

APPENDIX B

ANALYTICAL DATA REPORTS FROM ACZ LABORATORIES

August 03, 2007

Report to:

John Miller
Green Valley Pecan
P.O. Box 7
Sahaurita, AZ 85629

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Richard Walden

Project ID: OJ03Z5

ACZ Project ID: L63941

John Miller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 19, 2007. This project has been assigned to ACZ's project number, L63941. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63941. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 03, 2007. 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.

06/Aug/07

Scott Habermehl, Project Manager, has reviewed and approved this report in its entirety.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: DUP071807 00:00

ACZ Sample ID: **L63941-01**

Date Sampled: 07/18/07 00:00

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	72.6 ✓			mg/L	0.2	1	08/01/07 20:55	djt
Magnesium, dissolved	M200.7 ICP	8.3			mg/L	0.2	1	08/01/07 20:55	djt
Potassium, dissolved	M200.7 ICP	3.5			mg/L	0.3	2	08/01/07 20:55	djt
Sodium, dissolved	M200.7 ICP	49.1 ✓			mg/L	0.3	2	08/01/07 20:55	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		179			mg/L	2	20	07/24/07 0:00	aeh/jlf
Carbonate as CaCO3			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Hydroxide as CaCO3			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Total Alkalinity		179		*	mg/L	2	20	07/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.8			%			08/02/07 16:45	calc
Sum of Anions		6.4 ✓			meq/L	0.1	0.5	08/02/07 16:45	calc
Sum of Cations		6.5 ✓			meq/L	0.1	0.5	08/02/07 16:45	calc
Chloride	M300.0 - Ion Chromatography	18.0 ✓		*	mg/L	0.5	3	07/28/07 1:55	jag
Fluoride	M300.0 - Ion Chromatography	0.6		*	mg/L	0.1	0.5	07/28/07 1:55	jag
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.66			mg/L	0.02	0.1	08/02/07 16:45	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.66			mg/L	0.02	0.1	07/19/07 19:12	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/19/07 19:12	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	420			mg/L	10	20	07/25/07 11:10	aeh
Sulfate	300.0 - Ion Chromatography	97.2 ✓			mg/L	0.5	3	07/28/07 1:55	jag
TDS (calculated)	Calculation	373			mg/L	10	50	08/02/07 16:45	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/02/07 16:45	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: DUP071807 00:00

ACZ Sample ID: **L63941-02**

Date Sampled: 07/18/07 00:00

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	97.1			mg/L	0.5	3	07/28/07 2:14	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita

ACZ Project ID: **L63941**

Project ID: OJ03Z5

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228898													
WG228898PBW1	PBW	07/24/07 10:37				U	mg/L		-20	20			
WG228898LCSW2	LCSW	07/24/07 10:50	WC070723-9	820		822.5	mg/L	100.3	90	110			
L63955-01DUP	DUP	07/24/07 14:11			175	170.8	mg/L				2.4	20	
WG228898PBW2	PBW	07/24/07 14:17				U	mg/L		-20	20			
WG228898LCSW5	LCSW	07/24/07 14:30	WC070723-9	820		843.2	mg/L	102.8	90	110			
WG228898PBW3	PBW	07/24/07 17:27				U	mg/L		-20	20			
WG228898LCSW8	LCSW	07/24/07 17:39	WC070723-9	820		832.9	mg/L	101.6	90	110			
WG228898PBW4	PBW	07/24/07 20:30				U	mg/L		-20	20			
WG228898LCSW11	LCSW	07/24/07 20:41	WC070723-9	820		834.1	mg/L	101.7	90	110			
WG228898LCSW14	LCSW	07/24/07 23:46	WC070723-9	820		834.8	mg/L	101.8	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229471													
WG229471ICV	ICV	08/01/07 19:17	II070725-7	100		100.81	mg/L	100.8	95	105			
WG229471ICB	ICB	08/01/07 19:21				U	mg/L		-0.6	0.6			
WG229471LFB	LFB	08/01/07 19:35	II070725-3	67.97008		72.37	mg/L	106.5	85	115			
L63882-09AS	AS	08/01/07 20:36	II070725-3	67.97008	31.9	103.53	mg/L	105.4	85	115			
L63882-09ASD	ASD	08/01/07 20:39	II070725-3	67.97008	31.9	101.66	mg/L	102.6	85	115	1.82	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229223													
WG229223ICV	ICV	07/27/07 17:10	IC070710-1	20		20.3	mg/L	101.5	90	110			
WG229223ICB	ICB	07/27/07 17:28				U	mg/L		-1.5	1.5			
WG229223LFB	LFB	07/27/07 17:46	WI070727-1	30		30.88	mg/L	102.9	90	110			
L63940-13DUP	DUP	07/27/07 22:36			19	18.5	mg/L				2.7	20	RA
L63940-14AS	AS	07/27/07 23:12	WI070727-1	150	18	165.1	mg/L	98.1	90	110			

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ACZ Project ID: **L63941**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG229223													
WG229223ICV	ICV	07/27/07 17:10	IC070710-1	3.984		4.14	mg/L	103.9	90	110			
WG229223ICB	ICB	07/27/07 17:28				U	mg/L		-0.3	0.3			
WG229223LFB	LFB	07/27/07 17:46	WI070727-1	1.5		1.55	mg/L	103.3	90	110			
L63940-13DUP	DUP	07/27/07 22:36			U	.51	mg/L				200	20	RA
L63940-14AS	AS	07/27/07 23:12	WI070727-1	7.5	U	8.08	mg/L	107.7	90	110			

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229471													
WG229471ICV	ICV	08/01/07 19:17	II070725-7	100		100.09	mg/L	100.1	95	105			
WG229471ICB	ICB	08/01/07 19:21				U	mg/L		-0.6	0.6			
WG229471LFB	LFB	08/01/07 19:35	II070725-3	54.96908		57.87	mg/L	105.3	85	115			
L63882-09AS	AS	08/01/07 20:36	II070725-3	54.96908	3.7	63.98	mg/L	109.7	85	115			
L63882-09ASD	ASD	08/01/07 20:39	II070725-3	54.96908	3.7	62.24	mg/L	106.5	85	115	2.76	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228713													
WG228713ICV	ICV	07/19/07 18:36	WI070609-1	2.416		2.406	mg/L	99.6	90	110			
WG228713ICB	ICB	07/19/07 18:37				U	mg/L		-0.06	0.06			
WG228713LFB1	LFB	07/19/07 18:41	WI070307-9	2		2.014	mg/L	100.7	90	110			
L63940-13DUP	DUP	07/19/07 19:04			3.66	3.669	mg/L				0.2	20	
WG228713LFB2	LFB	07/19/07 19:19	WI070307-9	2		2.013	mg/L	100.7	90	110			
L63940-11AS	AS	07/19/07 20:13	WI070307-9	10	6.3	16.38	mg/L	100.8	90	110			

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228713													
WG228713ICV	ICV	07/19/07 18:36	WI070609-1	.609		.615	mg/L	101	90	110			
WG228713ICB	ICB	07/19/07 18:37				U	mg/L		-0.03	0.03			
WG228713LFB1	LFB	07/19/07 18:41	WI070307-9	1		.988	mg/L	98.8	90	110			
L63940-11AS	AS	07/19/07 19:01	WI070307-9	1	U	.932	mg/L	93.2	90	110			
L63940-13DUP	DUP	07/19/07 19:04			U	U	mg/L				0	20	RA
WG228713LFB2	LFB	07/19/07 19:19	WI070307-9	1		.944	mg/L	94.4	90	110			

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ACZ Project ID: **L63941**

Project ID: OJ03Z5

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229471													
WG229471ICV	ICV	08/01/07 19:17	II070725-7	20		20.59	mg/L	103	95	105			
WG229471ICB	ICB	08/01/07 19:21				U	mg/L		-0.9	0.9			
WG229471LFB	LFB	08/01/07 19:35	II070725-3	99.76186		104	mg/L	104.2	85	115			
L63882-09AS	AS	08/01/07 20:36	II070725-3	99.76186	.4	110.98	mg/L	110.8	85	115			
L63882-09ASD	ASD	08/01/07 20:39	II070725-3	99.76186	.4	107.72	mg/L	107.6	85	115	2.98	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229019													
WG229019PBW	PBW	07/25/07 10:55				18	mg/L		-20	20			
WG229019LCSW	LCSW	07/25/07 10:56	PCN27690	260		288	mg/L	110.8	80	120			
L63960-01DUP	DUP	07/25/07 11:13			2190	2208	mg/L				0.8	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229471													
WG229471ICV	ICV	08/01/07 19:17	II070725-7	100		101.96	mg/L	102	95	105			
WG229471ICB	ICB	08/01/07 19:21				U	mg/L		-0.9	0.9			
WG229471LFB	LFB	08/01/07 19:35	II070725-3	98.21624		102.76	mg/L	104.6	85	115			
L63882-09AS	AS	08/01/07 20:36	II070725-3	98.21624	.8	107.4	mg/L	108.5	85	115			
L63882-09ASD	ASD	08/01/07 20:39	II070725-3	98.21624	.8	104.25	mg/L	105.3	85	115	2.98	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229223													
WG229223ICV	ICV	07/27/07 17:10	IC070710-1	50.15		50.67	mg/L	101	90	110			
WG229223ICB	ICB	07/27/07 17:28				U	mg/L		-1.5	1.5			
WG229223LFB	LFB	07/27/07 17:46	WI070727-1	30		31.49	mg/L	105	90	110			
L63940-13DUP	DUP	07/27/07 22:36			96	95.9	mg/L				0.1	20	
L63940-14AS	AS	07/27/07 23:12	WI070727-1	150	95	241.6	mg/L	97.7	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L63941**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63941-01	WG229223	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228713	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228898	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L63941**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita

OJ03Z5

ACZ Project ID: L63941

Date Received: 7/19/2007

Received By:

Date Printed: 7/20/2007

Receipt Verification

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

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/hr)
472	5.5	15

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

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63941
 Date Received: 7/19/2007
 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
L63941-01	DUP071807 00:00		Y									☐
L63941-02	DUP071807 00:00									X		☐

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: _____

ACZ**Laboratories, Inc.**

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

L63941

CHAIN of CUSTODY

Report to:

Name: Same as Page 1

Address:

Company:

E-mail:

Telephone:

Copy of Report to:

Name:

E-mail:

Company:

Telephone:

Invoice to:

Name:

Address:

Company:

E-mail:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO



If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierra Short

Project/PO #: 030325

Reporting state for compliance testing: AZ

Sampler's Name: Mark Amason / Johannu S.

Are any samples NRC licensable material? NO

of Containers

Dr, Hg, Na, A

AlK, TDS, SO₄F, Cl, NO₃, NO₂SO₄

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

DUP 071807 00:00 071807 00:00

DUP 071807 00:00 071807 00:00

X

X

X

Matrix

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

REMARKS

Same as Page 1.

