.015			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	I1081113-5	.5		.5187	mg/L	103.7	85	115			
L72834-01AS	AS	11/17/08 12:59	I1081113-5	.5	.019	.5485	mg/L	105.9	85	115			
L72834-01ASD	ASD	11/17/08 13:02	I1081113-5	.5	.019	.5306	mg/L	102.3	85	115	3.32	20	

**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255574</b>													
WG255574ICV	ICV	11/13/08 12:09	I1081103-1	.005		.00522	mg/L	104.4	90	110			
WG255574ICB	ICB	11/13/08 12:11				U	mg/L		-0.0006	0.0006			
<b>WG255575</b>													
WG255575LRB	LRB	11/13/08 13:28				U	mg/L		-0.00044	0.00044			
WG255575LFB	LFB	11/13/08 13:30	I1081027-2	.002		.00207	mg/L	103.5	85	115			
L72925-01LFM	LFM	11/13/08 13:35	I1081027-2	.002	U	.00207	mg/L	103.5	85	115			
L72925-01LFMD	LFMD	11/13/08 13:37	I1081027-2	.002	U	.0021	mg/L	105	85	115	1.44	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255828</b>													
WG255828ICV	ICV	11/17/08 10:36	I1080818-1	2		1.948	mg/L	97.4	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.03	0.03			
<b>WG255833</b>													
WG255833LFB	LFB	11/17/08 12:06	I1081113-5	.5		.489	mg/L	97.8	85	115			
L72834-01AS	AS	11/17/08 12:59	I1081113-5	.5	U	.519	mg/L	103.8	85	115			
L72834-01ASD	ASD	11/17/08 13:02	I1081113-5	.5	U	.515	mg/L	103	85	115	0.77	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72925

Project ID: OJ06DZ

Nickel, dissolved				M200.7 ICP									
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255980													
WG255980ICV	ICV	11/19/08 10:45	II081119-1	2.004		1.925	mg/L	96.1	95	105			
WG255980ICB	ICB	11/19/08 10:49				U	mg/L		-0.03	0.03			
WG255980LFB	LFB	11/19/08 11:02	II081117-2	.4985		.496	mg/L	99.5	85	115			
L72922-09AS	AS	11/19/08 11:55	II081117-2	.4985	U	.499	mg/L	100.1	85	115			
L72922-09ASD	ASD	11/19/08 11:58	II081117-2	.4985	U	.508	mg/L	101.9	85	115	1.79	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
WG255793													
WG255793ICV	ICV	11/14/08 18:38	WI080916-5	2.416		2.516	mg/L	104.1	90	110			
WG255793ICB	ICB	11/14/08 18:40				U	mg/L		-0.06	0.06			
WG255794													
WG255794ICV	ICV	11/14/08 19:19	WI080916-5	2.416		2.285	mg/L	94.6	90	110			
WG255794ICB	ICB	11/14/08 19:20				U	mg/L		-0.06	0.06			
WG255794LFB1	LFB	11/14/08 19:21	WI080913-4	2		1.952	mg/L	97.6	90	110			
WG255794LFB2	LFB	11/14/08 20:00	WI080913-4	2		1.969	mg/L	98.5	90	110			
L72785-06DUP	DUP	11/14/08 20:05			.29	.31	mg/L				6.7	20	
L72785-05AS	AS	11/14/08 20:26	WI080913-4	20	9.2	30.21	mg/L	105.1	90	110			
pH (lab)				M150.1 - Electrometric									
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255711													
WG255711LCSW3	LCSW	11/13/08 18:01	PCN29627	6		5.9	units	98.3	90	110			
WG255711LCSW6	LCSW	11/13/08 21:08	PCN29627	6		5.88	units	98	90	110			
L72927-03DUP	DUP	11/13/08 23:08			4.9	5.07	units				3.4	20	
WG255711LCSW9	LCSW	11/13/08 23:29	PCN29627	6		5.81	units	96.8	90	110			
WG255711LCSW12	LCSW	11/14/08 2:21	PCN29627	6		5.8	units	96.7	90	110			
WG255711LCSW15	LCSW	11/14/08 5:12	PCN29627	6		5.78	units	96.3	90	110			
Potassium, dissolved				M200.7 ICP									
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255828													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	20		20.01	mg/L	100.1	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.9	0.9			
WG255833													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	99.76186		102.13	mg/L	102.4	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	99.76186	2.9	110.87	mg/L	108.2	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	99.76186	2.9	109.44	mg/L	106.8	85	115	1.3	20	
Residue, Filterable (TDS) @180C				SM2540C									
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255464													
WG255464PBW	PBW	11/10/08 13:25				U	mg/L		-20	20			
WG255464LCSW	LCSW	11/10/08 13:25	PCN29990	260		264	mg/L	101.5	80	120			
L72927-01DUP	DUP	11/10/08 13:35			1330	1316	mg/L				1.1	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72925**

Project ID: **OJ06DZ**

Selenium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255696													
WG255696ICV	ICV	11/14/08 3:54	MS081101-2	.05		.05164	mg/L	103.3	90	110			
WG255696ICB	ICB	11/14/08 3:58				U	mg/L		-0.00022	0.00022			
WG255696LFB	LFB	11/14/08 4:09	MS081108-3	.05		.04553	mg/L	91.1	85	115			
L72899-02AS	AS	11/14/08 5:11	MS081108-3	.05	.0014	.06081	mg/L	118.8	70	130			
L72899-02ASD	ASD	11/14/08 5:14	MS081108-3	.05	.0014	.05613	mg/L	109.5	70	130	8	20	
Sodium, dissolved			M200.7 ICP										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255828													
WG255828ICV	ICV	11/17/08 10:36	II080818-1	100		100.76	mg/L	100.8	95	105			
WG255828ICB	ICB	11/17/08 10:39				U	mg/L		-0.9	0.9			
WG255833													
WG255833LFB	LFB	11/17/08 12:06	II081113-5	98.21624		99.32	mg/L	101.1	85	115			
WG255833LFB	LFB	11/17/08 12:06	II081113-5	98.21624		99.4	mg/L	101.2	85	115			
L72834-01AS	AS	11/17/08 12:59	II081113-5	98.21624	44.1	148.13	mg/L	105.9	85	115			
L72834-01ASD	ASD	11/17/08 13:02	II081113-5	98.21624	44.1	145.47	mg/L	103.2	85	115	1.81	20	
Sulfate			SM4500 SO4-D										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255619													
WG255619PBW	PBW	11/12/08 12:50				U	mg/L		-30	30			
WG255619LCSW	LCSW	11/12/08 12:52	WC080910-2	100		105	mg/L	105	80	120			
L72927-08DUP	DUP	11/12/08 13:39			U	U	mg/L				0	20	RA
Thallium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255876													
WG255876ICV	ICV	11/18/08 3:46	MS081101-2	.05		.04849	mg/L	97	90	110			
WG255876ICB	ICB	11/18/08 3:50				U	mg/L		-0.00022	0.00022			
WG255876LFB	LFB	11/18/08 3:57	MS081108-3	.0501		.04355	mg/L	86.9	85	115			
L72899-05AS	AS	11/18/08 5:07	MS081108-3	.0501	U	.04499	mg/L	89.8	70	130			
L72899-05ASD	ASD	11/18/08 5:18	MS081108-3	.0501	U	.04547	mg/L	90.8	70	130	1.06	20	
Uranium, dissolved			M200.8 ICP-MS										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255876													
WG255876ICV	ICV	11/18/08 3:46	MS081101-2	.05		.04666	mg/L	93.3	90	110			
WG255876ICB	ICB	11/18/08 3:50				U	mg/L		-0.00022	0.00022			
WG255876LFB	LFB	11/18/08 3:57	MS081108-3	.05		.04344	mg/L	86.9	85	115			
L72899-05AS	AS	11/18/08 5:07	MS081108-3	.05	.0171	.0641	mg/L	94	70	130			
L72899-05ASD	ASD	11/18/08 5:18	MS081108-3	.05	.0171	.06579	mg/L	97.4	70	130	2.6	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72925**

Project ID: OJ06DZ

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255890</b>													
WG255890ICV	ICV	11/18/08 16:40	II080818-1	2		1.965	mg/L	98.3	95	105			
WG255890ICB	ICB	11/18/08 16:44				U	mg/L		-0.03	0.03			
WG255890LFB	LFB	11/18/08 16:57	II081117-2	.5		.506	mg/L	101.2	85	115			
L72862-01AS	AS	11/18/08 17:50	II081117-2	.5	U	.522	mg/L	104.4	85	115			
L72862-01ASD	ASD	11/18/08 17:53	II081117-2	.5	U	.525	mg/L	105	85	115	0.57	20	



**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72925**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72925-01</b>	WG255876	Lead, dissolved	M200.8 ICP-MS	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [ $< \text{MDL}$ ].
	WG255759	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\times \text{MDL}$ ).
	WG255711	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\times \text{MDL}$ ).
	WG255774	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\times \text{MDL}$ ).
	WG255619	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\times \text{MDL}$ ).
	WG255711	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $< 10\times \text{MDL}$ ).

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72925**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72925  
Date Received: 11/7/2008  
Received By:  
Date Printed: 11/7/2008

**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) Is the trip blank for Cyanide present?		X	
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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**

No Cyanide Trip Blank.

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

The client was not contacted.

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (μR/hr)
1905	1.1	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**  
OJ06DZ

ACZ Project ID: L72925  
Date Received: 11/7/2008  
Received By:

**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
L72925-01	MH-10		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: \_\_\_\_\_

## Report to:

Name: Bill Dorris  
Company: Freeport McMoran Sierrita  
E-mail: billy-dorris@Fmi.com

Address: 6200 W Duval Mine Rd  
Green Valley AZ 85614  
Telephone: 520 648 8873

**Copy of Report to:**

Name: Don Simpson  
Company: Hydro Geo Chem

E-mail: dans@hginc.com  
Telephone: 520-293-1500 EXT 133

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.

## PROJECT INFORMATION

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

Quote #:

Project/PO #: 0506DZ

Reporting state for compliance testing:

Sampler's Name:

Are any samples NRC licensable material?

### # of Containers

Ambient-TB

Vanadium Pentoxide

### SAMPLE IDENTIFICATION

## DATE:TIME

## Matrix

[illegible]

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

## REMARKS/ SAMPLE DISCLOSURES

Copy of report to Dan Simpson contains only "SO<sub>4</sub>" results with QC summary.

PAGE
of

UPS TRACKING # 1Z 867 7E4 23 1000 5985

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Billy F. Davis	11-6-08/15:00	LEO	11-7-08 9:51

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

November 25, 2008

**Cc: Dan Simpson**

Project ID: OJ06DZ  
ACZ Project ID: L72957- SULFATE ONLY

Bill Dorris:

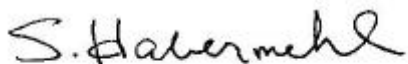
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 11, 2008. This project was assigned to ACZ's project number, L72957. Please reference this number in all future inquiries.