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Johannu Santamar/4

07/18/07 2:00 pm

JMC 7-19-07

8:50

June 26, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Rick Zimmerman

Project ID: OJ03Z5

ACZ Project ID: L63262

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 16, 2007. This project has been assigned to ACZ's project number, L63262. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63262. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after July 26, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2PT

ACZ Sample ID: **L63262-01**

Date Sampled: 06/14/07 15:50

Date Received: 06/16/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	196			mg/L	0.2	1	06/22/07 1:48	msh
Magnesium, dissolved	M200.7 ICP	35.5			mg/L	0.2	1	06/22/07 1:48	msh
Potassium, dissolved	M200.7 ICP	7.7			mg/L	0.3	2	06/22/07 1:48	msh
Sodium, dissolved	M200.7 ICP	73.5			mg/L	0.3	2	06/22/07 1:48	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		108			mg/L	2	20	06/20/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	06/20/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	06/20/07 0:00	cas
Total Alkalinity		108		*	mg/L	2	20	06/20/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.2			%			06/26/07 0:00	calc
Sum of Anions		15.4			meq/L	0.1	0.5	06/26/07 0:00	calc
Sum of Cations		16.1			meq/L	0.1	0.5	06/26/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	28.3			mg/L	0.5	3	06/20/07 23:58	jlf
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	06/20/07 23:58	jlf
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.94			mg/L	0.02	0.1	06/26/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.94			mg/L	0.02	0.1	06/16/07 15:33	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	06/16/07 15:33	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1060			mg/L	10	20	06/20/07 14:49	seb
Sulfate	300.0 - Ion Chromatography	591			mg/L	5	30	06/21/07 16:45	jlf
TDS (calculated)	Calculation	1000			mg/L	10	50	06/26/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.06						06/26/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2PT(RAW)

ACZ Sample ID: **L63262-02**

Date Sampled: 06/14/07 15:50

Date Received: 06/16/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	596			mg/L	5	30	06/21/07 17:03	jlf

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63262**

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226816													
WG226816PBW1	PBW	06/19/07 15:52				U	mg/L		-20	20			
WG226816LCSW2	LCSW	06/19/07 16:04	WC070614-1	820		819	mg/L	99.9	90	110			
WG226816PBW2	PBW	06/19/07 18:54				U	mg/L		-20	20			
WG226816LCSW5	LCSW	06/19/07 19:06	WC070614-1	820		821.1	mg/L	100.1	90	110			
WG226816PBW3	PBW	06/19/07 22:17				U	mg/L		-20	20			
WG226816LCSW8	LCSW	06/19/07 22:30	WC070614-1	820		822.5	mg/L	100.3	90	110			
WG226816PBW4	PBW	06/20/07 1:19				U	mg/L		-20	20			
WG226816LCSW11	LCSW	06/20/07 1:32	WC070614-1	820		825.2	mg/L	100.6	90	110			
L63272-09DUP	DUP	06/20/07 4:36			54	53.7	mg/L				0.6	20	
WG226816LCSW14	LCSW	06/20/07 4:48	WC070614-1	820		825.4	mg/L	100.7	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226818													
WG226818ICV	ICV	06/21/07 23:38	II070612-3	100		98.44	mg/L	98.4	95	105			
WG226818ICB	ICB	06/21/07 23:42				U	mg/L		-0.6	0.6			
WG226818LFB	LFB	06/21/07 23:58	II070615-2	67.97008		68.98	mg/L	101.5	85	115			
L63114-01AS	AS	06/22/07 1:03	II070615-2	339.8504	1100	1431.5	mg/L	97.5	85	115			
L63114-01ASD	ASD	06/22/07 1:07	II070615-2	339.8504	1100	1428.9	mg/L	96.8	85	115	0.18	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG226894													
WG226894ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226894ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226894ICV1	ICV	06/20/07 15:49	IC070606-1	20		20	mg/L	100	90	110			
WG226894ICB1	ICB	06/20/07 16:07				U	mg/L		-1.5	1.5			
WG226894LFB	LFB	06/20/07 16:25	IC070205-3	30		30.39	mg/L	101.3	90	110			
L63250-05DUP	DUP	06/20/07 21:15			80.2	80.3	mg/L				0.1	20	
WG226894ICV2	ICV	06/21/07 11:55	IC070606-1	20		20.72	mg/L	103.6	90	110			
WG226894ICB2	ICB	06/21/07 12:13				U	mg/L		-1.5	1.5			
L63250-06AS	AS	06/21/07 16:27	IC070205-3	600	80	675	mg/L	99.2	90	110			

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63262**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG226894													
WG226894ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226894ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226894ICV1	ICV	06/20/07 15:49	IC070606-1	3.984		4.07	mg/L	102.2	90	110			
WG226894ICB1	ICB	06/20/07 16:07				.12	mg/L		-0.3	0.3			
WG226894LFB	LFB	06/20/07 16:25	IC070205-3	1.5		1.54	mg/L	102.7	90	110			
L63250-05DUP	DUP	06/20/07 21:15			3.3	3.31	mg/L				0.3	20	
L63250-06AS	AS	06/20/07 21:51	IC070205-3	1.5	2.7	3.94	mg/L	82.7	90	110			M2
WG226894ICV2	ICV	06/21/07 11:55	IC070606-1	3.984		4.09	mg/L	102.7	90	110			
WG226894ICB2	ICB	06/21/07 12:13				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226818													
WG226818ICV	ICV	06/21/07 23:38	II070612-3	100		99.49	mg/L	99.5	95	105			
WG226818ICB	ICB	06/21/07 23:42				U	mg/L		-0.6	0.6			
WG226818LFB	LFB	06/21/07 23:58	II070615-2	54.96908		55.39	mg/L	100.8	85	115			
L63114-01AS	AS	06/22/07 1:03	II070615-2	274.8454	2360	2610.8	mg/L	91.3	85	115			
L63114-01ASD	ASD	06/22/07 1:07	II070615-2	274.8454	2360	2609.2	mg/L	90.7	85	115	0.06	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226660													
WG226660ICV	ICV	06/16/07 15:27	WI070609-1	2.416		2.318	mg/L	95.9	90	110			
WG226660ICB	ICB	06/16/07 15:28				U	mg/L		-0.06	0.06			
L63262-01DUP	DUP	06/16/07 15:34			.94	.943	mg/L				0.3	20	
L63262-01AS	AS	06/16/07 15:35	WI070307-9	2	.94	3.002	mg/L	103.1	90	110			
WG226660LFB	LFB	06/16/07 15:38	WI070307-9	2		2.036	mg/L	101.8	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226660													
WG226660ICV	ICV	06/16/07 15:27	WI070609-1	.609		.609	mg/L	100	90	110			
WG226660ICB	ICB	06/16/07 15:28				U	mg/L		-0.03	0.03			
L63262-01DUP	DUP	06/16/07 15:34			U	U	mg/L				0	20	RA
L63262-01AS	AS	06/16/07 15:35	WI070307-9	1	U	1.042	mg/L	104.2	90	110			
WG226660LFB	LFB	06/16/07 15:38	WI070307-9	1		.995	mg/L	99.5	90	110			

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63262**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226818													
WG226818ICV	ICV	06/21/07 23:38	II070612-3	20		20.1	mg/L	100.5	95	105			
WG226818ICB	ICB	06/21/07 23:42				.4	mg/L		-0.9	0.9			
WG226818LFB	LFB	06/21/07 23:58	II070615-2	99.76186		101.28	mg/L	101.5	85	115			
L63114-01AS	AS	06/22/07 1:03	II070615-2	498.8093	138	703.2	mg/L	113.3	85	115			
L63114-01ASD	ASD	06/22/07 1:07	II070615-2	498.8093	138	706.8	mg/L	114	85	115	0.51	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226892													
WG226892PBW	PBW	06/20/07 14:28				U	mg/L		-20	20			
WG226892LCSW	LCSW	06/20/07 14:30	PCN27102	260		274	mg/L	105.4	80	120			
L63276-04DUP	DUP	06/20/07 15:00			150	144	mg/L				4.1	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226818													
WG226818ICV	ICV	06/21/07 23:38	II070612-3	100		101.29	mg/L	101.3	95	105			
WG226818ICB	ICB	06/21/07 23:42				U	mg/L		-0.9	0.9			
WG226818LFB	LFB	06/21/07 23:58	II070615-2	98.21624		100.19	mg/L	102	85	115			
L63114-01AS	AS	06/22/07 1:03	II070615-2	491.0812	841	1360.5	mg/L	105.8	85	115			
L63114-01ASD	ASD	06/22/07 1:07	II070615-2	491.0812	841	1367.2	mg/L	107.2	85	115	0.49	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG226894													
WG226894ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226894ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226894ICV1	ICV	06/20/07 15:49	IC070606-1	50.15		50.43	mg/L	100.6	90	110			
WG226894ICB1	ICB	06/20/07 16:07				U	mg/L		-1.5	1.5			
WG226894LFB	LFB	06/20/07 16:25	IC070205-3	30		30.38	mg/L	101.3	90	110			
WG226894ICV2	ICV	06/21/07 11:55	IC070606-1	50.15		50.81	mg/L	101.3	90	110			
WG226894ICB2	ICB	06/21/07 12:13				U	mg/L		-1.5	1.5			
L63250-05DUP	DUP	06/21/07 15:14			305	305.3	mg/L				0.1	20	
L63250-06AS	AS	06/21/07 16:27	IC070205-3	600	750	1329	mg/L	96.5	90	110			

Phelps Dodge SierritaACZ Project ID: **L63262**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63262-01	WG226894	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG226660	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226816	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L63262**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63262
Date Received: 6/16/2007
Received By:
Date Printed: 6/18/2007

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)
NA3792		5.5	16

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

Notes

Phelps Dodge Sierrita

ACZ Project ID: L63262
Date Received: 6/16/2007
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
L63262-01	MO-2PT		Y									☐
L63262-02	MO-2PT(RAW)									X		☐

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: _____

July 05, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Bill Dorris, Kim Garcia, Jim Norris

Project ID: OJ0325

ACZ Project ID: L63304

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 20, 2007. This project has been assigned to ACZ's project number, L63304. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63304. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after August 05, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ0325

Sample ID: TMM-1

ACZ Sample ID: **L63304-01**

Date Sampled: 06/19/07 12:30

Date Received: 06/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	31.7			mg/L	0.2	1	06/27/07 21:03	msh
Magnesium, dissolved	M200.7 ICP	6.1			mg/L	0.2	1	06/27/07 21:03	msh
Potassium, dissolved	M200.7 ICP	3.7			mg/L	0.3	2	06/27/07 21:03	msh
Sodium, dissolved	M200.7 ICP	30.9			mg/L	0.3	2	06/27/07 21:03	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		149			mg/L	2	20	06/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	06/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	06/23/07 0:00	cas
Total Alkalinity		149			mg/L	2	20	06/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			07/05/07 0:00	calc
Sum of Anions		3.5			meq/L	0.1	0.5	07/05/07 0:00	calc
Sum of Cations		3.5			meq/L	0.1	0.5	07/05/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.4			mg/L	0.5	3	06/27/07 19:22	jlf
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	06/27/07 19:22	jlf
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.23			mg/L	0.02	0.1	07/05/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.23			mg/L	0.02	0.1	06/20/07 19:30	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	06/20/07 19:30	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	200			mg/L	10	20	06/22/07 16:27	aeh
Sulfate	300.0 - Ion Chromatography	14.1		*	mg/L	0.5	3	07/03/07 1:57	jlf
TDS (calculated)	Calculation	186			mg/L	10	50	07/05/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.08						07/05/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ0325

Sample ID: TMM-1

ACZ Sample ID: **L63304-02**

Date Sampled: 06/19/07 12:30

Date Received: 06/26/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	14.2		*	mg/L	0.5	3	07/03/07 2:16	jlf

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita

ACZ Project ID: **L63304**

Project ID: OJ0325

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227098													
WG227098PBW1	PBW	06/23/07 11:00				U	mg/L		-20	20			
WG227098LCSW2	LCSW	06/23/07 11:12	WC070614-1	820		807.6	mg/L	98.5	90	110			
L63311-02DUP	DUP	06/23/07 14:18			106	106.7	mg/L				0.7	20	
WG227098PBW2	PBW	06/23/07 14:23				U	mg/L		-20	20			
WG227098LCSW5	LCSW	06/23/07 14:36	WC070614-1	820		813.1	mg/L	99.2	90	110			
WG227098PBW3	PBW	06/23/07 17:12				U	mg/L		-20	20			
WG227098LCSW8	LCSW	06/23/07 17:25	WC070614-1	820		813.5	mg/L	99.2	90	110			
WG227098PBW4	PBW	06/23/07 20:06				U	mg/L		-20	20			
WG227098LCSW11	LCSW	06/23/07 20:18	WC070614-1	820		822	mg/L	100.2	90	110			
WG227098LCSW14	LCSW	06/24/07 0:11	WC070614-1	820		817.8	mg/L	99.7	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227321													
WG227321ICV	ICV	06/27/07 20:22	II070612-3	100		99.37	mg/L	99.4	95	105			
WG227321ICB	ICB	06/27/07 20:26				U	mg/L		-0.6	0.6			
WG227321LFB	LFB	06/27/07 20:42	II070615-2	67.97008		69	mg/L	101.5	85	115			
L63301-01AS	AS	06/27/07 20:51	II070615-2	67.97008	148	215.13	mg/L	98.8	85	115			
L63301-01ASD	ASD	06/27/07 20:55	II070615-2	67.97008	148	214.76	mg/L	98.2	85	115	0.17	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG227291													
WG227291ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG227291ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG227291ICV1	ICV	06/27/07 11:31	IC070606-1	20		20.1	mg/L	100.5	90	110			
WG227291ICB1	ICB	06/27/07 11:49				U	mg/L		-1.5	1.5			
WG227291LFB1	LFB	06/27/07 12:07	IC070205-3	30		29.98	mg/L	99.9	90	110			
L63269-07DUP	DUP	06/27/07 16:57			107	108.8	mg/L				1.7	20	
L63269-08AS	AS	06/27/07 17:33	IC070205-3	150	214	359.1	mg/L	96.7	90	110			
WG227291LFB2	LFB	06/27/07 20:52	IC070205-3	30		30.1	mg/L	100.3	90	110			
WG227291ICV1	ICV	06/29/07 8:55	IC070606-1	20		19.34	mg/L	96.7	90	110			
WG227291ICB1	ICB	06/29/07 9:13				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita

ACZ Project ID: **L63304**

Project ID: OJ0325

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG227291													
WG227291ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG227291ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG227291ICV1	ICV	06/27/07 11:31	IC070606-1	3.984		4.05	mg/L	101.7	90	110			
WG227291ICB1	ICB	06/27/07 11:49				U	mg/L		-0.3	0.3			
WG227291LFB1	LFB	06/27/07 12:07	IC070205-3	1.5		1.53	mg/L	102	90	110			
L63269-07DUP	DUP	06/27/07 16:57			.8	.79	mg/L				1.3	20	RA
L63269-08AS	AS	06/27/07 17:33	IC070205-3	7.5	1.4	8.82	mg/L	98.9	90	110			
WG227291LFB2	LFB	06/27/07 20:52	IC070205-3	1.5		1.56	mg/L	104	90	110			

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227321													
WG227321ICV	ICV	06/27/07 20:22	II070612-3	100		100.94	mg/L	100.9	95	105			
WG227321ICB	ICB	06/27/07 20:26				U	mg/L		-0.6	0.6			
WG227321LFB	LFB	06/27/07 20:42	II070615-2	54.96908		55.6	mg/L	101.1	85	115			
L63301-01AS	AS	06/27/07 20:51	II070615-2	54.96908	79.6	135.01	mg/L	100.8	85	115			
L63301-01ASD	ASD	06/27/07 20:55	II070615-2	54.96908	79.6	134.71	mg/L	100.3	85	115	0.22	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226905													
WG226905ICV	ICV	06/20/07 19:22	WI070609-1	2.416		2.343	mg/L	97	90	110			
WG226905ICB	ICB	06/20/07 19:24				U	mg/L		-0.06	0.06			
WG226905LFB1	LFB	06/20/07 19:29	WI070307-9	2		2.081	mg/L	104.1	90	110			
L63304-01AS	AS	06/20/07 19:31	WI070307-9	2	.23	2.201	mg/L	98.6	90	110			
L63307-01DUP	DUP	06/20/07 20:46			5.02	5.023	mg/L				0.1	20	

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226905													
WG226905ICV	ICV	06/20/07 19:22	WI070609-1	.609		.613	mg/L	100.7	90	110			
WG226905ICB	ICB	06/20/07 19:24				U	mg/L		-0.03	0.03			
WG226905LFB1	LFB	06/20/07 19:29	WI070307-9	1		1.022	mg/L	102.2	90	110			
L63304-01AS	AS	06/20/07 19:31	WI070307-9	1	U	.988	mg/L	98.8	90	110			
L63307-01DUP	DUP	06/20/07 19:33				U	mg/L				0	20	RA

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ACZ Project ID: **L63304**

Project ID: OJ0325

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227321													
WG227321ICV	ICV	06/27/07 20:22	II070612-3	20		20.77	mg/L	103.9	95	105			
WG227321ICB	ICB	06/27/07 20:26				U	mg/L		-0.9	0.9			
WG227321LFB	LFB	06/27/07 20:42	II070615-2	99.76186		103.13	mg/L	103.4	85	115			
L63301-01AS	AS	06/27/07 20:51	II070615-2	99.76186	4.5	111.35	mg/L	107.1	85	115			
L63301-01ASD	ASD	06/27/07 20:55	II070615-2	99.76186	4.5	111.44	mg/L	107.2	85	115	0.08	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227070													
WG227070PBW	PBW	06/22/07 16:20				U	mg/L		-20	20			
WG227070LCSW	LCSW	06/22/07 16:21	PCN27102	260		264	mg/L	101.5	80	120			
L63339-02DUP	DUP	06/22/07 16:38			230	238	mg/L				3.4	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227321													
WG227321ICV	ICV	06/27/07 20:22	II070612-3	100		103.05	mg/L	103.1	95	105			
WG227321ICB	ICB	06/27/07 20:26				U	mg/L		-0.9	0.9			
WG227321LFB	LFB	06/27/07 20:42	II070615-2	98.21624		101.24	mg/L	103.1	85	115			
L63301-01AS	AS	06/27/07 20:51	II070615-2	98.21624	32.2	134.21	mg/L	103.9	85	115			
L63301-01ASD	ASD	06/27/07 20:55	II070615-2	98.21624	32.2	133.84	mg/L	103.5	85	115	0.28	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG227612													
WG227612ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG227612ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG227612ICV1	ICV	07/02/07 16:00	IC070606-1	50.15		50.17	mg/L	100	90	110			
WG227612ICB1	ICB	07/02/07 16:18				U	mg/L		-1.5	1.5			
WG227612LFB1	LFB	07/02/07 16:36	IC070205-3	30		29.23	mg/L	97.4	90	110			
WG227612LFB2	LFB	07/03/07 1:21	IC070205-3	30		29.17	mg/L	97.2	90	110			
L63317-01DUP	DUP	07/03/07 3:28			4.5	4.5	mg/L				0	20	RA
L63317-02AS	AS	07/03/07 4:04	IC070205-3	30	3.2	32.33	mg/L	97.1	90	110			
WG227612ICV1	ICV	07/03/07 11:10	IC070606-1	50.15		50.6	mg/L	100.9	90	110			
WG227612ICB1	ICB	07/03/07 11:28				U	mg/L		-1.5	1.5			

Phelps Dodge SierritaACZ Project ID: **L63304**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63304-01	WG227291	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG226905	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG227612	Sulfate	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).
L63304-02	WG227612	Sulfate	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63304**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ0325

ACZ Project ID: L63304
Date Received: 6/20/2007
Received By:
Date Printed: 6/26/2007

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)
NA3799		4	16

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

Notes

Phelps Dodge Sierrita
 OJ0325

ACZ Project ID: L63304
 Date Received: 6/20/2007
 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
L63304-01	TMM-1		Y									☐
L63304-02	TMM-1									X		☐

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: _____

ACZ Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Kim Garcia
Company: Hydro Geo Chem Inc.
E-mail: kimg@hgcinc.com

Address: 51 W. Weymore
Tucson, AZ 85205
Telephone: (520) 293-1500 x123

Copy of Report to:

Name: Ned Hall / Billy Harris / Jim Harris
Company: PDSE / HGL

E-mail: Jimna@hycine.com bill.ydavis@fmi.com
Telephone: 293-1500, 648-8873

Invoice to:

Name: Ned Hall
Company: PDST
E-mail: Ned.hall@fmi.com

Address: 6200 W. Duval Mine Rd
PO Box 527 Green Valley, AZ 85622
Telephone: 520 648-8857

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 #: *Sierrita Short*
Project/PO #: *OJQ 325*
Reporting state for compliance testing: *AZ*
Sampler's Name: *Mark Arneson*
Are any samples NRC licensable material? *No*

of Containers

$$\text{CaMgNaX}$$

54-

PH	EL	Temp
----	----	------

SAMPLE IDENTIFICATION	DATE:TIME
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Tmm-1	6/19/07;
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2

1	1
---	---

1

2.73	351	29.7
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Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

2 Filtered
1 Raw

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

71 Park Union	6/19/07: 1405 XMC 6:20:07	8:50

July 18, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Kim Garcia

Project ID: OJ03Z5

ACZ Project ID: L63562

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 30, 2007. This project has been assigned to ACZ's project number, L63562. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63562. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after August 18, 2007. 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.



Phelps Dodge Sierrita

July 18, 2007

Project ID: OJ03Z5

ACZ Project ID: L63562

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from Phelps Dodge Sierrita on June 30, 2007. 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 L63562. 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.