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, version 12.0. The enclosed results relate only to the samples received under L72957. 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: OJ06DZ

Sample ID: MH-11

ACZ Sample ID: **L72957-01**

Date Sampled: 11/07/08 15:33

Date Received: 11/11/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	1560		*	mg/L	10	50	11/14/08 12:36	kah

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: EQB111008

ACZ Sample ID: **L72957-02**

Date Sampled: 11/10/08 06:50

Date Received: 11/11/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D	10	B	*	mg/L	10	50	11/14/08 12:37	kah

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

Sample ID: TB111008

ACZ Sample ID: **L72957-03**

Date Sampled: 11/10/08 06:52

Date Received: 11/11/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	SM4500 SO4-D		U	*	mg/L	10	50	11/14/08 12:39	kah

**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.

## 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.

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72957**Project ID: **OJ06DZ****Alkalinity as CaCO<sub>3</sub>**

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255711</b>													
WG255711PBW1	PBW	11/13/08 17:48				3.5	mg/L		-20	20			
WG255711LCSW2	LCSW	11/13/08 17:59	WC081022-2	820.0001		790.1	mg/L	96.4	90	110			
WG255711PBW2	PBW	11/13/08 20:55				U	mg/L		-20	20			
WG255711LCSW5	LCSW	11/13/08 21:06	WC081022-2	820.0001		795.5	mg/L	97	90	110			
WG255711PBW3	PBW	11/13/08 23:13				U	mg/L		-20	20			
WG255711LCSW8	LCSW	11/13/08 23:25	WC081113-3	820.0001		790.4	mg/L	96.4	90	110			
WG255711PBW4	PBW	11/14/08 2:07				U	mg/L		-20	20			
WG255711LCSW11	LCSW	11/14/08 2:18	WC081113-3	820.0001		791.9	mg/L	96.6	90	110			
L72957-03DUP	DUP	11/14/08 3:33			8	7.6	mg/L				5.1	20	RA
WG255711LCSW14	LCSW	11/14/08 5:09	WC081022-2	820.0001		789.7	mg/L	96.3	90	110			

**Aluminum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256152</b>													
WG256152ICV	ICV	11/21/08 14:57	II081119-1	2		1.959	mg/L	98	95	105			
WG256152ICB	ICB	11/21/08 15:00				U	mg/L		-0.09	0.09			
WG256152LFB	LFB	11/21/08 15:13	II081117-2	1		1.018	mg/L	101.8	85	115			
L72957-02AS	AS	11/21/08 16:09	II081117-2	1	U	1.041	mg/L	104.1	85	115			
L72957-02ASD	ASD	11/21/08 16:12	II081117-2	1	U	1.049	mg/L	104.9	85	115	0.77	20	

**Antimony, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.02		.02082	mg/L	104.1	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00088	0.00088			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.01		.01046	mg/L	104.6	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.01	U	.00956	mg/L	95.6	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.01	U	.00963	mg/L	96.3	70	130	0.73	20	

**Arsenic, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.05207	mg/L	104.1	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.0011	0.0011			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.05005		.05002	mg/L	99.9	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.05005	U	.05295	mg/L	105.8	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.05005	U	.05389	mg/L	107.7	70	130	1.76	20	

**Barium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		1.9914	mg/L	99.6	95	105			
WG256081ICB	ICB	11/20/08 20:15				.0034	mg/L		-0.009	0.009			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.4934	mg/L	98.7	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	.004	.4967	mg/L	98.5	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	.004	.5194	mg/L	103.1	85	115	4.47	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72957

Project ID: OJ06DZ

### Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.05038	mg/L	100.8	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00022	0.00022			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.05005		.04796	mg/L	95.8	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.05005	U	.05128	mg/L	102.5	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.05005	U	.05192	mg/L	103.7	70	130	1.24	20	

### Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.05	mg/L	100	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00022	0.00022			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.05		.04869	mg/L	97.4	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.05	U	.05065	mg/L	101.3	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.05	U	.05088	mg/L	101.8	70	130	0.45	20	

### Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	100		100.51	mg/L	100.5	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.6	0.6			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	67.97008		69.83	mg/L	102.7	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	67.97008	U	70.29	mg/L	103.4	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	67.97008	U	72.14	mg/L	106.1	85	115	2.6	20	

### Chloride

SM4500CL-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255842</b>													
WG255842ICV	ICV	11/17/08 13:20	WI081106-1	54.835		53.9	mg/L	98.3	90	110			
WG255842ICB	ICB	11/17/08 13:21				U	mg/L		-3	3			
WG255842LFB	LFB	11/17/08 13:22	WI080818-2	30		31.8	mg/L	106	90	110			
L72932-03DUP	DUP	11/17/08 13:39			12	11.6	mg/L				3.4	20	
L72932-02AS	AS	11/17/08 13:56	WI080818-2	30	65	91.1	mg/L	87	90	110			M2
<b>WG255891</b>													
WG255891ICB	ICB	11/17/08 16:05				U	mg/L		-3	3			
WG255891ICV	ICV	11/17/08 16:05	WI081106-1	54.835		59.7	mg/L	108.9	90	110			
WG255891LFB1	LFB	11/17/08 17:38	WI080818-2	30		31.4	mg/L	104.7	90	110			
WG255891LFB2	LFB	11/17/08 17:42	WI080818-2	30		31.7	mg/L	105.7	90	110			
L72818-02DUP	DUP	11/17/08 17:57			120	121	mg/L				0.8	20	
L72818-01AS	AS	11/17/08 18:05	10XCL	30	80	120	mg/L	133.3	90	110			M1

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72957**Project ID: **OJ06DZ****Chromium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		1.986	mg/L	99.3	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.03	0.03			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.508	mg/L	101.6	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	U	.512	mg/L	102.4	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	U	.532	mg/L	106.4	85	115	3.83	20	

**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2.002		1.952	mg/L	97.5	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.03	0.03			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.494	mg/L	98.8	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	U	.507	mg/L	101.4	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	U	.524	mg/L	104.8	85	115	3.3	20	

**Conductivity @25C**

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255711</b>													
WG255711LCSW1	LCSW	11/13/08 17:49	PCN30873	1408.8		1337	µmhos/cm	94.9	90	110			
WG255711LCSW4	LCSW	11/13/08 20:57	PCN30873	1408.8		1315	µmhos/cm	93.3	90	110			
WG255711LCSW7	LCSW	11/13/08 23:14	PCN30873	1408.8		1304	µmhos/cm	92.6	90	110			
WG255711LCSW10	LCSW	11/14/08 2:08	PCN30873	1408.8		1292	µmhos/cm	91.7	90	110			
L72957-03DUP	DUP	11/14/08 3:33			U	U	µmhos/cm				0	20	RA
WG255711LCSW13	LCSW	11/14/08 5:00	PCN30873	1408.8		1285	µmhos/cm	91.2	90	110			

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		1.953	mg/L	97.7	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.03	0.03			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.499	mg/L	99.8	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	U	.501	mg/L	100.2	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	U	.519	mg/L	103.8	85	115	3.53	20	

FMI Gold & Copper - Sierrita

ACZ Project ID: L72957

Project ID: OJ06DZ

Cyanide, total			M335.4 - Colorimetric w/ distillation										
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255751													
WG255751ICV	ICV	11/14/08 12:53	WI081111-3	.3		.2818	mg/L	93.9	90	110			
WG255751ICB	ICB	11/14/08 12:54				U	mg/L		-0.015	0.015			
WG255774													
WG255774ICV	ICV	11/14/08 14:12	WI081111-3	.3		.2783	mg/L	92.8	90	110			
WG255774ICB	ICB	11/14/08 14:13				U	mg/L		-0.015	0.015			
WG255681LRB	LRB	11/14/08 14:14				U	mg/L		-0.015	0.015			
WG255681LFB	LFB	11/14/08 14:15	WI081111-7	.2		.1929	mg/L	96.5	90	110			
L72956-01DUP	DUP	11/14/08 14:28			.009	.0094	mg/L				4.3	20	RA
L72957-01LFM	LFM	11/14/08 14:30	WI081111-7	.2	.012	.2139	mg/L	101	90	110			
WG255962													
WG255962ICV	ICV	11/18/08 21:03	WI081111-3	.3		.2787	mg/L	92.9	90	110			
WG255962ICB	ICB	11/18/08 21:04				U	mg/L		-0.015	0.015			
WG255923LRB	LRB	11/18/08 21:05				U	mg/L		-0.015	0.015			
WG255923LFB	LFB	11/18/08 21:06	WI081111-7	.2		.1988	mg/L	99.4	90	110			
L72957-04DUP	DUP	11/18/08 21:07			U	U	mg/L				0	20	RA
L72962-01LFM	LFM	11/18/08 21:09	WI081111-7	.2	U	.2029	mg/L	101.5	90	110			
Fluoride													
SM4500F-C													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG255978													
WG255978ICV	ICV	11/19/08 15:32	WC081106-1	2		2.01	mg/L	100.5	95	105			
WG255978ICB	ICB	11/19/08 15:58				U	mg/L		-0.3	0.3			
WG255978LFB2	LFB	11/19/08 18:51	WC081114-3	5		4.52	mg/L	90.4	90	110			
L72957-01DUP	DUP	11/19/08 19:48			U	U	mg/L				0	20	RA
L72957-01AS	AS	11/19/08 19:51	WC081114-3	5	U	4.75	mg/L	95	90	110			
Iron, dissolved													
M200.7 ICP													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG256081													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		1.948	mg/L	97.4	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.06	0.06			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	1		1.007	mg/L	100.7	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	1	U	1.014	mg/L	101.4	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	1	U	1.053	mg/L	105.3	85	115	3.77	20	
Lead, dissolved													
M200.8 ICP-MS													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG256010													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.04792	mg/L	95.8	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00022	0.00022			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.05		.0472	mg/L	94.4	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.05	U	.04648	mg/L	93	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.05	U	.04727	mg/L	94.5	70	130	1.69	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72957**Project ID: **OJ06DZ****Magnesium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	100		101.2	mg/L	101.2	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.6	0.6			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	49.96908		50.78	mg/L	101.6	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	49.96908	U	51.32	mg/L	102.7	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	49.96908	U	52.62	mg/L	105.3	85	115	2.5	20	

**Manganese, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		1.9519	mg/L	97.6	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.015	0.015			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.5271	mg/L	105.4	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	U	.5315	mg/L	106.3	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	U	.5509	mg/L	110.2	85	115	3.58	20	

**Mercury, dissolved**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255735</b>													
WG255735ICV	ICV	11/17/08 9:34	II081103-1	.005		.0051	mg/L	102	95	105			
WG255735ICB	ICB	11/17/08 9:36				U	mg/L		-0.0002	0.0002			
<b>WG255785</b>													
WG255785LRB	LRB	11/17/08 15:03				U	mg/L		-0.00044	0.00044			
WG255785LFB	LFB	11/17/08 15:05	II081027-2	.002		.00199	mg/L	99.5	85	115			
L72805-11LFM	LFM	11/17/08 15:42	II081027-2	.002	U	.00203	mg/L	101.5	85	115			
L72805-11LFMD	LFMD	11/17/08 15:45	II081027-2	.002	U	.00201	mg/L	100.5	85	115	0.99	20	

**Molybdenum, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		2.015	mg/L	100.8	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.03	0.03			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.507	mg/L	101.4	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	U	.504	mg/L	100.8	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	U	.518	mg/L	103.6	85	115	2.74	20	

**Nickel, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256238</b>													
WG256238ICV	ICV	11/24/08 11:07	II081119-1	2.004		1.895	mg/L	94.6	95	105			
WG256238ICB	ICB	11/24/08 11:11				U	mg/L		-0.03	0.03			
WG256238LFB	LFB	11/24/08 11:24	II081117-2	.4985		.518	mg/L	103.9	85	115			
L72941-07AS	AS	11/24/08 11:44	II081117-2	.4985	.13	.658	mg/L	105.9	85	115			
L72941-07ASD	ASD	11/24/08 11:47	II081117-2	.4985	.13	.659	mg/L	106.1	85	115	0.15	20	
L72957-02AS	AS	11/24/08 12:17	II081117-2	.4985	U	.549	mg/L	110.1	85	115			
L72957-02ASD	ASD	11/24/08 12:21	II081117-2	.4985	U	.551	mg/L	110.5	85	115	0.36	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72957**Project ID: **OJ06DZ****Nitrate/Nitrite as N**

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256136</b>													
WG256136ICV	ICV	11/20/08 21:34	WI080916-5	2.416		2.327	mg/L	96.3	90	110			
WG256136ICB	ICB	11/20/08 21:35				U	mg/L		-0.06	0.06			
WG256136LFB1	LFB	11/20/08 21:36	WI080913-4	2		2.064	mg/L	103.2	90	110			
L72824-02AS	AS	11/20/08 21:39	WI080913-4	2	U	2.102	mg/L	105.1	90	110			
L72824-03DUP	DUP	11/20/08 21:42			U	U	mg/L				0	20	RA
WG256136LFB2	LFB	11/20/08 22:18	WI080913-4	2		1.915	mg/L	95.8	90	110			

**pH (lab)**

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255711</b>													
WG255711LCSW3	LCSW	11/13/08 18:01	PCN29627	6		5.9	units	98.3	90	110			
WG255711LCSW6	LCSW	11/13/08 21:08	PCN29627	6		5.88	units	98	90	110			
WG255711LCSW9	LCSW	11/13/08 23:29	PCN29627	6		5.81	units	96.8	90	110			
WG255711LCSW12	LCSW	11/14/08 2:21	PCN29627	6		5.8	units	96.7	90	110			
L72957-03DUP	DUP	11/14/08 3:33			6.1	6.18	units				1.3	20	
WG255711LCSW15	LCSW	11/14/08 5:12	PCN29627	6		5.78	units	96.3	90	110			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	20		20.05	mg/L	100.3	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.9	0.9			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	99.76186		100	mg/L	100.2	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	99.76186	U	98.84	mg/L	99.1	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	99.76186	U	101.96	mg/L	102.2	85	115	3.11	20	

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

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255680</b>													
WG255680PBW	PBW	11/12/08 10:50				U	mg/L		-20	20			
WG255680LCSW	LCSW	11/12/08 10:51	PCN31032	260		256	mg/L	98.5	80	120			
L72957-01DUP	DUP	11/12/08 11:03			2580	2588	mg/L				0.3	20	
L72980-03DUP	DUP	11/12/08 11:14			560	570	mg/L				1.8	20	