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-3-1FGW

ACZ Sample ID: **L63562-01**

Date Sampled: 06/28/07 16:00

Date Received: 06/30/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	28.2			mg/L	0.2	1	07/13/07 18:00	msh
Magnesium, dissolved	M200.7 ICP	1.4			mg/L	0.2	1	07/13/07 18:00	msh
Potassium, dissolved	M200.7 ICP	3.3			mg/L	0.3	2	07/13/07 18:00	msh
Sodium, dissolved	M200.7 ICP	93.4			mg/L	0.3	2	07/13/07 18:00	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		103			mg/L	2	20	07/05/07 0:00	jlf/lcp
Carbonate as CaCO ₃			U		mg/L	2	20	07/05/07 0:00	jlf/lcp
Hydroxide as CaCO ₃			U		mg/L	2	20	07/05/07 0:00	jlf/lcp
Total Alkalinity		103			mg/L	2	20	07/05/07 0:00	jlf/lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.7			%			07/18/07 11:01	calc
Sum of Anions		5.4			meq/L	0.1	0.5	07/18/07 11:01	calc
Sum of Cations		5.7			meq/L	0.1	0.5	07/18/07 11:01	calc
Chloride	M300.0 - Ion Chromatography	11.4		*	mg/L	0.5	3	07/16/07 22:04	jag
Fluoride	M300.0 - Ion Chromatography	3.1		*	mg/L	0.1	0.5	07/16/07 22:04	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.30			mg/L	0.02	0.1	07/18/07 11:01	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.30	H	*	mg/L	0.02	0.1	06/30/07 16:16	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	06/30/07 16:16	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	380			mg/L	10	20	07/05/07 13:42	kmc
Sulfate	300.0 - Ion Chromatography	136		*	mg/L	3	10	07/17/07 12:21	jag
TDS (calculated)	Calculation	340			mg/L	10	50	07/18/07 11:01	calc
TDS (ratio - measured/calculated)	Calculation	1.12						07/18/07 11:01	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: MO-3-1GW

ACZ Sample ID: **L63562-02**
Date Sampled: 06/28/07 16:00
Date Received: 06/30/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	136		*	mg/L	3	10	07/17/07 12:40	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63562**

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228017													
WG228017PBW1	PBW	07/05/07 10:52				U	mg/L		-20	20			
WG228017LCSW1	LCSW	07/05/07 11:01	WC070628-1	820		816.9	mg/L	99.6	90	110			
L63561-01DUP	DUP	07/05/07 14:24			125	125.5	mg/L				0.4	20	
WG228017PBW2	PBW	07/05/07 14:43				U	mg/L		-20	20			
WG228017LCSW2	LCSW	07/05/07 14:53	WC070628-1	820		828.6	mg/L	101	90	110			
WG228017PBW3	PBW	07/05/07 18:25				U	mg/L		-20	20			
WG228017LCSW3	LCSW	07/05/07 18:35	WC070628-1	820		823.4	mg/L	100.4	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228215													
WG228215ICV	ICV	07/13/07 17:16	II070703-2	100		100.2	mg/L	100.2	95	105			
WG228215ICB	ICB	07/13/07 17:20				U	mg/L		-0.6	0.6			
WG228215LFB	LFB	07/13/07 17:34	II070709-3	67.97008		71.72	mg/L	105.5	85	115			
L63470-01AS	AS	07/13/07 17:45	II070709-3	67.97008	45.5	117.35	mg/L	105.7	85	115			
L63470-01ASD	ASD	07/13/07 17:49	II070709-3	67.97008	45.5	118.43	mg/L	107.3	85	115	0.92	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228384													
WG228384ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG228384ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228384ICV1	ICV	07/16/07 13:37	IC070710-1	20		20.13	mg/L	100.7	90	110			
WG228384ICB1	ICB	07/16/07 13:55				U	mg/L		-1.5	1.5			
WG228384LFB1	LFB	07/16/07 14:13	IC070205-3	30		31.26	mg/L	104.2	90	110			
L63539-03DUP	DUP	07/16/07 19:03			.6	.62	mg/L				3.3	20	RA
L63539-04AS	AS	07/16/07 19:39	IC070205-3	30	1.5	30.9	mg/L	98	90	110			
WG228384LFB2	LFB	07/16/07 22:58	IC070205-3	30		31.37	mg/L	104.6	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63562**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228384													
WG228384ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG228384ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG228384ICV1	ICV	07/16/07 13:37	IC070710-1	3.984		4.08	mg/L	102.4	90	110			
WG228384ICB1	ICB	07/16/07 13:55				U	mg/L		-0.3	0.3			
WG228384LFB1	LFB	07/16/07 14:13	IC070205-3	1.5		1.58	mg/L	105.3	90	110			
L63539-03DUP	DUP	07/16/07 19:03			.1	.12	mg/L				18.2	20	RA
L63539-04AS	AS	07/16/07 19:39	IC070205-3	1.5	.2	1.7	mg/L	100	90	110			
WG228384LFB2	LFB	07/16/07 22:58	IC070205-3	1.5		1.63	mg/L	108.7	90	110			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228215													
WG228215ICV	ICV	07/13/07 17:16	II070703-2	100		101.15	mg/L	101.2	95	105			
WG228215ICB	ICB	07/13/07 17:20				U	mg/L		-0.6	0.6			
WG228215LFB	LFB	07/13/07 17:34	II070709-3	54.96908		58.16	mg/L	105.8	85	115			
L63470-01AS	AS	07/13/07 17:45	II070709-3	54.96908	21	82.02	mg/L	111	85	115			
L63470-01ASD	ASD	07/13/07 17:49	II070709-3	54.96908	21	82.9	mg/L	112.6	85	115	1.07	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227541													
WG227541ICV	ICV	06/30/07 15:19	WI070609-1	2.416		2.314	mg/L	95.8	90	110			
WG227541ICB	ICB	06/30/07 15:20				U	mg/L		-0.06	0.06			
WG227541ICV1	ICV	06/30/07 15:42	WI070609-1	2.416		2.268	mg/L	93.9	90	110			
WG227541ICB1	ICB	06/30/07 15:44				U	mg/L		-0.06	0.06			
WG227543													
WG227543ICV	ICV	06/30/07 15:55	WI070609-1	2.416		2.336	mg/L	96.7	90	110			
WG227543ICB	ICB	06/30/07 15:56				U	mg/L		-0.06	0.06			
WG227543LFB	LFB	06/30/07 15:57	WI070307-9	2		2.065	mg/L	103.3	90	110			
L63526-02AS	AS	06/30/07 16:00	WI070307-9	2	.1	2.07	mg/L	98.5	90	110			
L63559-01DUP	DUP	06/30/07 16:02			U	.022	mg/L				200	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227543													
WG227543ICV	ICV	06/30/07 15:55	WI070609-1	.609		.621	mg/L	102	90	110			
WG227543ICB	ICB	06/30/07 15:56				U	mg/L		-0.03	0.03			
WG227543LFB	LFB	06/30/07 15:57	WI070307-9	1		1.031	mg/L	103.1	90	110			
L63526-02AS	AS	06/30/07 16:00	WI070307-9	1	U	1.02	mg/L	102	90	110			
L63559-01DUP	DUP	06/30/07 16:02			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63562**

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228215													
WG228215ICV	ICV	07/13/07 17:16	II070703-2	20		19.92	mg/L	99.6	95	105			
WG228215ICB	ICB	07/13/07 17:20				U	mg/L		-0.9	0.9			
WG228215LFB	LFB	07/13/07 17:34	II070709-3	99.76186		103.41	mg/L	103.7	85	115			
L63470-01AS	AS	07/13/07 17:45	II070709-3	99.76186	20.1	123.34	mg/L	103.5	85	115			
L63470-01ASD	ASD	07/13/07 17:49	II070709-3	99.76186	20.1	124.18	mg/L	104.3	85	115	0.68	20	

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG227774													
WG227774PBW	PBW	07/05/07 12:45				U	mg/L		-20	20			
WG227774LCSW	LCSW	07/05/07 12:47	PCN27105	261		278	mg/L	106.5	80	120			
L63562-01DUP	DUP	07/05/07 13:45			380	376	mg/L				1.1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228215													
WG228215ICV	ICV	07/13/07 17:16	II070703-2	100		101.02	mg/L	101	95	105			
WG228215ICB	ICB	07/13/07 17:20				U	mg/L		-0.9	0.9			
WG228215LFB	LFB	07/13/07 17:34	II070709-3	98.21624		102.85	mg/L	104.7	85	115			
L63470-01AS	AS	07/13/07 17:45	II070709-3	98.21624	38.7	135.71	mg/L	98.8	85	115			
L63470-01ASD	ASD	07/13/07 17:49	II070709-3	98.21624	38.7	137.01	mg/L	100.1	85	115	0.95	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228384													
WG228384ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG228384ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228384ICV1	ICV	07/16/07 13:37	IC070710-1	50.15		50.8	mg/L	101.3	90	110			
WG228384ICB1	ICB	07/16/07 13:55				U	mg/L		-1.5	1.5			
WG228384LFB1	LFB	07/16/07 14:13	IC070205-3	30		31.21	mg/L	104	90	110			
L63539-03DUP	DUP	07/16/07 19:03			2.7	2.75	mg/L				1.8	20	RA
L63539-04AS	AS	07/16/07 19:39	IC070205-3	30	3	32.31	mg/L	97.7	90	110			
WG228384LFB2	LFB	07/16/07 22:58	IC070205-3	30		31.13	mg/L	103.8	90	110			

Phelps Dodge SierritaACZ Project ID: **L63562**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63562-01	WG228384	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG227543	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228384	Sulfate	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).
L63562-02	WG228384	Sulfate	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63562**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63562
Date Received: 6/30/2007
Received By:
Date Printed: 6/30/2007

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)
NA3885		8.5	15

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

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L63562
 Date Received: 6/30/2007
 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
L63562-01	MO-3-1FGW		Y									☐
L63562-02	MO-3-1GW									X		☐

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: _____

ACZ Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Greg Schnoor	Address: 51 W. Wetmore Rd
Company: Hydro Gen Chem, Inc.	Tucson AZ 85705-1678
E-mail: greg@ghcinc.com	Telephone: 520-293-1500 ext. 118

Copy of Report to:

Name: Ned Hall / Billy Dennis / Tim Norris	E-mail: TimN@hgcinc.com, BillyDennis@F4i.com
Company: PDST/HGC	Telephone: 293-1500, ext 113, 646-8873

Invoice to:

Name: Ned Hall	Address: 6200 W. Dural Mine Rd.
Company: PDSI	PO Box 527 Green Valley AZ 85622
E-mail: Ned-Hall@fmi.com	Telephone: 602-8857

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)

[illegible]

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

FGW = Filtered groundwater
GW = Unfiltered groundwater

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
621	6.28.07 16:30	MCS	6.30.07 12:49

July 23, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63724

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 11, 2007. This project has been assigned to ACZ's project number, L63724. Please reference this number in all future inquiries.

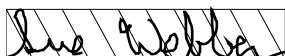
All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63724. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after August 23, 2007. 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.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-509604ACZ Sample ID: **L63724-01**
Date Sampled: 07/09/07 09:39
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1440			mS/cm			07/09/07 9:39	js
pH (Field)	Field Measurement	7.0			units			07/09/07 9:39	js
Temperature (Field)	Field Measurement	20.9			C			07/09/07 9:39	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	196			mg/L	0.4	2	07/18/07 1:17	wfg
Magnesium, dissolved	M200.7 ICP	28.6			mg/L	0.4	2	07/18/07 1:17	wfg
Potassium, dissolved	M200.7 ICP	5.2			mg/L	0.6	3	07/20/07 20:05	djt
Sodium, dissolved	M200.7 ICP	75.3		*	mg/L	0.6	3	07/18/07 1:17	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		259			mg/L	2	20	07/12/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/12/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/12/07 0:00	cas
Total Alkalinity		259		*	mg/L	2	20	07/12/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.3			%			07/23/07 0:00	calc
Sum of Anions		14.9			meq/L	0.1	0.5	07/23/07 0:00	calc
Sum of Cations		15.6			meq/L	0.1	0.5	07/23/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	224			mg/L	5	30	07/19/07 12:43	jag
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	07/18/07 16:01	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	5.27			mg/L	0.06	0.3	07/23/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	5.27	H	*	mg/L	0.06	0.3	07/11/07 22:45	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/11/07 22:13	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1030			mg/L	10	20	07/13/07 14:12	aeh
Sulfate	300.0 - Ion Chromatography	145		*	mg/L	5	30	07/19/07 12:43	jag
TDS (calculated)	Calculation	853			mg/L	10	50	07/23/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.21						07/23/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-509604

ACZ Sample ID: **L63724-02**

Date Sampled: 07/09/07 09:39

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1440			mS/cm			07/09/07 9:39	js
pH (Field)	Field Measurement	7.0			units			07/09/07 9:39	js
Temperature (Field)	Field Measurement	20.9			C			07/09/07 9:39	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	146		*	mg/L	5	30	07/19/07 13:01	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-501760ACZ Sample ID: **L63724-03**
Date Sampled: 07/09/07 11:15
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	658			mS/cm			07/09/07 11:15	js
pH (Field)	Field Measurement	7.6			units			07/09/07 11:15	js
Temperature (Field)	Field Measurement	24.5			C			07/09/07 11:15	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	76.8			mg/L	0.2	1	07/18/07 1:21	wfg
Magnesium, dissolved	M200.7 ICP	9.7			mg/L	0.2	1	07/18/07 1:21	wfg
Potassium, dissolved	M200.7 ICP	3.9			mg/L	0.3	2	07/20/07 20:09	djt
Sodium, dissolved	M200.7 ICP	48.6		*	mg/L	0.3	2	07/18/07 1:21	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		172			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		172		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.7			%			07/23/07 13:41	calc
Sum of Anions		6.7			meq/L	0.1	0.5	07/23/07 13:41	calc
Sum of Cations		6.8			meq/L	0.1	0.5	07/23/07 13:41	calc
Chloride	M300.0 - Ion Chromatography	27.6		*	mg/L	0.5	3	07/18/07 16:38	jag
Fluoride	M300.0 - Ion Chromatography	0.4	B	*	mg/L	0.1	0.5	07/18/07 16:38	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	4.38			mg/L	0.04	0.2	07/23/07 13:41	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	4.38	H	*	mg/L	0.04	0.2	07/11/07 22:46	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/11/07 22:15	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	430			mg/L	10	20	07/13/07 14:13	aeh
Sulfate	300.0 - Ion Chromatography	104		*	mg/L	1	5	07/19/07 13:19	jag
TDS (calculated)	Calculation	394			mg/L	10	50	07/23/07 13:41	calc
TDS (ratio - measured/calculated)	Calculation	1.09						07/23/07 13:41	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-501760

ACZ Sample ID: **L63724-04**

Date Sampled: 07/09/07 11:15

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	658			mS/cm			07/09/07 11:15	js
pH (Field)	Field Measurement	7.6			units			07/09/07 11:15	js
Temperature (Field)	Field Measurement	24.5			C			07/09/07 11:15	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	100		*	mg/L	1	5	07/19/07 13:37	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-515867ACZ Sample ID: **L63724-05**
Date Sampled: 07/09/07 12:15
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	622			mS/cm			07/09/07 12:15	js
pH (Field)	Field Measurement	7.6			units			07/09/07 12:15	js
Temperature (Field)	Field Measurement	32.8			C			07/09/07 12:15	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	63.2			mg/L	0.2	1	07/18/07 1:24	wfg
Magnesium, dissolved	M200.7 ICP	7.4			mg/L	0.2	1	07/18/07 1:24	wfg
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	2	07/20/07 20:20	djt
Sodium, dissolved	M200.7 ICP	40.4		*	mg/L	0.3	2	07/18/07 1:24	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		151			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		151		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.8			%			07/23/07 13:41	calc
Sum of Anions		5.4			meq/L	0.1	0.5	07/23/07 13:41	calc
Sum of Cations		5.6			meq/L	0.1	0.5	07/23/07 13:41	calc
Chloride	M300.0 - Ion Chromatography	17.3		*	mg/L	0.5	3	07/18/07 17:14	jag
Fluoride	M300.0 - Ion Chromatography	0.4	B	*	mg/L	0.1	0.5	07/18/07 17:14	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	2.66			mg/L	0.02	0.1	07/23/07 13:41	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.66	H	*	mg/L	0.02	0.1	07/11/07 22:16	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/11/07 22:16	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	340			mg/L	10	20	07/13/07 14:15	aeh
Sulfate	300.0 - Ion Chromatography	80.1		*	mg/L	0.5	3	07/18/07 17:14	jag
TDS (calculated)	Calculation	314			mg/L	10	50	07/23/07 13:41	calc
TDS (ratio - measured/calculated)	Calculation	1.08						07/23/07 13:41	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-515867

ACZ Sample ID: **L63724-06**

Date Sampled: 07/09/07 12:15

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	622			mS/cm			07/09/07 12:15	js
pH (Field)	Field Measurement	7.6			units			07/09/07 12:15	js
Temperature (Field)	Field Measurement	32.8			C			07/09/07 12:15	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	98.9		*	mg/L	0.5	3	07/18/07 18:08	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-599357ACZ Sample ID: **L63724-07**
Date Sampled: 07/09/07 14:25
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	749			mS/cm			07/09/07 2:25	js
pH (Field)	Field Measurement	7.5			units			07/09/07 2:25	js
Temperature (Field)	Field Measurement	31.3			C			07/09/07 2:25	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	82.5			mg/L	0.2	1	07/18/07 1:35	wfg
Magnesium, dissolved	M200.7 ICP	21.5			mg/L	0.2	1	07/18/07 1:35	wfg
Potassium, dissolved	M200.7 ICP	4.8			mg/L	0.3	2	07/20/07 20:24	djt
Sodium, dissolved	M200.7 ICP	48.3		*	mg/L	0.3	2	07/18/07 1:35	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		131			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		131		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.2			%			07/23/07 13:41	calc
Sum of Anions		7.6			meq/L	0.1	0.5	07/23/07 13:41	calc
Sum of Cations		8.1			meq/L	0.1	0.5	07/23/07 13:41	calc
Chloride	M300.0 - Ion Chromatography	21.1		*	mg/L	0.5	3	07/18/07 18:26	jag
Fluoride	M300.0 - Ion Chromatography	0.5	B	*	mg/L	0.1	0.5	07/18/07 18:26	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.69			mg/L	0.02	0.1	07/23/07 13:41	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.69	H	*	mg/L	0.02	0.1	07/11/07 22:17	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/11/07 22:17	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	530			mg/L	10	20	07/13/07 14:16	aeh
Sulfate	300.0 - Ion Chromatography	206		*	mg/L	5	30	07/19/07 13:55	jag
TDS (calculated)	Calculation	471			mg/L	10	50	07/23/07 13:41	calc
TDS (ratio - measured/calculated)	Calculation	1.13						07/23/07 13:41	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-599357

ACZ Sample ID: **L63724-08**

Date Sampled: 07/09/07 14:25

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	749			mS/cm			07/09/07 2:25	js
pH (Field)	Field Measurement	7.5			units			07/09/07 2:25	js
Temperature (Field)	Field Measurement	31.3			C			07/09/07 2:25	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	203		*	mg/L	5	30	07/19/07 14:13	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
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ACZ Project ID: **L63724**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228212													
WG228212PBW1	PBW	07/12/07 15:43				13.6	mg/L		-20	20			
WG228212LCSW2	LCSW	07/12/07 15:55	WC070705-3	820		816.6	mg/L	99.6	90	110			
WG228212PBW2	PBW	07/12/07 17:43				U	mg/L		-20	20			
WG228212LCSW5	LCSW	07/12/07 17:55	WC070705-3	820		815.2	mg/L	99.4	90	110			
L63730-01DUP	DUP	07/12/07 21:05			U	U	mg/L				0	20	RA
WG228212PBW3	PBW	07/12/07 21:10				U	mg/L		-20	20			
WG228212LCSW8	LCSW	07/12/07 21:23	WC070705-3	820		817.5	mg/L	99.7	90	110			
WG228212PBW4	PBW	07/13/07 0:34				U	mg/L		-20	20			
WG228212LCSW11	LCSW	07/13/07 0:47	WC070705-3	820		820.5	mg/L	100.1	90	110			
WG228212LCSW14	LCSW	07/13/07 4:28	WC070705-3	820		823	mg/L	100.4	90	110			

WG228321

WG228321PBW1	PBW	07/14/07 13:14				U	mg/L		-20	20			
WG228321LCSW2	LCSW	07/14/07 13:26	WC070705-3	820		815.7	mg/L	99.5	90	110			
L63741-13DUP	DUP	07/14/07 14:49			128	127.5	mg/L				0.4	20	
WG228321PBW2	PBW	07/14/07 16:23				U	mg/L		-20	20			
WG228321LCSW5	LCSW	07/14/07 16:35	WC070705-3	820		815.7	mg/L	99.5	90	110			
WG228321PBW3	PBW	07/14/07 20:25				U	mg/L		-20	20			
WG228321LCSW8	LCSW	07/14/07 20:38	WC070705-3	820		822.9	mg/L	100.4	90	110			
WG228321PBW4	PBW	07/14/07 23:53				U	mg/L		-20	20			
WG228321LCSW11	LCSW	07/15/07 0:05	WC070705-3	820		820.5	mg/L	100.1	90	110			
WG228321LCSW14	LCSW	07/15/07 3:03	WC070705-3	820		821.6	mg/L	100.2	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228527													
WG228527ICV	ICV	07/17/07 23:47	II070703-2	100		103.45	mg/L	103.5	95	105			
WG228527ICB	ICB	07/17/07 23:51				U	mg/L		-0.6	0.6			
WG228527LFB	LFB	07/18/07 0:04	II070709-3	67.97008		73.52	mg/L	108.2	85	115			
L63716-01AS	AS	07/18/07 1:05	II070709-3	67.97008	179	246.65	mg/L	99.5	85	115			
L63716-01ASD	ASD	07/18/07 1:09	II070709-3	67.97008	179	242.35	mg/L	93.2	85	115	1.76	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228519													
WG228519ICV	ICV	07/18/07 13:55	IC070710-1	20		20.28	mg/L	101.4	90	110			
WG228519ICB	ICB	07/18/07 14:13				U	mg/L		-1.5	1.5			
WG228519LFB	LFB	07/18/07 14:31	IC070205-3	30		29.6	mg/L	98.7	90	110			
WG228519ICV1	ICV	07/19/07 10:54	IC070710-1	20		20.25	mg/L	101.3	90	110			
WG228519ICB1	ICB	07/19/07 11:12				U	mg/L		-1.5	1.5			
L63716-01DUP	DUP	07/19/07 11:48			181	175.8	mg/L				2.9	20	
L63716-02AS	AS	07/19/07 12:24	IC070710-2	1000	180	843	mg/L	66.3	90	110			M2