**Selenium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.05053	mg/L	101.1	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00022	0.00022			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.05		.04692	mg/L	93.8	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.05	U	.05001	mg/L	100	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.05	U	.05146	mg/L	102.9	70	130	2.86	20	



**FMI Gold & Copper - Sierrita**

Project ID: OJ06DZ

ACZ Project ID: L72957

**Sodium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	100		101.74	mg/L	101.7	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.9	0.9			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	98.21624		99.42	mg/L	101.2	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	98.21624	U	98.61	mg/L	100.4	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	98.21624	U	101.42	mg/L	103.3	85	115	2.81	20	

**Sulfate**

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG255763</b>													
WG255763PBW	PBW	11/14/08 12:10				U	mg/L		-30	30			
WG255763LCSW	LCSW	11/14/08 12:11	WC080910-2	100		106	mg/L	106	80	120			
L72962-01DUP	DUP	11/14/08 12:49			10	15	mg/L				40	20	RA

**Thallium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.04842	mg/L	96.8	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00022	0.00022			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.0501		.04578	mg/L	91.4	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.0501	U	.04531	mg/L	90.4	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.0501	U	.0459	mg/L	91.6	70	130	1.29	20	

**Uranium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256010</b>													
WG256010ICV	ICV	11/20/08 1:37	MS081101-2	.05		.04678	mg/L	93.6	90	110			
WG256010ICB	ICB	11/20/08 1:42				U	mg/L		-0.00022	0.00022			
WG256010LFB	LFB	11/20/08 1:53	MS081108-3	.05		.04568	mg/L	91.4	85	115			
L72957-02AS	AS	11/20/08 2:08	MS081108-3	.05	U	.04573	mg/L	91.5	70	130			
L72957-02ASD	ASD	11/20/08 2:14	MS081108-3	.05	U	.04593	mg/L	91.9	70	130	0.44	20	

**WG256089**

WG256089ICV	ICV	11/21/08 10:22	MS081101-2	.05		.05006	mg/L	100.1	90	110			
WG256089ICB	ICB	11/21/08 10:27				U	mg/L		-0.00022	0.00022			
WG256089LFB	LFB	11/21/08 10:38	MS081108-3	.05		.04444	mg/L	88.9	85	115			
L72964-01AS	AS	11/21/08 10:54	MS081108-3	.5	1.76	2.279	mg/L	103.8	70	130			
L72964-01ASD	ASD	11/21/08 10:59	MS081108-3	.5	1.76	2.304	mg/L	108.8	70	130	1.09	20	

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG256081</b>													
WG256081ICV	ICV	11/20/08 20:11	II081119-1	2		1.975	mg/L	98.8	95	105			
WG256081ICB	ICB	11/20/08 20:15				U	mg/L		-0.03	0.03			
WG256081LFB	LFB	11/20/08 20:27	II081117-2	.5		.51	mg/L	102	85	115			
L72957-02AS	AS	11/20/08 21:27	II081117-2	.5	U	.533	mg/L	106.6	85	115			
L72957-02ASD	ASD	11/20/08 21:31	II081117-2	.5	U	.53	mg/L	106	85	115	0.56	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72957**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72957-01</b>	WG255842	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255711	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255774	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255978	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG256136	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255763	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255711	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
<b>L72957-02</b>	WG255681	Cyanide, total	M335.4 - Manual Distillation	DA	Sample required dilution due to reactivity.
	WG256010	Uranium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG255891	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255711	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255774	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255978	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG256136	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255763	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG255711	Total Alkalinity	SM2320B - Titration	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: **L72957**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L72957-03</b>	WG255681	Cyanide, total	M335.4 - Manual Distillation	DA	Sample required dilution due to reactivity.
	WG256010	Uranium, dissolved	M200.8 ICP-MS	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [ $<$ MDL].
	WG255891	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG255711	Conductivity @25C	SM2510B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $<$ 10x MDL).
	WG255774	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $<$ 10x MDL).
	WG255978	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $<$ 10x MDL).
	WG256136	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $<$ 10x MDL).
	WG255763	Sulfate	SM4500 SO4-D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $<$ 10x MDL).
	WG255711	Total Alkalinity	SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ( $<$ 10x MDL).
<b>L72957-04</b>	WG255962	Cyanide, total	M335.4 - Colorimetric w/ distillation	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: **L72957**

No certification qualifiers associated with this analysis

**FMI Gold & Copper - Sierrita**  
OJ06DZ

ACZ Project ID: L72957  
Date Received: 11/11/2008  
Received By:  
Date Printed: 11/11/2008

**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) Is the trip blank for Cyanide present?	X		
12) Is the trip blank for VOA present?			X
13) Are samples requiring no headspace, headspace free?			X
14) 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)
2123	3.7	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**  
OJ06DZ

ACZ Project ID: L72957  
Date Received: 11/11/2008  
Received By:

**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
L72957-01	MH-11		Y		Y							<input type="checkbox"/>
L72957-02	EQB111008		Y		Y							<input type="checkbox"/>
L72957-03	TB111008		Y		Y							<input type="checkbox"/>
L72957-04	TB061507-02		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: \_\_\_\_\_



December 02, 2008

## Report to:

Bill Dorris

FMI Gold &amp; Copper - Sierrita

P.O. Box 527

Green Valley, AZ 85622-0527

## Bill to:

Accounts Payable

FMI Gold &amp; Copper - Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson

Project ID: OJ069R

ACZ Project ID: L72783

Bill Dorris:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 31, 2008. This project has been assigned to ACZ's project number, L72783. Please reference this number in all future inquiries.

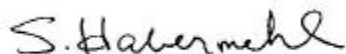
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L72783. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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.

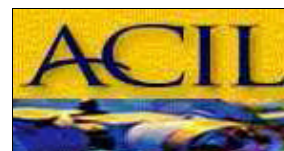
This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 02, 2009. 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: OJ069R

Sample ID: MO-2007-3B

ACZ Sample ID: **L72783-01**

Date Sampled: 10/22/08 09:20

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	42.4	H	*	mg/L	0.5	3	11/26/08 1:38	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-4A

ACZ Sample ID: **L72783-02**

Date Sampled: 10/22/08 13:25

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	40.1	H	*	mg/L	0.5	3	11/26/08 2:32	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-4B

ACZ Sample ID: **L72783-03**

Date Sampled: 10/22/08 12:50

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	37.4	H	*	mg/L	0.5	3	11/26/08 2:50	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-4C

ACZ Sample ID: **L72783-04**

Date Sampled: 10/22/08 11:19

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	84.9	H	*	mg/L	0.5	3	11/26/08 3:08	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: DUP102208A

ACZ Sample ID: **L72783-05**

Date Sampled: 10/22/08 00:00

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.6	H	*	mg/L	0.5	3	11/26/08 3:26	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-5B

ACZ Sample ID: **L72783-06**

Date Sampled: 10/23/08 11:08

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	412	H	*	mg/L	5	30	11/26/08 3:44	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-5C

ACZ Sample ID: **L72783-07**

Date Sampled: 10/23/08 13:17

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	257	H	*	mg/L	3	10	11/26/08 4:03	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-6A

ACZ Sample ID: **L72783-08**

Date Sampled: 10/23/08 08:14

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	18.6	H	*	mg/L	0.5	3	11/26/08 4:57	ccp

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: MO-2007-6B

ACZ Sample ID: **L72783-09**

Date Sampled: 10/23/08 09:25

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	63.2	H	*	mg/L	0.5	3	11/26/08 5:15	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: I-10

ACZ Sample ID: **L72783-10**

Date Sampled: 10/28/08 08:30

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	526	H	*	mg/L	5	30	11/26/08 5:33	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-8

ACZ Sample ID: **L72783-11**

Date Sampled: 10/28/08 11:49

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	26.3	H	*	mg/L	0.5	3	11/26/08 5:51	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-9

ACZ Sample ID: **L72783-12**

Date Sampled: 10/28/08 14:17

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	74.8	H	*	mg/L	0.5	3	11/26/08 6:46	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-10

ACZ Sample ID: **L72783-13**

Date Sampled: 10/28/08 10:21

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	97.1	H	*	mg/L	0.5	3	11/26/08 7:04	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: M-20

ACZ Sample ID: **L72783-14**

Date Sampled: 10/28/08 12:30

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	1660	H	*	mg/L	30	100	11/26/08 7:22	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: DUP102808A

ACZ Sample ID: **L72783-15**

Date Sampled: 10/28/08 00:00

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	26.2	H	*	mg/L	0.5	3	11/26/08 7:40	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-1

ACZ Sample ID: **L72783-16**

Date Sampled: 10/30/08 09:36

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	121			mg/L	3	10	11/26/08 8:34	ccp

**Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-2

ACZ Sample ID: **L72783-17**

Date Sampled: 10/30/08 08:57

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	30.1			mg/L	0.5	3	11/26/08 8:52	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-3

ACZ Sample ID: **L72783-18**

Date Sampled: 10/30/08 10:10

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.8			mg/L	0.5	3	11/26/08 9:10	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: ESP-4

ACZ Sample ID: **L72783-19**

Date Sampled: 10/30/08 08:11

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	489			mg/L	5	30	11/26/08 9:28	ccp

**Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ069R

Sample ID: DUP103008A

ACZ Sample ID: **L72783-20**

Date Sampled: 10/30/08 00:00

Date Received: 10/31/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	30.0			mg/L	0.5	3	11/26/08 9:47	ccp

**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.

## 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.

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

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

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72783**

Project ID: OJ069R

Sulfate		300.0 - Ion Chromatography											
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG256365													
WG256365ICV	ICV	11/25/08 12:54	WI081031-2	50		51.41	mg/L	102.8	90	110			
WG256365ICB	ICB	11/25/08 13:12				.59	mg/L		-1.5	1.5			
WG256365ICV1	ICV	11/25/08 14:46	WI081031-2	50		50.63	mg/L	101.3	90	110			
WG256365ICB1	ICB	11/25/08 15:04				U	mg/L		-1.5	1.5			
WG256365ICV2	ICV	11/26/08 19:05	WI081031-2	50		51.23	mg/L	102.5	90	110			
WG256365ICB2	ICB	11/26/08 19:23				U	mg/L		-1.5	1.5			
WG256368													
WG256368ICV	ICV	11/26/08 0:43	WI081031-2	50		51.32	mg/L	102.6	90	110			
WG256368ICB	ICB	11/26/08 1:02				U	mg/L		-1.5	1.5			
WG256368LFB	LFB	11/26/08 1:20	WI081125-2	30		31.1	mg/L	103.7	90	110			
L72783-01AS	AS	11/26/08 1:56	WI081125-2	30	42.4	71.37	mg/L	96.6	90	110			
L72783-01DUP	DUP	11/26/08 2:14			42.4	42.19	mg/L				0.5	20	
L72783-11AS	AS	11/26/08 6:09	WI081125-2	30	26.3	56.12	mg/L	99.4	90	110			
L72783-11DUP	DUP	11/26/08 6:27			26.3	26.35	mg/L				0.2	20	

**FMI Gold & Copper - Sierrita**ACZ Project ID: **L72783**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L72783-01	WG256368	Sulfate	300.0 - 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.
L72783-02	WG256368	Sulfate	300.0 - 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.
L72783-03	WG256368	Sulfate	300.0 - 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.
L72783-04	WG256368	Sulfate	300.0 - 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.
L72783-05	WG256368	Sulfate	300.0 - 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.
L72783-06	WG256368	Sulfate	300.0 - 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.
L72783-07	WG256368	Sulfate	300.0 - 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.
L72783-08	WG256368	Sulfate	300.0 - 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.
L72783-09	WG256368	Sulfate	300.0 - 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.
L72783-10	WG256368	Sulfate	300.0 - 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.
L72783-11	WG256368	Sulfate	300.0 - 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.
L72783-12	WG256368	Sulfate	300.0 - 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.
L72783-13	WG256368	Sulfate	300.0 - 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.
L72783-14	WG256368	Sulfate	300.0 - 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.
L72783-15	WG256368	Sulfate	300.0 - 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.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L72783**

No certification qualifiers associated with this analysis



**FMI Gold & Copper - Sierrita**  
OJ069R

ACZ Project ID: L72783  
Date Received: 10/31/2008  
Received By:  
Date Printed: 10/31/2008

**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) Is the trip blank for Cyanide present?			
12) Is the trip blank for VOA present?			
13) Are samples requiring no headspace, headspace free?			
14) Do the samples that require a Foreign Soils Permit have one?			