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Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228519													
WG228519ICV	ICV	07/18/07 13:55	IC070710-1	3.984		4.24	mg/L	106.4	90	110			
WG228519ICB	ICB	07/18/07 14:13				U	mg/L		-0.3	0.3			
WG228519LFB	LFB	07/18/07 14:31	IC070205-3	1.5		1.6	mg/L	106.7	90	110			
L63716-01DUP	DUP	07/18/07 15:07			1	1.05	mg/L				4.9	20	
L63716-02AS	AS	07/18/07 15:43	IC070710-2	2.5	.7	2.06	mg/L	54.4	90	110			M2
WG228519ICV1	ICV	07/19/07 10:54	IC070710-1	3.984		4.11	mg/L	103.2	90	110			
WG228519ICB1	ICB	07/19/07 11:12				.15	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228527													
WG228527ICV	ICV	07/17/07 23:47	II070703-2	100		103.83	mg/L	103.8	95	105			
WG228527ICB	ICB	07/17/07 23:51				U	mg/L		-0.6	0.6			
WG228527LFB	LFB	07/18/07 0:04	II070709-3	54.96908		58.93	mg/L	107.2	85	115			
L63716-01AS	AS	07/18/07 1:05	II070709-3	54.96908	47.2	107.69	mg/L	110	85	115			
L63716-01ASD	ASD	07/18/07 1:09	II070709-3	54.96908	47.2	105.58	mg/L	106.2	85	115	1.98	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228161													
WG228161ICV	ICV	07/11/07 18:51	WI070609-1	2.416		2.362	mg/L	97.8	90	110			
WG228161ICB	ICB	07/11/07 18:52				U	mg/L		-0.06	0.06			
WG228165													
WG228165ICV	ICV	07/11/07 22:05	WI070609-1	2.416		2.368	mg/L	98	90	110			
WG228165ICB	ICB	07/11/07 22:06				U	mg/L		-0.06	0.06			
WG228165LFB	LFB	07/11/07 22:07	WI070307-9	2		1.964	mg/L	98.2	90	110			
L63722-01AS	AS	07/11/07 22:10	WI070307-9	2		1.912	mg/L	95.6	90	110			
L63722-02DUP	DUP	07/11/07 22:12				U	mg/L				0	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228161													
WG228161ICV	ICV	07/11/07 18:51	WI070609-1	.609		.616	mg/L	101.1	90	110			
WG228161ICB	ICB	07/11/07 18:52				U	mg/L		-0.03	0.03			
WG228165													
WG228165ICV	ICV	07/11/07 22:05	WI070609-1	.609		.596	mg/L	97.9	90	110			
WG228165ICB	ICB	07/11/07 22:06				U	mg/L		-0.03	0.03			
WG228165LFB	LFB	07/11/07 22:07	WI070307-9	1		.921	mg/L	92.1	90	110			
L63722-01AS	AS	07/11/07 22:10	WI070307-9	1		.898	mg/L	89.8	90	110			
L63722-02DUP	DUP	07/11/07 22:12				U	mg/L				0	20	RA

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Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228775													
WG228775ICV	ICV	07/20/07 19:17	II070703-2	20		19.99	mg/L	100	95	105			
WG228775ICB	ICB	07/20/07 19:21				U	mg/L		-0.9	0.9			
WG228775LFB	LFB	07/20/07 19:35	II070719-3	99.76186		110.16	mg/L	110.4	85	115			
L63691-06AS	AS	07/20/07 19:42	II070719-3	99.76186	1.2	113.35	mg/L	112.4	85	115			
L63691-06ASD	ASD	07/20/07 19:46	II070719-3	99.76186	1.2	110.5	mg/L	109.6	85	115	2.55	20	
L63724-07AS	AS	07/20/07 20:27	II070719-3	99.76186	4.8	115.32	mg/L	110.8	85	115			
L63724-07ASD	ASD	07/20/07 20:31	II070719-3	99.76186	4.8	116.97	mg/L	112.4	85	115	1.42	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228288													
WG228288PBW	PBW	07/13/07 14:10				U	mg/L		-20	20			
WG228288LCSW	LCSW	07/13/07 14:11	PCN27101	261		290	mg/L	111.1	80	120			
L63735-01DUP	DUP	07/13/07 14:25			210	218	mg/L				3.7	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228527													
WG228527ICV	ICV	07/17/07 23:47	II070703-2	100		102.89	mg/L	102.9	95	105			
WG228527ICV	ICV	07/17/07 23:47	II070703-2	100		98.8	mg/L	98.8	95	105			
WG228527ICB	ICB	07/17/07 23:51				U	mg/L		-0.9	0.9			
WG228527ICB	ICB	07/17/07 23:51				U	mg/L		-6	6			
WG228527LFB	LFB	07/18/07 0:04	II070709-3	98.21624		104.37	mg/L	106.3	85	115			
L63716-01AS	AS	07/18/07 1:05	II070709-3	98.21624	162	257.41	mg/L	118.5	85	115			M1
L63716-01ASD	ASD	07/18/07 1:09	II070709-3	98.21624	162	254.82	mg/L	115.9	85	115	3.42	20	M1

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228519													
WG228519ICV	ICV	07/18/07 13:55	IC070710-1	50.15		50.89	mg/L	101.5	90	110			
WG228519ICB	ICB	07/18/07 14:13				U	mg/L		-1.5	1.5			
WG228519LFB	LFB	07/18/07 14:31	IC070205-3	30		29.02	mg/L	96.7	90	110			
WG228519ICV1	ICV	07/19/07 10:54	IC070710-1	50.15		50.55	mg/L	100.8	90	110			
WG228519ICB1	ICB	07/19/07 11:12				U	mg/L		-1.5	1.5			
L63716-01DUP	DUP	07/19/07 11:48			367	357	mg/L				2.8	20	
L63716-02AS	AS	07/19/07 12:24	IC070710-2	1000	370	1034	mg/L	66.4	90	110			M2

Phelps Dodge SierritaACZ Project ID: **L63724**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63724-01	WG228527	Sodium, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG228519	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228165	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228212	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
			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).
L63724-02	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
L63724-03	WG228527	Sodium, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG228519	Chloride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
		Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228165	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63724-04	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.

Phelps Dodge SierritaACZ Project ID: **L63724**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63724-05	WG228527	Sodium, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG228519	Chloride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
		Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228165	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
L63724-06	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	L63724-07	WG228527	Sodium, dissolved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG228519	Chloride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
		Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228165	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L63724-08	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
L63724-09	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228519	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.

Phelps Dodge Sierrita

ACZ Project ID: **L63724**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63724
Date Received: 7/11/2007
Received By:
Date Printed: 7/11/2007

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)
1277		4.0	18

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63724
 Date Received: 7/11/2007
 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
L63724-01	FGW-509604		Y									☐
L63724-02	UGW-509604									X		☐
L63724-03	FGW-501760		Y									☐
L63724-04	UGW-501760									X		☐
L63724-05	FGW-515867		Y									☐
L63724-06	UGW-515867									X		☐
L63724-07	FGW-599357		Y									☐
L63724-08	UGW-599357									X		☐

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

CHAIN of CUSTODY

Report to:

Name: Kim Garcia
Company: Hydro Geo Chem Inc.
E-mail: kimg@hgcinc.com

Address: 51 W. Whitmore Rd.
Tucson AZ 85705-1678
Telephone: 520-2931500 x 123

Copy of Report to:

Name: Ned Hall / Billy Dorris / Jim Norris
Company: PDSE / HGC

E-mail: jimn@hgcinc.com / BillyDorris@FMI.COM
Telephone: 520-2931500 x 112 / 520 648 8873

Invoice to:

Name: Ned Hall
Company: PDSE
E-mail: Ned Hall@FMI.COM

Address: 6200 W. Dural mine Rd.
P.O. Box 527 Green Valley AZ 85622
Telephone: 520 648 8857

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 #: Sierrita 8H0RT
Project/PO #: 0J0325
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson / Johann Santamaría
Are any samples NRC licensable material? NO

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	g	Na K	Al, TDS, SO ₄ Cl, F, NO ₂ , NO ₃	SO ₄	PH	EC	Temp
FGW-509604	July 9/07 9:39am	GW	2	X	X			7.04	1440	20.9
UGW-509604	July 9/07 9:39am	GW	1				X	7.04	1490	20.9
FGW-501760	July 9/07 11:15am	GW	2	X	X			7.58	658	24.5
UGW-501760	July 9/07 11:15am	GW	1				X	7.58	658	24.5
FGW-515867	July 9/07 12:15pm	GW	2	X	X			7.57	622	32.8
UGW-515867	July 9/07 12:15pm	GW	1				X	7.57	622	32.8
FGW-599357	July 9/07 2:25pm	GW	2	X	X			7.48	749	31.3
UGW-599357	July 9/07 2:25pm	GW	1				X	7.48	749	31.3
FGW-627429	July 9/07	GW	2	X	X			7.57	749	31.3
UGW-627429	July 9/07	GW	1				X	7.57	749	31.3

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

REMARKS

FGW* = Filtered Ground Water Sample
UGW* = Unfiltered Ground water sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Johanna Santamaría	July 9/07 3:15	KL	7-11-07 8:53

July 31, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63741

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 11, 2007. This project has been assigned to ACZ's project number, L63741. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63741. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after August 31, 2007. 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.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-627485ACZ Sample ID: **L63741-01**
Date Sampled: 07/10/07 13:45
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	475			mS/cm			07/10/07 13:45	js
pH (Field)	Field Measurement	7.6			units			07/10/07 13:45	js
Temperature (Field)	Field Measurement	26.9			C			07/10/07 13:45	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	50.7			mg/L	0.2	1	07/20/07 23:14	djt
Magnesium, dissolved	M200.7 ICP	6.3			mg/L	0.2	1	07/20/07 23:14	djt
Potassium, dissolved	M200.7 ICP	3.3			mg/L	0.3	2	07/22/07 21:36	wfg
Sodium, dissolved	M200.7 ICP	38.6			mg/L	0.3	2	07/20/07 23:14	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		142			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		142		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.2			%			07/31/07 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		4.8			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	13.4			mg/L	0.5	3	07/19/07 16:31	jag
Fluoride	M300.0 - Ion Chromatography	0.5		*	mg/L	0.1	0.5	07/19/07 16:31	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.98			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.98		*	mg/L	0.02	0.1	07/11/07 19:46	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 19:46	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	300			mg/L	10	20	07/16/07 13:29	aeh
Sulfate	300.0 - Ion Chromatography	57.6			mg/L	0.5	3	07/19/07 16:31	jag
TDS (calculated)	Calculation	264			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-627485

ACZ Sample ID: **L63741-02**

Date Sampled: 07/10/07 13:45

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	475			mS/cm			07/10/07 13:45	js
pH (Field)	Field Measurement	7.6			units			07/10/07 13:45	js
Temperature (Field)	Field Measurement	26.9			C			07/10/07 13:45	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	57.9			mg/L	0.5	3	07/19/07 17:07	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-502546ACZ Sample ID: **L63741-03**
Date Sampled: 07/10/07 08:56
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1945			mS/cm			07/10/07 8:56	js
pH (Field)	Field Measurement	7.3			units			07/10/07 8:56	js
Temperature (Field)	Field Measurement	27.4			C			07/10/07 8:56	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	323			mg/L	0.2	1	07/20/07 23:25	djt
Magnesium, dissolved	M200.7 ICP	37.4			mg/L	0.2	1	07/20/07 23:25	djt
Potassium, dissolved	M200.7 ICP	7.2			mg/L	0.3	2	07/22/07 21:40	wfg
Sodium, dissolved	M200.7 ICP	77.5			mg/L	0.3	2	07/20/07 23:25	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		99			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		99		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.1			%			07/31/07 0:00	calc
Sum of Anions		22.3			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		22.8			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	75.4			mg/L	0.5	3	07/19/07 17:43	jag
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	07/19/07 17:43	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.75			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.75		*	mg/L	0.02	0.1	07/11/07 19:47	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 19:47	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1550			mg/L	10	20	07/16/07 13:30	aeh
Sulfate	300.0 - Ion Chromatography	860			mg/L	10	50	07/27/07 18:05	jag
TDS (calculated)	Calculation	1450			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-502546

ACZ Sample ID: **L63741-04**

Date Sampled: 07/10/07 08:56

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1945			mS/cm			07/10/07 8:56	js
pH (Field)	Field Measurement	7.3			units			07/10/07 8:56	js
Temperature (Field)	Field Measurement	27.4			C			07/10/07 8:56	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	830			mg/L	10	50	07/20/07 12:08	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-543600ACZ Sample ID: **L63741-05**
Date Sampled: 07/10/07 10:52
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1401			mS/cm			07/10/07 10:52	js
pH (Field)	Field Measurement	7.6			units			07/10/07 10:52	js
Temperature (Field)	Field Measurement	29.8			C			07/10/07 10:52	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	156			mg/L	0.2	1	07/20/07 23:29	djt
Magnesium, dissolved	M200.7 ICP	12.2			mg/L	0.2	1	07/20/07 23:29	djt
Potassium, dissolved	M200.7 ICP	7.3			mg/L	0.3	2	07/22/07 21:44	wfg
Sodium, dissolved	M200.7 ICP	128			mg/L	0.3	2	07/20/07 23:29	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		97			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		97		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.7			%			07/31/07 0:00	calc
Sum of Anions		14.1			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		14.6			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	54.5			mg/L	0.5	3	07/19/07 18:20	jag
Fluoride	M300.0 - Ion Chromatography	1.0		*	mg/L	0.1	0.5	07/19/07 18:20	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.58			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.58		*	mg/L	0.02	0.1	07/11/07 19:48	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 19:48	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	970			mg/L	10	20	07/16/07 13:32	aeh
Sulfate	300.0 - Ion Chromatography	500			mg/L	10	50	07/27/07 18:41	jag
TDS (calculated)	Calculation	924			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.05						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-543600

ACZ Sample ID: **L63741-06**

Date Sampled: 07/10/07 10:52

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1401			mS/cm			07/10/07 10:52	js
pH (Field)	Field Measurement	7.6			units			07/10/07 10:52	js
Temperature (Field)	Field Measurement	29.8			C			07/10/07 10:52	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	500			mg/L	10	50	07/20/07 12:26	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-588121ACZ Sample ID: **L63741-07**
Date Sampled: 07/10/07 12:23
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	414			mS/cm			07/10/07 12:23	js
pH (Field)	Field Measurement	7.7			units			07/10/07 12:23	js
Temperature (Field)	Field Measurement	27.6			C			07/10/07 12:23	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	36.7			mg/L	0.2	1	07/20/07 23:47	wfg
Magnesium, dissolved	M200.7 ICP	4.2			mg/L	0.2	1	07/20/07 23:47	wfg
Potassium, dissolved	M200.7 ICP	2.6			mg/L	0.3	2	07/20/07 23:47	wfg
Sodium, dissolved	M200.7 ICP	35.8			mg/L	0.3	2	07/20/07 23:47	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		137			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		137		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-2.6			%			07/31/07 0:00	calc
Sum of Anions		4.0			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		3.8			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	9.0			mg/L	0.5	3	07/19/07 18:56	jag
Fluoride	M300.0 - Ion Chromatography	0.5		*	mg/L	0.1	0.5	07/19/07 18:56	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.65			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.65		*	mg/L	0.02	0.1	07/11/07 19:50	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 19:50	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	270			mg/L	10	20	07/16/07 13:33	aeh
Sulfate	300.0 - Ion Chromatography	46.7			mg/L	0.5	3	07/19/07 18:56	jag
TDS (calculated)	Calculation	221			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.22						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-588121

ACZ Sample ID: **L63741-08**

Date Sampled: 07/10/07 12:23

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	414			mS/cm			07/10/07 12:23	js
pH (Field)	Field Measurement	7.7			units			07/10/07 12:23	js
Temperature (Field)	Field Measurement	27.6			C			07/10/07 12:23	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	47.0			mg/L	0.5	3	07/19/07 19:50	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-207982ACZ Sample ID: **L63741-09**
Date Sampled: 07/10/07 13:18
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	403			mS/cm			07/10/07 13:18	js
pH (Field)	Field Measurement	7.8			units			07/10/07 13:18	js
Temperature (Field)	Field Measurement	31.3			C			07/10/07 13:18	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	28.0			mg/L	0.2	1	07/20/07 23:51	wfg
Magnesium, dissolved	M200.7 ICP	1.7			mg/L	0.2	1	07/20/07 23:51	wfg
Potassium, dissolved	M200.7 ICP	2.6			mg/L	0.3	2	07/20/07 23:51	wfg
Sodium, dissolved	M200.7 ICP	45.0			mg/L	0.3	2	07/20/07 23:51	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		121			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		121		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-4.1			%			07/31/07 0:00	calc
Sum of Anions		3.8			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		3.5			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.3			mg/L	0.5	3	07/19/07 20:08	jag
Fluoride	M300.0 - Ion Chromatography	0.9		*	mg/L	0.1	0.5	07/19/07 20:08	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.48			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.48		*	mg/L	0.02	0.1	07/11/07 19:51	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 19:51	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	260			mg/L	10	20	07/16/07 13:35	aeh
Sulfate	300.0 - Ion Chromatography	51.7			mg/L	0.5	3	07/19/07 20:08	jag
TDS (calculated)	Calculation	213			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.22						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-207982

ACZ Sample ID: **L63741-10**

Date Sampled: 07/10/07 13:18

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	403			mS/cm			07/10/07 13:18	js
pH (Field)	Field Measurement	7.8			units			07/10/07 13:18	js
Temperature (Field)	Field Measurement	31.3			C			07/10/07 13:18	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	51.8			mg/L	0.5	3	07/19/07 20:26	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-608518ACZ Sample ID: **L63741-11**
Date Sampled: 07/10/07 11:45
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	449			mS/cm			07/10/07 11:45	js
pH (Field)	Field Measurement	7.9			units			07/10/07 11:45	js
Temperature (Field)	Field Measurement	28.6			C			07/10/07 11:45	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	23.4			mg/L	0.2	1	07/20/07 23:55	wfg
Magnesium, dissolved	M200.7 ICP	2.0			mg/L	0.2	1	07/20/07 23:55	wfg
Potassium, dissolved	M200.7 ICP	2.4			mg/L	0.3	2	07/20/07 23:55	wfg
Sodium, dissolved	M200.7 ICP	62.6			mg/L	0.3	2	07/20/07 23:55	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		119			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		120		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.2			%			07/31/07 0:00	calc
Sum of Anions		4.2			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		4.1			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	9.2			mg/L	0.5	3	07/19/07 20:44	jag
Fluoride	M300.0 - Ion Chromatography	1.9			mg/L	0.1	0.5	07/19/07 20:44	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.60			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.60		*	mg/L	0.02	0.1	07/11/07 19:52	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 19:52	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	290			mg/L	10	20	07/16/07 13:36	aeh
Sulfate	300.0 - Ion Chromatography	69.7			mg/L	0.5	3	07/19/07 20:44	jag
TDS (calculated)	Calculation	245			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.18						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-608518

ACZ Sample ID: **L63741-12**

Date Sampled: 07/10/07 11:45

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	449			mS/cm			07/10/07 11:45	js
pH (Field)	Field Measurement	7.9			units			07/10/07 11:45	js
Temperature (Field)	Field Measurement	28.8			C			07/10/07 11:45	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	70.1			mg/L	0.5	3	07/19/07 21:21	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-623102ACZ Sample ID: **L63741-13**
Date Sampled: 07/10/07 15:05
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	584			mS/cm			07/10/07 15:05	js
pH (Field)	Field Measurement	7.7			units			07/10/07 15:05	js
Temperature (Field)	Field Measurement	28.8			C			07/10/07 15:05	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	60.8			mg/L	0.2	1	07/20/07 23:59	wfg
Magnesium, dissolved	M200.7 ICP	6.3			mg/L	0.2	1	07/20/07 23:59	wfg
Potassium, dissolved	M200.7 ICP	3.2			mg/L	0.3	2	07/20/07 23:59	wfg
Sodium, dissolved	M200.7 ICP	41.4			mg/L	0.3	2	07/20/07 23:59	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		128			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		128		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.9			%			07/31/07 0:00	calc
Sum of Anions		5.3			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		5.4			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	26.8			mg/L	0.5	3	07/19/07 21:57	jag
Fluoride	M300.0 - Ion Chromatography	0.4	B		mg/L	0.1	0.5	07/19/07 21:57	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.13			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.13			mg/L	0.02	0.1	07/11/07 21:03	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 21:03	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	370			mg/L	10	20	07/16/07 13:39	aeh
Sulfate	300.0 - Ion Chromatography	94			mg/L	1	5	07/27/07 19:17	jag
TDS (calculated)	Calculation	315			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.17						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-623102