**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)

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**  
OJ069R

ACZ Project ID: L72783  
Date Received: 10/31/2008  
Received By:

**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
L72783-01	MO-2007-3B									X		<input type="checkbox"/>
L72783-02	MO-2007-4A									X		<input type="checkbox"/>
L72783-03	MO-2007-4B									X		<input type="checkbox"/>
L72783-04	MO-2007-4C									X		<input type="checkbox"/>
L72783-05	DUP102208A									X		<input type="checkbox"/>
L72783-06	MO-2007-5B									X		<input type="checkbox"/>
L72783-07	MO-2007-5C									X		<input type="checkbox"/>
L72783-08	MO-2007-6A									X		<input type="checkbox"/>
L72783-09	MO-2007-6B									X		<input type="checkbox"/>
L72783-10	I-10									X		<input type="checkbox"/>
L72783-11	M-8									X		<input type="checkbox"/>
L72783-12	M-9									X		<input type="checkbox"/>
L72783-13	M-10									X		<input type="checkbox"/>
L72783-14	M-20									X		<input type="checkbox"/>
L72783-15	DUP102808A									X		<input type="checkbox"/>
L72783-16	ESP-1									X		<input type="checkbox"/>
L72783-17	ESP-2									X		<input type="checkbox"/>
L72783-18	ESP-3									X		<input type="checkbox"/>
L72783-19	ESP-4									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: \_\_\_\_\_



Laboratories, Inc.

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

170783

# CHAIN of CUSTODY

## Report to:

Name: Bill Dorris  
Company: Freight McMoran Sierrita  
E-mail: billy-dorris@fmi.com

Address: 6200 W. Duval mine Rd  
Green Valley AZ 85614  
Telephone: 520 648 8873

## Copy of Report to:

Name: Dan Simpson  
Company: Hydro Geo Chem

E-mail: dans@hginc.com  
Telephone: 520-293-1500 Ext 133

## 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.

## PROJECT INFORMATION

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

Quote #:  
Project/PO #: OJ069R  
Reporting state for compliance testing:  
Sampler's Name:  
Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers																	
MO-2007-3B	10-22-08/9:20	GW	1																	
MO-2007-4A	10-22-08/13:25	GW	1																	
MO-2007-4B	10-22-08/12:50	GW	1																	
MO-2007-4C	10-22-08/11:19	GW	1																	
DUP102208A	10-22-08	GW	1																	
MO-2007-5B	10-23-08/11:08	GW	1																	
MO-2007-5C	10-23-08/13:17	GW	1																	
MO-2007-6A	10-23-08/8:14	GW	1																	
MO-2007-6B	10-23-08/9:25	GW	1																	
I-10	10-28-08/8:30	GW	1																	

SD4 by  
EPA 300  
375

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

## REMARKS/ SAMPLE DISCLOSURES

PAGE  
of

UPS TRACKING # 1Z 867 7E4 23 1000 5994

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>Billy F. Dorris</u>	<u>10-30-08/15:00</u>	<u>MJG</u>	<u>10-31-08</u>
			<u>10:10</u>

December 16, 2008

## Report to:

Dan Simpson  
Hydro Geo Chem Inc.  
51 W. Wetmore Rd.  
Tucson, AZ 85705

## Bill to:

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

cc: Jim Norris, Ned Hall, Bill Dorris

Project ID: OJ03235

ACZ Project ID: L73166

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on November 20, 2008. This project has been assigned to ACZ's project number, L73166. Please reference this number in all future inquiries.

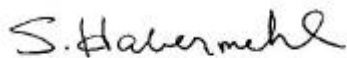
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L73166. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 January 16, 2009. 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: OJ03235

Sample ID: CW-3

ACZ Sample ID: **L73166-01**

Date Sampled: 10/06/08 12:25

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	60.1	H	*	mg/L	0.5	3	12/11/08 21:22	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-01.****Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: NP-2

ACZ Sample ID: **L73166-02**

Date Sampled: 10/06/08 14:25

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	42.1	H	*	mg/L	0.5	3	12/11/08 21:40	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-02.****Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: CW-6

ACZ Sample ID: **L73166-03**

Date Sampled: 10/07/08 09:10

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	54.6	H	*	mg/L	0.5	3	12/11/08 21:58	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-03.****Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: DUP100708

ACZ Sample ID: **L73166-04**

Date Sampled: 10/07/08 00:00

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	54.7	H	*	mg/L	0.5	3	12/11/08 22:16	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-04.****Arizona license number: AZ0102**



**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: CW-10

ACZ Sample ID: **L73166-05**

Date Sampled: 10/07/08 10:45

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	50.3	H	*	mg/L	0.5	3	12/11/08 23:11	aml

**Note:** This report is for additional analysis of the sample previously reported as ACZ project L72335-05.

Arizona license number: AZ0102

**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: CW-9

ACZ Sample ID: **L73166-06**

Date Sampled: 10/07/08 11:50

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	46.0	H	*	mg/L	0.5	3	12/11/08 23:29	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-06.****Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: HAVEN GOLF

ACZ Sample ID: **L73166-07**

Date Sampled: 10/07/08 13:02

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	99	H	*	mg/L	1	5	12/13/08 21:11	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-07.****Arizona license number: AZ0102**

**FMI Gold & Copper - Sierrita**

Project ID: OJ03235

Sample ID: FB100708

ACZ Sample ID: **L73166-08**

Date Sampled: 10/07/08 12:55

Date Received: 11/20/08

Sample Matrix: Ground Water

## Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		UH	*	mg/L	0.5	3	12/12/08 0:05	aml

**Note: This report is for additional analysis of the sample previously reported as ACZ project L72335-09.****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.

## 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.

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: **L73166**

Project ID: OJ03235

**Sulfate**

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG257130</b>													
WG257130ICV	ICV	12/09/08 14:20	WI081031-2	50		50.51	mg/L	101	90	110			
WG257130ICB	ICB	12/09/08 14:38				.59	mg/L		-1.5	1.5			
WG257130ICV1	ICV	12/11/08 17:09	WI081031-2	50		51.04	mg/L	102.1	90	110			
WG257130ICB1	ICB	12/11/08 17:27				U	mg/L		-1.5	1.5			
WG257130LFB	LFB	12/11/08 17:45	WI081125-2	30		30.17	mg/L	100.6	90	110			
L73166-04AS	AS	12/11/08 22:34	WI081125-2	30	54.7	81.65	mg/L	89.8	90	110			
L73166-04DUP	DUP	12/11/08 22:53			54.7	54.39	mg/L				0.6	20	
WG257130ICV2	ICV	12/13/08 14:27	WI081031-2	50		51.05	mg/L	102.1	90	110			
WG257130ICB2	ICB	12/13/08 14:45				U	mg/L		-1.5	1.5			
WG257130ICV3	ICV	12/13/08 17:52	WI081031-2	50		50.97	mg/L	101.9	90	110			
WG257130ICB3	ICB	12/13/08 18:10				U	mg/L		-1.5	1.5			
L73046-05AS	AS	12/13/08 18:46	WI081125-2	150	190	334.4	mg/L	96.3	90	110			
L73046-05DUP	DUP	12/13/08 19:04			190	198.6	mg/L				4.4	20	

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L73166**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L73166-01</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-02</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-03</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-04</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-05</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-06</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-07</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.
<b>L73166-08</b>	WG257130	Sulfate	300.0 - Ion Chromatography	H1	Sample analysis performed past holding time.

**FMI Gold & Copper - Sierrita**

ACZ Project ID: **L73166**

No certification qualifiers associated with this analysis



L73166-Relog  
 -L72335

10311-20-08

<b>ACZ Laboratories, Inc.</b>		<b>CHAIN of CUSTODY</b>																																									
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-6493																																											
<b>Report to:</b>																																											
Name: Dan Simpson		Address: 51 W Wetmore Rd																																									
Company: Hydro Geo Chem, Inc		Tucson, AZ 85706																																									
E-mail: dana@hgcline.com		Telephone: 520-293-1500 x133																																									
<b>Copy of Report to:</b>																																											
Name: Jim Norris, Ned Hall, Bill Dorris		E-mail: jinn@hgcline.com, billy_dorris@fmi.com																																									
Company: HGC / FMI		Telephone: 520-293-1500 x112, 520-648-8873																																									
<b>Invoice to:</b>																																											
Name: Ned Hall		Address: 8200 Duval Mine Road																																									
Company: FMI		PO Box 527, Green Valley, AZ 85622																																									
E-mail: ned_hall@fmi.com		Telephone: 520-648-8873																																									
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? <span style="float: right;">YES <input type="checkbox"/></span> <span style="float: right;">NO <input type="checkbox"/></span> 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.																																											
<b>PROJECT INFORMATION</b>		<b>ANALYSES REQUESTED (attach list or use quote number)</b>																																									
Quote #: Sierra Sulfate		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th># of Containers</th> <th>SO4</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>		# of Containers	SO4																																						
# of Containers	SO4																																										
Project/PO #: 0J0325																																											
Reporting state for compliance testing: AZ																																											
Sampler's Name: John Villinski																																											
Are any samples NRC licensable material? No																																											
<b>SAMPLE IDENTIFICATION</b>	<b>DATE:TIME</b>	<b>Matrix</b>																																									
CW-3	10-6-08/12:25	GW	2																																								
NP-2	10-6-08/14:25	GW	2																																								
CW-6	10-7-08/9:10	GW	2																																								
DUP100708	10-7-08	GW	2																																								
CW-10	10-7-08/10:45	GW	2																																								
CW-9	10-7-08/11:50	GW	2																																								
HAVEN GOLP	10-7-08/13:02	GW	2																																								
BQB100708	10-7-08/12:55	GW	1																																								
FB100708	10-8-08/12:55	GW	1																																								
Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)																																											
<b>REMARKS</b>																																											
Please refer to ACZ's terms & conditions located on the reverse side of this COC.																																											
<b>RELINQUISHED BY:</b>		<b>RECEIVED BY:</b>																																									
DATE:TIME		DATE:TIME																																									
10/8/08-14:30		10-9-08 9:14																																									

FRMAD050.03.05.02

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

## **APPENDIX C**

### **HYDRO GEO CHEM, INC. GROUNDWATER SAMPLING FORMS**





WELL DATA	
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FIELD SAMPLING DATA

**SAMPLE INFORMATION**

Additional Comments: Pump running due to over seeding.  
Ask Ed Vera to measure WH



**HYDRO GEO CHEM, INC.**  
**Groundwater Sampling Form**

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-6-08
Well ID:	CW-3	Weather:	clear
ADWR No.	627483	Collected By:	John Villinski / Mark O'Boyle

**WELL DATA**

Well Depth (ft bls):	515	Time:	10:45
Casing Diameter (in):	10"	Point of Measurement:	TOC
Static Water Level (ft bmp):	271.78	GPS:	
1 Casing Volume (gals):	<del>213</del> 2440	Elevation:	
3 Casing Volumes (gals):	<del>213</del> 7319		

**FIELD SAMPLING DATA**

pump on 11:09 @ 100 GPM

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°F)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:12	100	300	6.89	77.1	458	clear	None	
11:17	100	800	7.36	77.2	434	clear	None	
11:24	100	1500	7.45	76.7	426	"	"	
11:31	100	2200	7.54	76.9	429	"	"	
11:38	100	2900	7.52	77.3	429	"	"	
11:45	100	3600	7.56	77.1	428	"	"	
11:52	100	4300	7.56	77.0	429	"	"	
11:59	100	5000	7.57	77.5	425	"	"	
12:06	100	5700	7.63	76.8	429	"	"	
12:13	100	6400	7.59	77.5	428	"	"	
12:22	100	7300	7.50	77.5	430	"	"	

**SAMPLE INFORMATION**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
CW-3	12:25	Plastic	250 ml	1	EPA 300.0	None	Filtered / Un
		Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments:



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-7-08
Well ID:	CW-6	Weather:	Clear
ADWR No.	627485	Collected By:	John Villanar

### WELL DATA

Well Depth (ft bls):	840'	Time:	8:35
Casing Diameter (in):	16"	Point of Measurement:	TOC
Static Water Level (ft bmp):	256.30	GPS:	
1 Casing Volume (gals):	6246	Elevation:	
3 Casing Volumes (gals):	18738 (27 min)		

### Pump on @ 7:42 @ 700 GPM FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
8:43	700	700	7.26	26.0	404	clear	no	
8:48	750	4450	7.40	26.5	409	clear	no	
8:53	750	8200	7.45	26.8	413	clear	no	
8:58	750	11950	7.48	26.7	420	clear	no	
9:03	750	15700	7.50	26.7	426	clear	no	
9:08	750	19450	7.52	26.6	431			
			TOTAL Discharge		20950			

### SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
CW-6	9:10	Plastic	250 ml	1	EPA 300.0	None	Filtered
CW-6	9:10	Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments: Well has been off > 12 hrs  
Also DUP was taken @ 9:12



SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	None	Filtered
		Plastic	250 ml	1	EPA 300.0	None	Unfiltered

---



SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	None	Filtered
		Plastic	250 ml	1	EPA 300.0	None	Unfiltered





**HYDRO GEO CHEM, INC.**  
**Groundwater Sampling Form**

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-7-08
Well ID:	CW-9	Weather:	Sunny
ADWR No.	588121	Collected By:	John Villinski

**WELL DATA**

Well Depth (ft bls):	1000'	Time:	11:05
Casing Diameter (in):	20"	Point of Measurement:	TOC
Static Water Level (ft bmp):	316.05	GPS:	
1 Casing Volume (gals):	11436	Elevation:	
3 Casing Volumes (gals):	34309		

Pump on @ 11:12

**FIELD SAMPLING DATA**

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:15	1500	4500	7.44	30.5	400	clear	no	
11:20	1000	9500	7.50	28.1	388	"	"	
11:25	1000	14500	7.51	27.5	394	"	"	
11:30	1000	19500	7.48	27.3	395	"	"	
11:35	1000	24500	7.49	28.1	394	"	"	
11:40	1000	29500	7.48	27.6	395	"	"	
11:45	1000	34500	7.50	27.7	395	"	"	

**SAMPLE INFORMATION**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
CW-9	11:50	Plastic	250 ml	1	EPA 300.0	None	Filtered
CW-9	11:56	Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments: well off > 12 hrs



**HYDRO GEO CHEM, INC.**  
**Groundwater Sampling Form**

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-7-08
Well ID:	CW-10	Weather:	Clear
ADWR No.	207982	Collected By:	John Villinski

**WELL DATA**

Well Depth (ft bis):	1140'	Time:	9:30
Casing Diameter (in):	16"	Point of Measurement:	TOC
Static Water Level (ft bmp):	190.65	GPS:	
1 Casing Volume (gals):	10085	Elevation:	
3 Casing Volumes (gals):	30284		

10:20 start @ 1400 **FIELD SAMPLING DATA**

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:22	1400	2800	7.52	31.7	374	Clear	no	
10:27	1400	9800	7.58	31.0	373	"	"	
10:32	1400	16800	7.57	30.7	383	"	"	
10:37	1500	24300	7.57	31.0	384	"	"	
10:42	1500	31800	7.59	30.5	380			
10:45	sample							

**SAMPLE INFORMATION**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
CW-10	10:45	Plastic	250 ml	1	EPA 300.0	None	Filtered
CW-10	10:45	Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments:

well off for > 12 hrs



WELL DATA	
WELL NO.	1
WELL NAME	1
WELL TYPE	1
WELL STATUS	1
WELL LOCATION	1
WELL DEPTH	1
WELL DIAMETER	1
WELL PERFORATION	1
WELL PRODUCTION	1
WELL HISTORY	1
WELL COMMENTS	1

FIELD SAMPLING DATA

SAMPLE INFORMATION	
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

Additional Comments: Overseeding golf course, so all wells are  
pumping and cannot be shut off. Ask D. Hansen for  
Wb measurement



**HYDRO GEO CHEM, INC.**  
**Groundwater Sampling Form**

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-9-08
Well ID:	GV-02-GUDWIN	Weather:	Sunny
ADWR No.	603429	Collected By:	John Villinski

**WELL DATA**

Well Depth (ft bis):	560'	Time:	N/A
Casing Diameter (in):	16"	Point of Measurement:	
Static Water Level (ft bmp):	N/A	GPS:	
1 Casing Volume (gals):		Elevation:	
3 Casing Volumes (gals):			

**FIELD SAMPLING DATA**

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
14:05	N/A	N/A	7.18	24.2	599	clear	no	couple black flakes

**SAMPLE INFORMATION**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
GV-02-GUDWIN	14:05	Plastic	250 ml	1	EPA 300.0	None	Filtered
17		Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments: Well is running for overseeding of golf courses. Ask Doug Hansen to get WL



WELL DATA	
WELL NO.	1
WELL NAME	1
WELL TYPE	1
WELL STATUS	1
WELL LOCATION	1
WELL DEPTH	1
WELL DIAMETER	1
WELL AREA	1
WELL VOLUME	1
WELL WEIGHT	1
WELL LENGTH	1
WELL WIDTH	1
WELL HEIGHT	1
WELL THICKNESS	1
WELL DENSITY	1
WELL TEMPERATURE	1
WELL PRESSURE	1
WELL FLOW RATE	1
WELL FLOW DIRECTION	1
WELL FLOW VELOCITY	1
WELL FLOW ACCELERATION	1
WELL FLOW DECELERATION	1
WELL FLOW JERK	1
WELL FLOW SMOOTHNESS	1
WELL FLOW STABILITY	1
WELL FLOW RELIABILITY	1
WELL FLOW ACCURACY	1
WELL FLOW PRECISION	1
WELL FLOW RESOLUTION	1
WELL FLOW SENSITIVITY	1
WELL FLOW DYNAMIC RANGE	1
WELL FLOW LINEARITY	1
WELL FLOW Hysteresis	1
WELL FLOW REPEATABILITY	1
WELL FLOW DRIFT	1
WELL FLOW NOISE	1
WELL FLOW INTERFERENCE	1
WELL FLOW CROSS-SENSITIVITY	1
WELL FLOW TEMPERATURE COEFFICIENT	1
WELL FLOW PRESSURE COEFFICIENT	1
WELL FLOW FLOW RATE COEFFICIENT	1
WELL FLOW FLOW DIRECTION COEFFICIENT	1
WELL FLOW FLOW VELOCITY COEFFICIENT	1
WELL FLOW FLOW ACCELERATION COEFFICIENT	1
WELL FLOW FLOW DECELERATION COEFFICIENT	1
WELL FLOW FLOW JERK COEFFICIENT	1
WELL FLOW FLOW SMOOTHNESS COEFFICIENT	1
WELL FLOW FLOW STABILITY COEFFICIENT	1
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WELL FLOW FLOW INTERFERENCE COEFFICIENT	1
WELL FLOW FLOW CROSS-SENSITIVITY COEFFICIENT	1
WELL FLOW FLOW TEMPERATURE COEFFICIENT	1
WELL FLOW FLOW PRESSURE COEFFICIENT	1
WELL FLOW FLOW FLOW RATE COEFFICIENT	1
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WELL FLOW FLOW FLOW FLOW JERK COEFFICIENT	1
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WELL FLOW FLOW FLOW FLOW FLOW DECELERATION COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW JERK COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW SMOOTHNESS COEFFICIENT	1
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WELL FLOW FLOW FLOW FLOW FLOW RELIABILITY COEFFICIENT	1
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WELL FLOW FLOW FLOW FLOW FLOW RESOLUTION COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW SENSITIVITY COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW DYNAMIC RANGE COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW LINEARITY COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW Hysteresis COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW REPEATABILITY COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW DRIFT COEFFICIENT	1
WELL FLOW FLOW FLOW FLOW FLOW NOISE COEFFICIENT	1

FIELD SAMPLING DATA

SAMPLE INFORMATION	
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77	78
79	80
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83	84
85	86
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95	96
97	98
99	100

Additional Comments: Well is running for over seeding golf courses,  
Ask D. Hansen for Wt measurement.



**HYDRO GEO CHEM, INC.**  
**Groundwater Sampling Form**

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-7-08
Well ID:	HAVEN GOLF	Weather:	Sunny
ADWR No.	515867	Collected By:	John Villinski

**WELL DATA**

Well Depth (ft bls):	500"	Time:	12:35
Casing Diameter (in):	14"	Point of Measurement:	NA
Static Water Level (ft bmp):	NA	GPS:	
1 Casing Volume (gals):	NA	Elevation:	
3 Casing Volumes (gals):			

**FIELD SAMPLING DATA**

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
12:40	800	2000	7.31	30.4	583			
12:45	800	8000	7.30	29.4	585			
12:50	800	12000	7.31	28.6	591			
13:00	1200	24000	7.31	27.8	588			
								Parameters stable
								collect sample

**SAMPLE INFORMATION**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
HAVEN GOLF	13:02	Plastic	250 ml	1	EPA 300.0	None	Filtered
HAVEN GOLF	13:02	Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments: Well is not being used much. No WCs if it is obstructed



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Project No.	7830000	Client:	Freeport-McMoRan Sierrita Inc.
Task No.	6.2	Date:	10-6-08
Well ID:	NP-2	Weather:	Clear, Warm
ADWR No.	605 898	Collected By:	John Villinski/Mark O'Boyle

### WELL DATA

Well Depth (ft bls):	356.24 515	Time:	13:30
Casing Diameter (in):	12"	Point of Measurement:	TOC
Static Water Level (ft bmp):	515.00 356.24	GPS:	
1 Casing Volume (gals):	901	Elevation:	
3 Casing Volumes (gals):	2704		

### pump on 13:39 @ 80 GPM FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°F)	Specific Conductance (µS/cm)	Color	Odor	Comment
13:40	40	80	7.65	78.0	412	clear	none	few black particles
13:45	80	480	7.63	77.4	412	clear	none	"
13:50	70	830	7.66	77.3	411	clear	none	"
13:55	60	1130	7.65	77.4	408	"	"	"
14:00	60	1430	7.67	77.0	406	"	"	"
14:05	60	1730	7.66	77.1	404	"	"	"
14:10	60	2030	7.61	77.1	405	"	"	2 black particles
14:15	60	2330	7.57	77.4	404	"	"	1 black particle
14:20	60	2730	7.57	77.2	405	"	"	3 black particles

### SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
NP-2	14:25	Plastic	250 ml	1	EPA 300.0	None	Filtered
NP-2	14:25	Plastic	250 ml	1	EPA 300.0	None	Unfiltered

Additional Comments:



Additional Comments: \_\_\_\_\_





WELL DATA	
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FIELD SAMPLING DATA

## SAMPLE INFORMATION

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **APPENDIX D**

### **TIME SERIES GRAPHS OF SULFATE CONCENTRATION AND GROUNDWATER ELEVATION**



## **TABLE OF CONTENTS**

### **TABLE**

- D.1 Sulfate Concentration and Groundwater Elevation Data

### **FIGURES**

- D.1 Sulfate Concentration and Groundwater Elevation Over Time for Wells CW-6, CW-7, CW-8, and CW-9
- D.2 Sulfate Concentration and Groundwater Elevation Over Time for Wells CW-10, GV-1-GVDWID, GV-2-GVDWID, and GV-SI-GVDWID
- D.3 Sulfate Concentration and Groundwater Elevation Over Time for Wells ESP-1, ESP-2, ESP-3, and ESP-4
- D.4 Sulfate Concentration and Groundwater Elevation Over Time for Wells MO-2007-1A, MO-2007-1B, MO-2007-1C, and MO-2007-2
- D.5 Sulfate Concentration and Groundwater Elevation Over Time for Wells NP-2, MO-2007-3B, and MO-2007-3C
- D.6 Sulfate Concentration and Groundwater Elevation Over Time for Wells MO-2007-4A, MO-2007-4B, and MO-2007-4C
- D.7 Sulfate Concentration and Groundwater Elevation Over Time for Wells CW-3, MO-2007-5B, and MO-2007-5C
- D.8 Sulfate Concentration and Groundwater Elevation Over Time for Wells MO-2007-6A, MO-2007-6B, MH-28, and MH-29

**TABLE D.1**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION DATA**

Well ID	Date	Groundwater Elevation (ft amsl)	Sulfate (mg/L)
CW-6	12/04/06	2607.50	46.2
CW-6	01/03/07	2622.00	49.2
CW-6	05/14/07	2614.75	68.7
CW-6	07/10/07	2614.85	57.6
CW-6	10/02/07	2613.95	54.2
CW-6	01/08/08	2621.19	48.9
CW-6	04/15/08	2612.80	51.2
CW-6	07/08/08	2613.20	47.9
CW-6	10/07/08	2610.71	51.5
CW-7	01/03/07	2562.50	807
CW-7	05/14/07	2563.35	874
CW-7	07/10/07	2561.00	860
CW-7	10/02/07	2559.90	940
CW-7	01/08/08	2560.00	1080
CW-7	04/15/08	2561.10	900
CW-7	07/08/08	2559.10	890
CW-7	10/07/08	2557.70	Pump Offline
CW-8	01/24/07	2621.00	449
CW-8	05/14/07	2619.36	529
CW-8	07/10/07	2617.70	500
CW-8	10/02/07	2616.90	463
CW-8	01/08/08	2619.53	466
CW-8	04/15/08	2618.30	441
CW-8	07/08/08	2615.75	504
CW-8	10/07/08	2614.79	Pump Offline
CW-9	12/04/06	2528.30	44.5
CW-9	01/03/07	2530.10	44.9
CW-9	05/14/07	2524.90	47.8
CW-9	07/10/07	2524.10	46.7
CW-9	10/02/07	2523.60	46.4
CW-9	01/08/08	2525.48	47.3
CW-9	04/15/08	2526.30	43.7
CW-9	07/08/08	2518.70	44.1
CW-9	10/07/08	2518.25	43.5
CW-10	12/04/06	2681.75	37.2
CW-10	01/24/07	2691.30	48.6
CW-10	05/14/07	2672.20	52.8
CW-10	07/10/07	2669.71	51.7
CW-10	10/02/07	2677.65	47.7
CW-10	01/08/08	2687.55	45.3
CW-10	04/15/08	2680.55	50.8
CW-10	07/08/08	2665.25	50.5
CW-10	10/07/08	2677.85	48.3
GV-1-GVDWID	01/09/07	2721.35	40.9
GV-1-GVDWID	04/10/07	2724.49	43.2
GV-1-GVDWID	07/11/07	2711.35	41.5
GV-1-GVDWID	10/03/07	NM	43.8
GV-1-GVDWID	01/07/08	2720.85	45.7
GV-1-GVDWID	04/16/08	2716.85	44.1
GV-1-GVDWID	07/07/08	2711.35	45.2
GV-1-GVDWID	11/25/08	2714.35	39
GV-2-GVDWID	01/09/07	2745.17	103
GV-2-GVDWID	04/10/07	2743.50	106
GV-2-GVDWID	07/11/07	2730.02	98
GV-2-GVDWID	10/03/07	2731.15	100
GV-2-GVDWID	01/07/08	2739.85	98
GV-2-GVDWID	04/16/08	2735.52	97
GV-2-GVDWID	07/07/08	2729.42	93.2
GV-2-GVDWID	11/25/08	2730.89	93.5
GV-SI GVDWID	01/09/07	2805.47	5.7
GV-SI GVDWID	04/10/07	2804.25	6.6
GV-SI GVDWID	07/11/07	2802.34	6.9
GV-SI GVDWID	10/03/07	2798.26	6.5
GV-SI GVDWID	01/07/08	2804.90	8
GV-SI GVDWID	04/16/08	2795.10	2
GV-SI GVDWID	08/14/08	2797.15	<0.5
GV-SI GVDWID	11/06/08	2796.65	5
ESP-1	12/04/06	2598.68	262
ESP-1	01/03/07	2597.78	242
ESP-1	05/14/07	2598.33	113
ESP-1	07/10/07	2603.76	94
ESP-1	10/12/07	2610.43	110
ESP-1	01/23/08	NM	100
ESP-1	04/18/08	NM	102
ESP-1	07/25/08	NM	104
ESP-1	10/30/08	2598.80	121
ESP-2	12/04/06	2589.06	29.6
ESP-2	01/03/07	2580.51	31.3
ESP-2	05/14/07	2583.71	28.4
ESP-2	07/10/07	2593.35	28.6
ESP-2	10/12/07	2592.34	30
ESP-2	01/23/08	2594.20	30
ESP-2	04/18/08	2593.67	27.6
ESP-2	07/25/08	2592.30	26.8
ESP-2	10/30/08	2589.78	30.1
ESP-3	12/04/06	2572.41	36.2
ESP-3	01/03/07	2573.59	37.5
ESP-3	05/14/07	2576.34	36.6
ESP-3	07/10/07	2577.75	36.6
ESP-3	10/12/07	NM	40
ESP-3	01/23/08	NM	30
ESP-3	04/18/08	NM	35.7
ESP-3	07/25/08	NM	34
ESP-3	10/30/08	2574.06	36.8

**TABLE D.1**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION DATA**

Well ID	Date	Groundwater Elevation (ft amsl)	Sulfate (mg/L)
ESP-4	03/20/07	2606.02	393
ESP-4	05/14/07	2608.71	385
ESP-4	07/10/07	2609.80	410
ESP-4	10/12/07	2606.19	360
ESP-4	01/23/08	2608.95	520
ESP-4	04/18/08	2608.21	451
ESP-4	07/25/08	2606.47	420
ESP-4	10/30/08	2603.18	489
MO-2007-1A	08/08/07	2541.28	19.2
MO-2007-1A	10/09/07	2538.83	20
MO-2007-1A	01/24/08	2541.33	20
MO-2007-1A	04/09/08	2542.93	21
MO-2007-1A	07/14/08	2539.23	16.6
MO-2007-1A	10/17/08	2536.63	17.9
MO-2007-1B	08/02/07	2540.68	18.9
MO-2007-1B	10/09/07	2537.15	30
MO-2007-1B	01/24/08	2540.41	30
MO-2007-1B	04/09/08	2541.77	35
MO-2007-1B	07/14/08	2537.84	39.8
MO-2007-1B	10/17/08	2535.18	54.3
MO-2007-1C	07/31/07	2540.47	112
MO-2007-1C	10/09/07	2537.32	90
MO-2007-1C	01/24/08	2544.58	140
MO-2007-1C	04/09/08	2545.28	149
MO-2007-1C	07/14/08	2541.85	165
MO-2007-1C	10/21/08	2539.09	146
MO-2007-2	06/14/07	2578.59	591
MO-2007-2	08/09/07	2578.31	520
MO-2007-2	10/09/07	2577.01	560
MO-2007-2	01/22/08	2576.61	530
MO-2007-2	04/17/08	2577.18	473
MO-2007-2	07/14/08	2576.48	472
MO-2007-2	10/17/08	2575.29	Pump Offline
NP-2	06/04/07	2554.78	41.2
NP-2	08/13/07	2555.05	41.7
NP-2	11/06/07	2551.46	41.7
NP-2	01/11/08	2552.89	43.5
NP-2	04/17/08	2554.36	40
NP-2	07/11/08	2551.46	40.5
NP-2	10/09/08	2550.32	39.7
MO-2007-3B	09/10/07	2551.37	38
MO-2007-3B	10/09/07	2551.20	40
MO-2007-3B	01/21/08	2555.02	40
MO-2007-3B	04/16/08	2555.05	37
MO-2007-3B	07/14/08	2553.44	37.8
MO-2007-3B	10/22/08	2550.38	42.4
MO-2007-3C	07/05/07	2553.79	136
MO-2007-3C	10/10/07	2550.24	110
MO-2007-3C	01/21/08	2555.16	130
MO-2007-3C	04/15/08	2554.72	127
MO-2007-3C	07/14/08	2552.06	126
MO-2007-3C	10/21/08	2549.91	103
MO-2007-4A	10/09/07	2615.80	37
MO-2007-4A	01/22/08	2619.78	40
MO-2007-4A	04/16/08	2618.17	33.1
MO-2007-4A	07/17/08	2615.58	34.8
MO-2007-4A	10/22/08	2613.98	40.1
MO-2007-4B	10/11/07	2614.50	37.6
MO-2007-4B	01/07/08	2619.35	60
MO-2007-4B	04/16/08	2617.09	33.6
MO-2007-4B	07/18/08	2614.62	35.5
MO-2007-4B	10/22/08	2612.80	37.4
MO-2007-4C	08/16/07	2626.36	78.7
MO-2007-4C	10/12/07	2614.71	80.1
MO-2007-4C	01/22/08	2618.76	80
MO-2007-4C	04/16/08	2616.91	80
MO-2007-4C	07/18/08	2614.56	78.6
MO-2007-4C	10/22/08	2612.25	84.9
CW-3	06/06/07	2675.89	57.9
CW-3	08/10/07	2674.04	59.5
CW-3	11/06/07	2671.73	57.5
CW-3	01/11/08	2677.31	55.7
CW-3	04/15/08	2675.25	54
CW-3	07/11/08	2670.76	56.7
CW-3	10/06/08	2669.93	56.2
MO-2007-5B	10/12/07	2675.15	402
MO-2007-5B	01/07/08	2682.26	360
MO-2007-5B	04/17/08	2678.13	390
MO-2007-5B	07/24/08	2675.74	343
MO-2007-5B	10/23/08	2672.19	412
MO-2007-5C	08/23/07	2650.29	248
MO-2007-5C	10/13/07	2654.63	265
MO-2007-5C	01/07/08	2659.82	280
MO-2007-5C	04/17/08	2663.39	259
MO-2007-5C	07/24/08	2662.49	233
MO-2007-5C	10/23/08	2659.88	257
MO-2007-6A	10/02/07	2738.89	26.5
MO-2007-6A	01/22/08	2740.10	30
MO-2007-6A	04/18/08	2739.35	20.5
MO-2007-6A	07/24/08	2737.56	16.9
MO-2007-6A	10/23/08	2735.52	18.6
MO-2007-6B	10/04/07	2722.78	93.6
MO-2007-6B	01/22/08	2728.27	80
MO-2007-6B	04/17/08	2728.30	90.4
MO-2007-6B	07/24/08	2726.01	81.5
MO-2007-6B	10/23/08	2724.88	63.2

**TABLE D.1  
SULFATE CONCENTRATION AND GROUNDWATER ELEVATION DATA**

Well ID	Date	Groundwater Elevation (ft amsl)	Sulfate (mg/L)
MH-28	11/14/06	2741.08	1860
MH-28	02/19/07	2741.08	1920
MH-28	04/17/07	2739.86	1920
MH-28	07/16/07	2739.00	1880
MH-28	10/11/07	2739.18	1950
MH-28	01/18/08	2739.46	1940
MH-28	04/08/08	2740.28	1900
MH-28	07/01/08	2740.70	1680
MH-28	10/06/08	2740.01	1910
MH-29	11/14/06	2745.10	1640
MH-29	02/19/07	2746.57	1650
MH-29	04/17/07	2746.40	1690
MH-29	07/16/07	2744.08	1650
MH-29	10/11/07	2741.23	1710
MH-29	01/18/08	2742.74	1710
MH-29	04/08/08	2742.99	1700
MH-29	07/01/08	2742.65	1730
MH-29	10/07/08	2741.63	1740

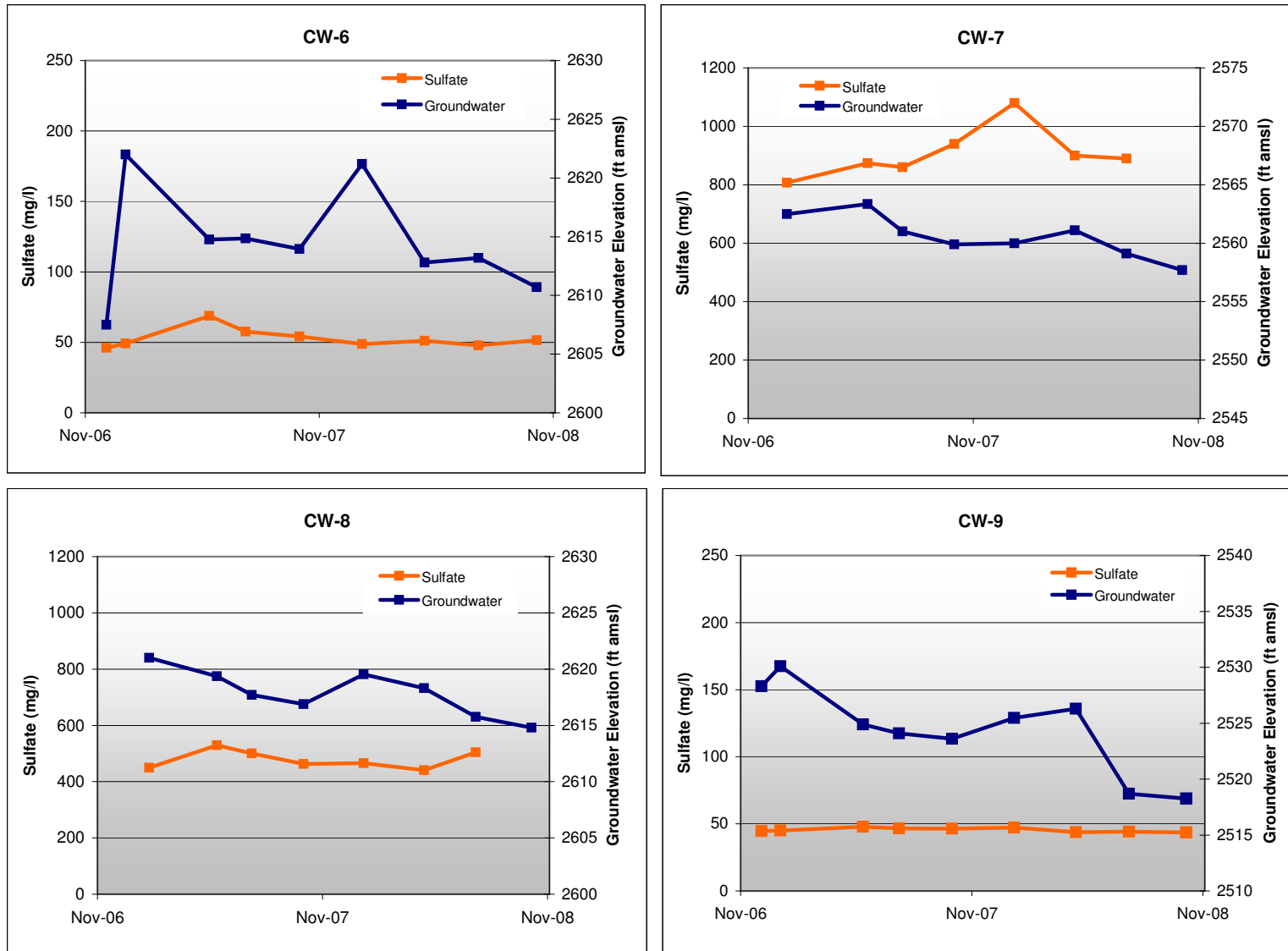
ft amsl = feet above mean sea level

mg/L = milligrams per liter

NM = Not Measured, Obstruction

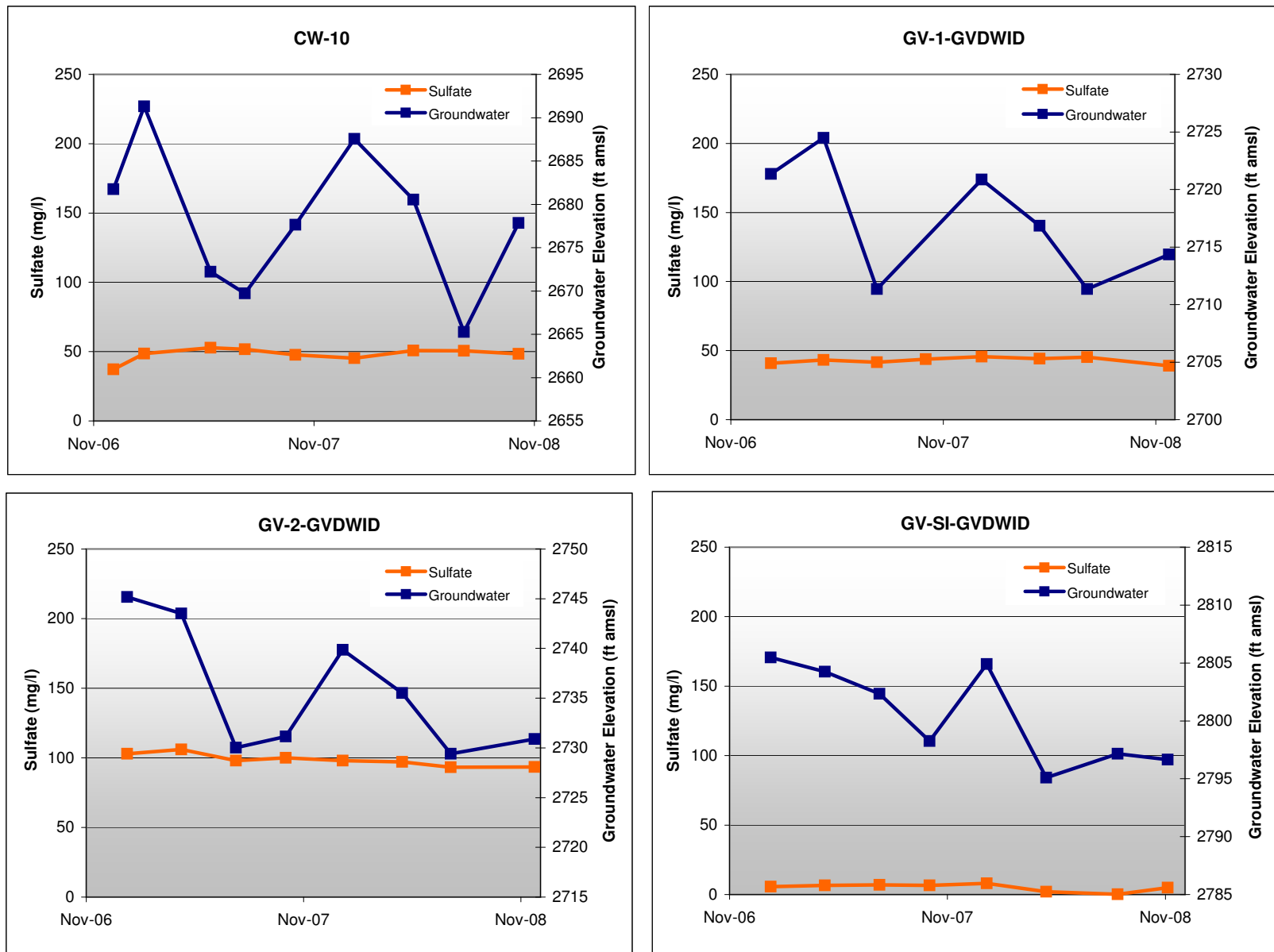
NA = Not Analyzed; pump failure

**FIGURE D.1**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**CW-6, CW-7, CW-8, AND CW-9**

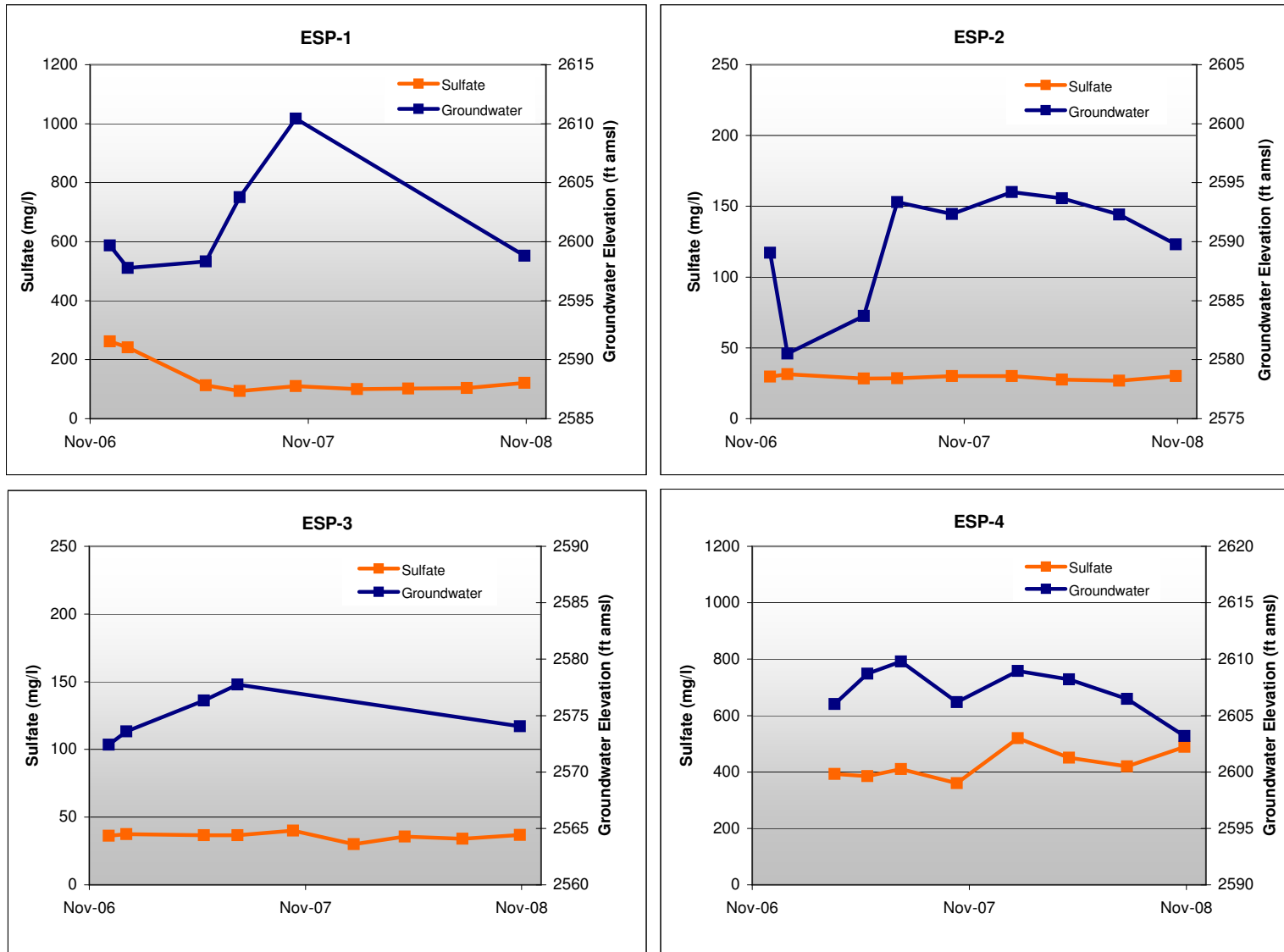




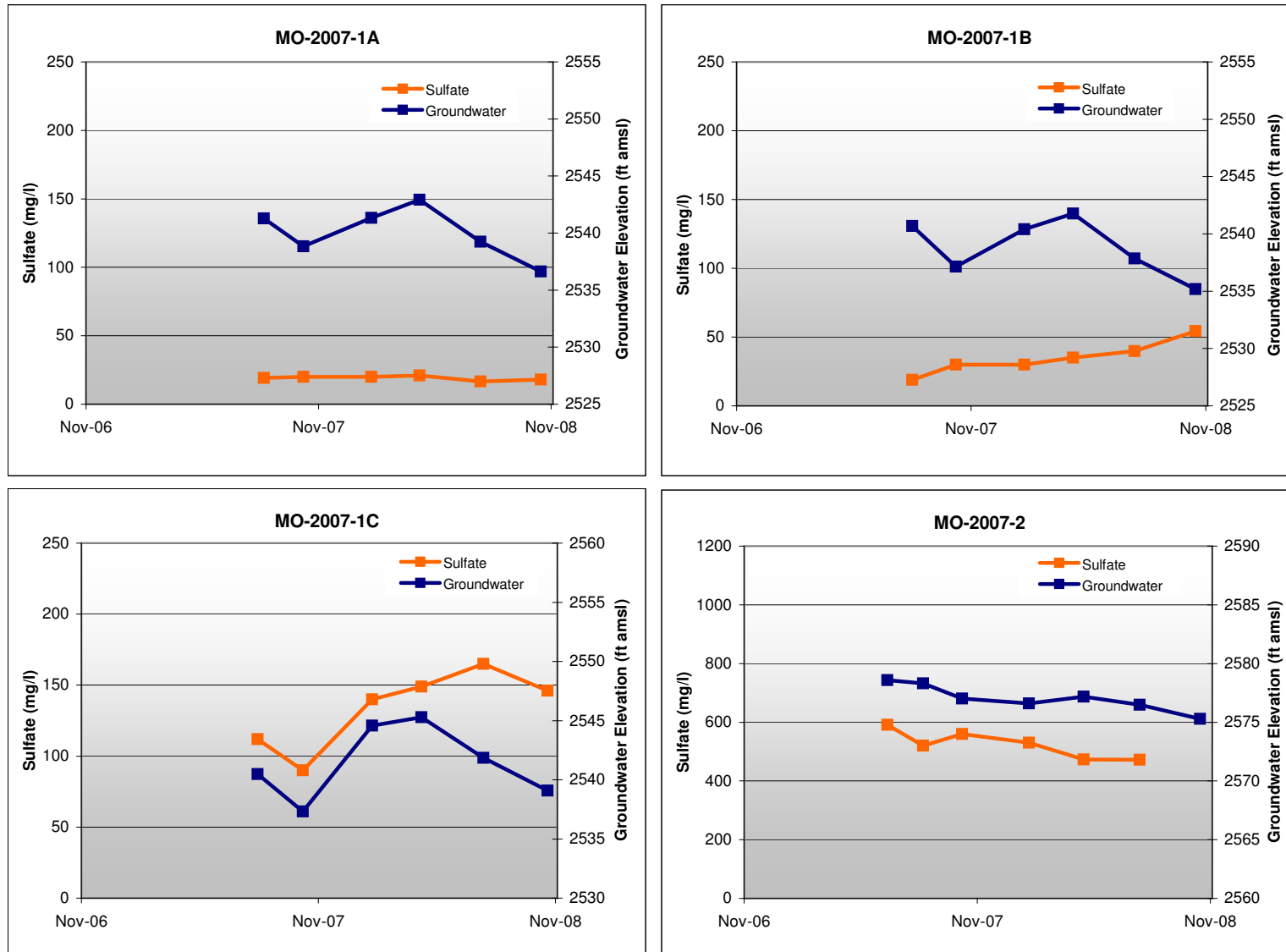
**FIGURE D.2**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**CW-10, GV-1-GVDWID, GV-2-GVDWID, AND GV-SI-GVDWID**



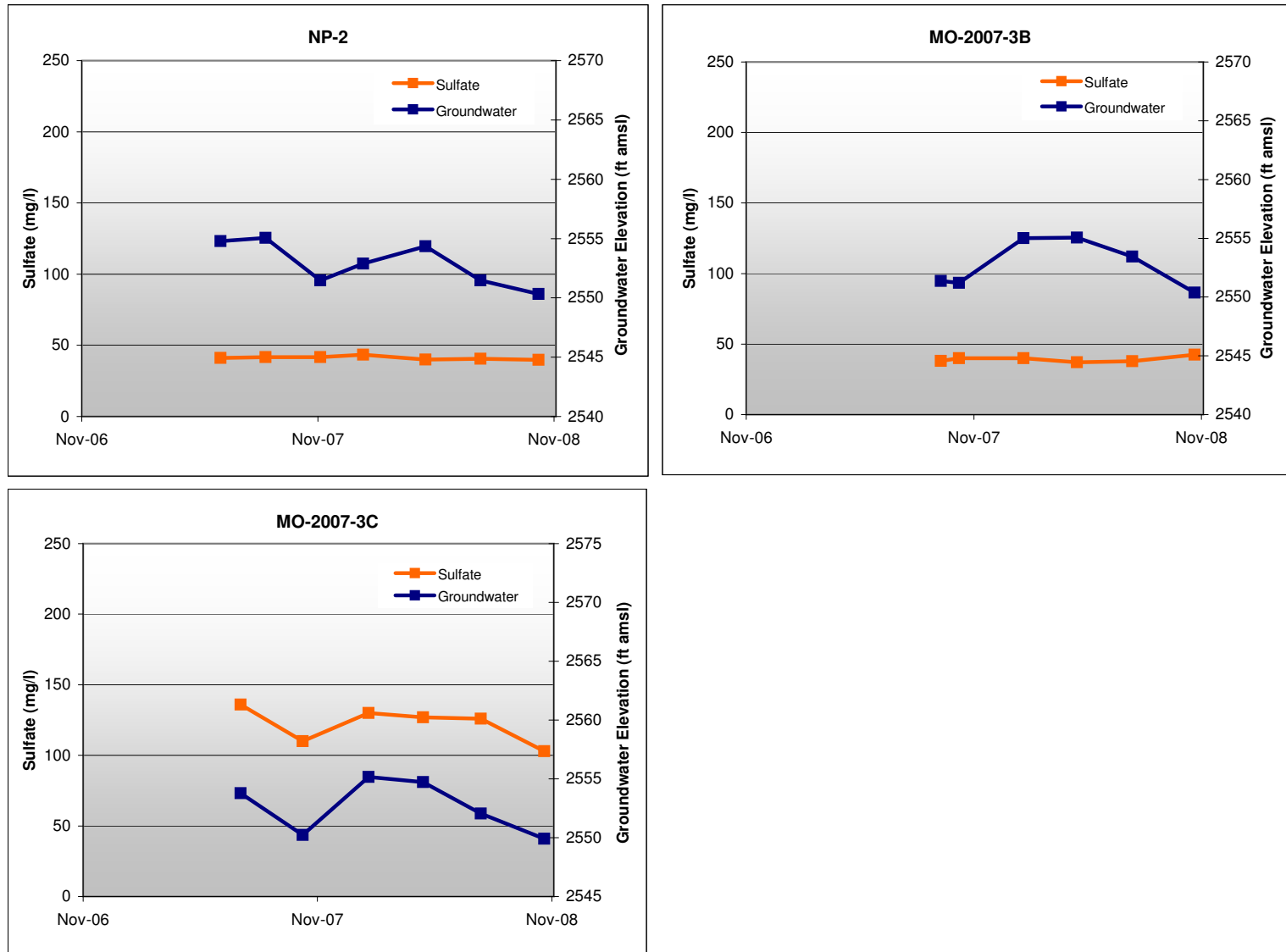
**FIGURE D.3**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**ESP-1, ESP-2, ESP-3, AND ESP-4**



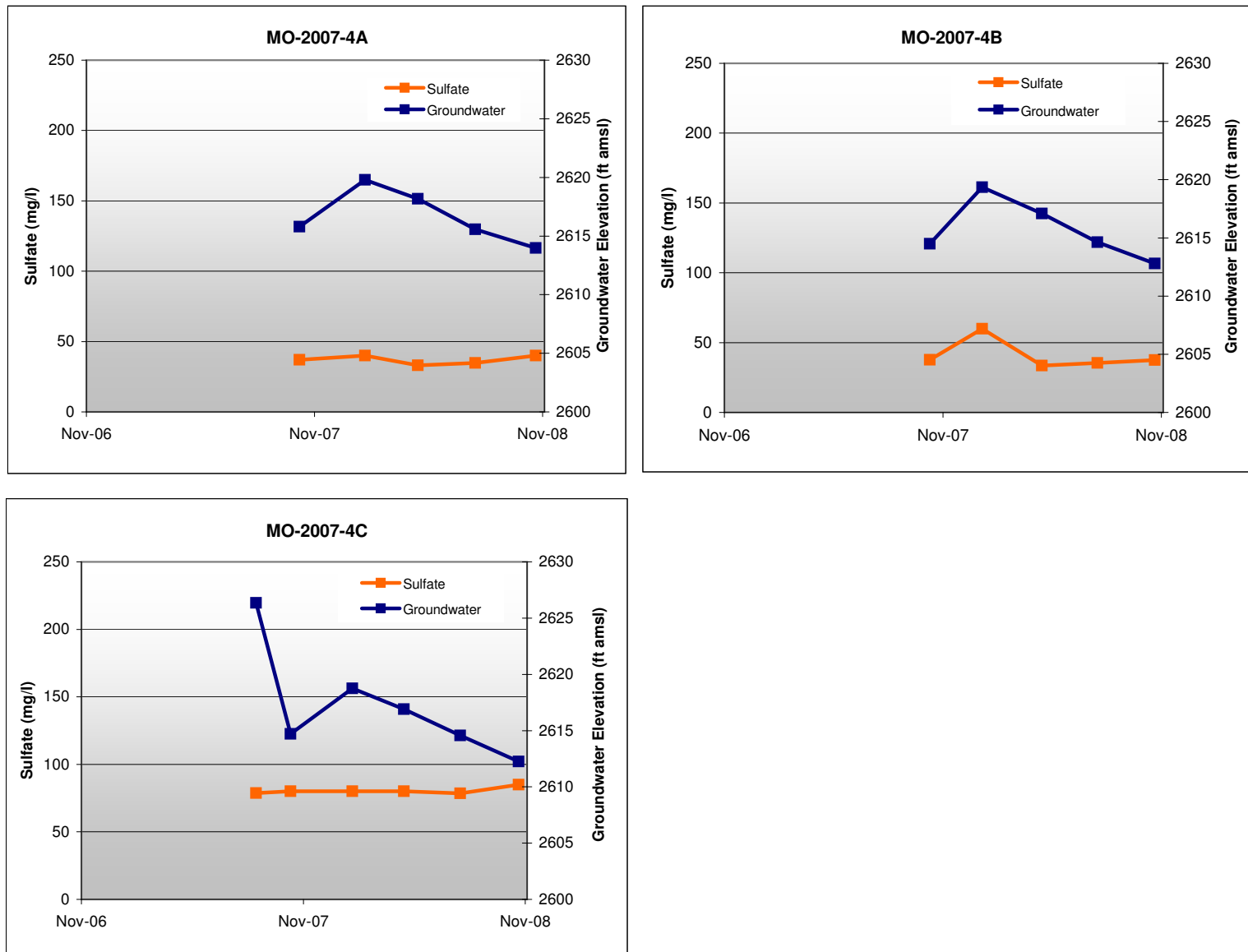
**FIGURE D.4**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**MO-2007-1A, MO-2007-1B, MO-2007-1C, AND MO-2007-2**



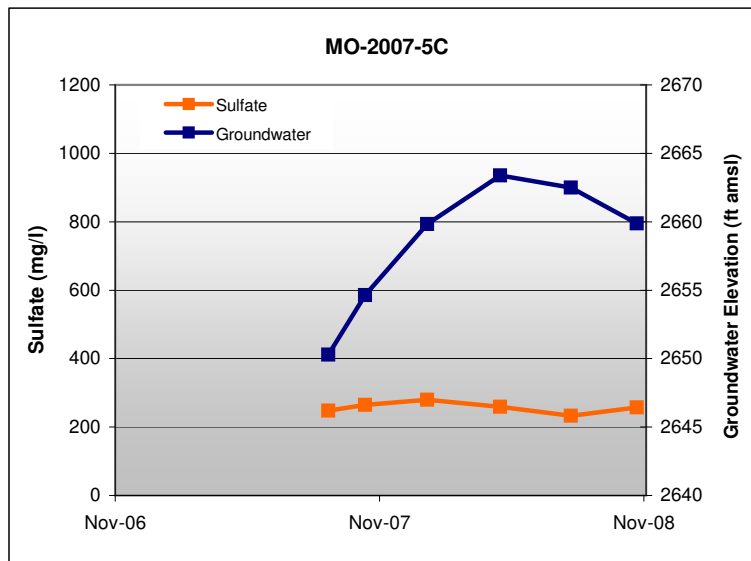
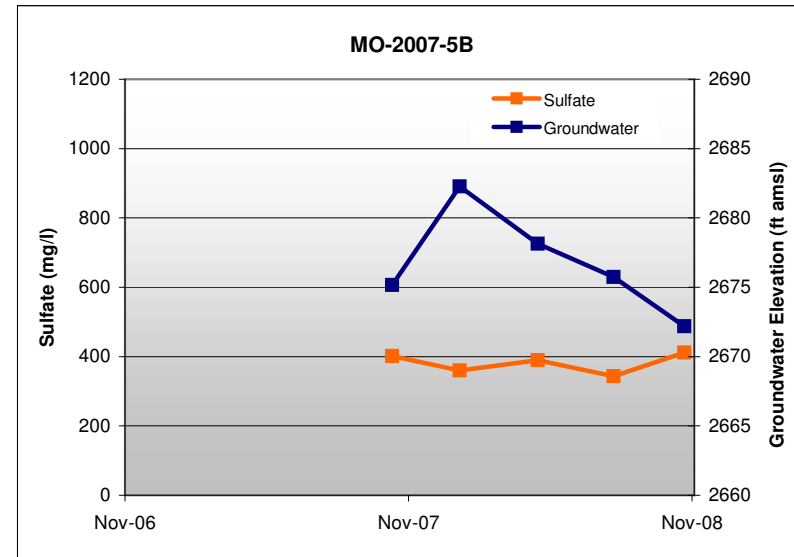
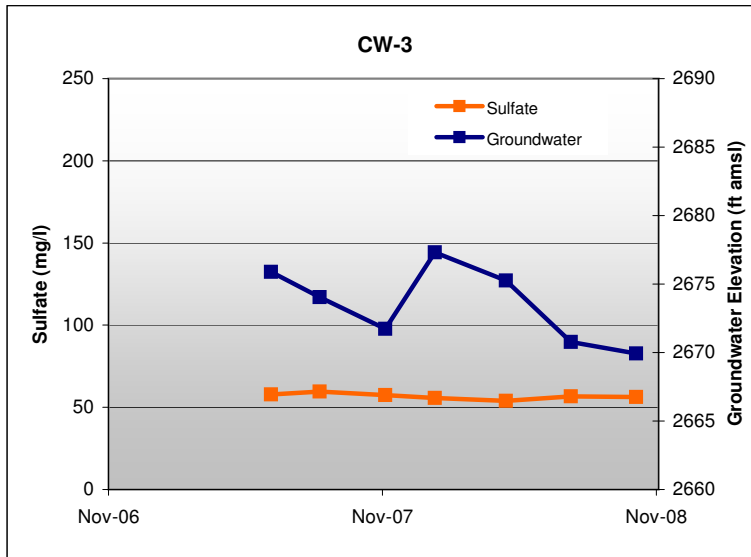
**FIGURE D.5**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**NP-2, MO-2007-3B, AND MO-2007-3C**



**FIGURE D.6**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**MO-2007-4A, MO-2007-4B, AND MO-2007-4C**



**FIGURE D.7**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**CW-3, MO-2007-5B, AND MO-2007-5C**



**FIGURE D.8**  
**SULFATE CONCENTRATION AND GROUNDWATER ELEVATION OVER TIME FOR WELLS**  
**MO-2007-6A, MO-2007-6B, MH-28, AND MH-29**