ACZ Sample ID: **L63741-14**

Date Sampled: 07/10/07 15:05

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	584			mS/cm			07/10/07 15:05	js
pH (Field)	Field Measurement	7.7			units			07/10/07 15:05	js
Temperature (Field)	Field Measurement	28.8			C			07/10/07 15:05	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	104			mg/L	1	5	07/20/07 12:44	jag

Arizona license number: **AZ0102**

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-623103ACZ Sample ID: **L63741-15**
Date Sampled: 07/10/07 15:30
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	380			mS/cm			07/10/07 15:30	js
pH (Field)	Field Measurement	7.7			units			07/10/07 15:30	js
Temperature (Field)	Field Measurement	28.9			C			07/10/07 15:30	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	33.3			mg/L	0.2	1	07/21/07 0:03	wfg
Magnesium, dissolved	M200.7 ICP	3.3			mg/L	0.2	1	07/21/07 0:03	wfg
Potassium, dissolved	M200.7 ICP	2.5			mg/L	0.3	2	07/21/07 0:03	wfg
Sodium, dissolved	M200.7 ICP	34.3			mg/L	0.3	2	07/21/07 0:03	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		138			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		138		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.4			%			07/31/07 0:00	calc
Sum of Anions		3.6			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		3.5			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.0			mg/L	0.5	3	07/19/07 22:33	jag
Fluoride	M300.0 - Ion Chromatography	0.5			mg/L	0.1	0.5	07/19/07 22:33	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.49			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.49			mg/L	0.02	0.1	07/11/07 21:05	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 21:05	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	250			mg/L	10	20	07/16/07 13:41	aeh
Sulfate	300.0 - Ion Chromatography	28.6			mg/L	0.5	3	07/19/07 22:33	jag
TDS (calculated)	Calculation	195			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.28						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-623103

ACZ Sample ID: **L63741-16**

Date Sampled: 07/10/07 15:30

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	380			mS/cm			07/10/07 15:30	js
pH (Field)	Field Measurement	7.7			units			07/10/07 15:30	js
Temperature (Field)	Field Measurement	28.9			C			07/10/07 15:30	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	28.8			mg/L	0.5	3	07/19/07 23:27	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-623104ACZ Sample ID: **L63741-17**
Date Sampled: 07/10/07 16:10
Date Received: 07/11/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	378			mS/cm			07/10/07 16:10	js
pH (Field)	Field Measurement	7.8			units			07/10/07 16:10	js
Temperature (Field)	Field Measurement	29.2			C			07/10/07 16:10	js

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	31.9			mg/L	0.2	1	07/21/07 0:07	wfg
Magnesium, dissolved	M200.7 ICP	2.9			mg/L	0.2	1	07/21/07 0:07	wfg
Potassium, dissolved	M200.7 ICP	2.6			mg/L	0.3	2	07/21/07 0:07	wfg
Sodium, dissolved	M200.7 ICP	37.5			mg/L	0.3	2	07/21/07 0:07	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		130			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		130		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.4			%			07/31/07 0:00	calc
Sum of Anions		3.6			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		3.5			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	7.7			mg/L	0.5	3	07/19/07 23:46	jag
Fluoride	M300.0 - Ion Chromatography	0.5			mg/L	0.1	0.5	07/19/07 23:46	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.41			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.41			mg/L	0.02	0.1	07/11/07 21:08	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 21:08	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	240			mg/L	10	20	07/16/07 13:42	aeh
Sulfate	300.0 - Ion Chromatography	36.6			mg/L	0.5	3	07/19/07 23:46	jag
TDS (calculated)	Calculation	200			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.20						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-623104

ACZ Sample ID: **L63741-18**

Date Sampled: 07/10/07 16:10

Date Received: 07/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	378			mS/cm			07/10/07 16:10	js
pH (Field)	Field Measurement	7.8			units			07/10/07 16:10	js
Temperature (Field)	Field Measurement	29.2			C			07/10/07 16:10	js

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	36.6			mg/L	0.5	3	07/20/07 0:04	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FIELD DUP-071007A

ACZ Sample ID: **L63741-19**

Date Sampled: 07/10/07 00:00

Date Received: 07/11/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	45.5			mg/L	0.2	1	07/21/07 0:11	wfg
Magnesium, dissolved	M200.7 ICP	6.0			mg/L	0.2	1	07/21/07 0:11	wfg
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	2	07/21/07 0:11	wfg
Sodium, dissolved	M200.7 ICP	37.0			mg/L	0.3	2	07/21/07 0:11	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		141			mg/L	2	20	07/14/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/14/07 0:00	cas
Total Alkalinity		141		*	mg/L	2	20	07/14/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.1			%			07/31/07 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		4.4			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	13.4			mg/L	0.5	3	07/20/07 0:22	jag
Fluoride	M300.0 - Ion Chromatography	0.5			mg/L	0.1	0.5	07/20/07 0:22	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	2.02			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.02			mg/L	0.02	0.1	07/11/07 21:09	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 21:09	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	230			mg/L	10	20	07/16/07 13:44	aeh
Sulfate	300.0 - Ion Chromatography	58.0			mg/L	0.5	3	07/20/07 0:22	jag
TDS (calculated)	Calculation	257			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	0.89						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FIELD DUP-071007A

ACZ Sample ID: **L63741-20**

Date Sampled: 07/10/07 00:00

Date Received: 07/11/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	58.1			mg/L	0.5	3	07/20/07 0:40	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63741**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228321													
WG228321PBW1	PBW	07/14/07 13:14				U	mg/L		-20	20			
WG228321LCSW2	LCSW	07/14/07 13:26	WC070705-3	820		815.7	mg/L	99.5	90	110			
L63741-13DUP	DUP	07/14/07 14:49			128	127.5	mg/L				0.4	20	
L63744-07DUP	DUP	07/14/07 16:17			320	323.8	mg/L				1.2	20	
WG228321PBW2	PBW	07/14/07 16:23				U	mg/L		-20	20			
WG228321LCSW5	LCSW	07/14/07 16:35	WC070705-3	820		815.7	mg/L	99.5	90	110			
WG228321PBW3	PBW	07/14/07 20:25				U	mg/L		-20	20			
WG228321LCSW8	LCSW	07/14/07 20:38	WC070705-3	820		822.9	mg/L	100.4	90	110			
WG228321PBW4	PBW	07/14/07 23:53				U	mg/L		-20	20			
WG228321LCSW11	LCSW	07/15/07 0:05	WC070705-3	820		820.5	mg/L	100.1	90	110			
WG228321LCSW14	LCSW	07/15/07 3:03	WC070705-3	820		821.6	mg/L	100.2	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228664													
WG228664ICV	ICV	07/20/07 21:37	II070703-2	100		101.19	mg/L	101.2	95	105			
WG228664ICB	ICB	07/20/07 21:41				U	mg/L		-0.6	0.6			
WG228664LFB	LFB	07/20/07 21:55	II070719-3	67.97008		73.31	mg/L	107.9	85	115			
L63739-03AS	AS	07/20/07 22:55	II070719-3	67.97008	208	268.64	mg/L	89.2	85	115			
L63739-03ASD	ASD	07/20/07 22:59	II070719-3	67.97008	208	268.97	mg/L	89.7	85	115	0.12	20	
WG228694													
WG228694ICV	ICV	07/20/07 21:55	II070703-2	100		96.98	mg/L	97	95	105			
WG228694ICB	ICB	07/20/07 21:59				U	mg/L		-0.6	0.6			
WG228694LFB	LFB	07/20/07 22:16	II070719-3	67.97008		67.87	mg/L	99.9	85	115			
L63715-11AS	AS	07/20/07 23:22	II070719-3	67.97008	8.4	77.11	mg/L	101.1	85	115			
L63715-11ASD	ASD	07/20/07 23:26	II070719-3	67.97008	8.4	74.7	mg/L	97.5	85	115	3.18	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228645													
WG228645ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG228645ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228645ICV1	ICV	07/19/07 15:37	IC070710-1	20		20.37	mg/L	101.9	90	110			
WG228645ICB1	ICB	07/19/07 15:55				U	mg/L		-1.5	1.5			
WG228645LFB	LFB	07/19/07 16:13	IC070205-3	30		30.35	mg/L	101.2	90	110			
L63741-01DUP	DUP	07/19/07 16:49			13.4	13.39	mg/L				0.1	20	
L63741-02AS	AS	07/19/07 17:25	IC070205-3	30	13.5	43.53	mg/L	100.1	90	110			
L63741-11DUP	DUP	07/19/07 21:03			9.2	9.17	mg/L				0.3	20	
L63741-12AS	AS	07/19/07 21:39	IC070205-3	30	9.2	40.33	mg/L	103.8	90	110			
WG228645ICV1	ICV	07/20/07 11:32	IC070710-1	20		20.28	mg/L	101.4	90	110			
WG228645ICB1	ICB	07/20/07 11:50				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63741**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228645													
WG228645ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG228645ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG228645ICV1	ICV	07/19/07 15:37	IC070710-1	3.984		4.07	mg/L	102.2	90	110			
WG228645ICB1	ICB	07/19/07 15:55				.13	mg/L		-0.3	0.3			
WG228645LFB	LFB	07/19/07 16:13	IC070205-3	1.5		1.56	mg/L	104	90	110			
L63741-01DUP	DUP	07/19/07 16:49			.5	.5	mg/L				0	20	RA
L63741-02AS	AS	07/19/07 17:25	IC070205-3	1.5	.5	2.09	mg/L	106	90	110			
L63741-11DUP	DUP	07/19/07 21:03			1.9	1.86	mg/L				2.1	20	
L63741-12AS	AS	07/19/07 21:39	IC070205-3	1.5	1.9	3.37	mg/L	98	90	110			
WG228645ICV1	ICV	07/20/07 11:32	IC070710-1	3.984		4.19	mg/L	105.2	90	110			
WG228645ICB1	ICB	07/20/07 11:50				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228664													
WG228664ICV	ICV	07/20/07 21:37	II070703-2	100		101.36	mg/L	101.4	95	105			
WG228664ICB	ICB	07/20/07 21:41				U	mg/L		-0.6	0.6			
WG228664LFB	LFB	07/20/07 21:55	II070719-3	54.96908		59.09	mg/L	107.5	85	115			
L63739-03AS	AS	07/20/07 22:55	II070719-3	54.96908	126	178.24	mg/L	95	85	115			
L63739-03ASD	ASD	07/20/07 22:59	II070719-3	54.96908	126	176.94	mg/L	92.7	85	115	0.73	20	
WG228694													
WG228694ICV	ICV	07/20/07 21:55	II070703-2	100		98.57	mg/L	98.6	95	105			
WG228694ICB	ICB	07/20/07 21:59				U	mg/L		-0.6	0.6			
WG228694LFB	LFB	07/20/07 22:16	II070719-3	54.96908		55.34	mg/L	100.7	85	115			
L63715-11AS	AS	07/20/07 23:22	II070719-3	54.96908	1.1	59.08	mg/L	105.5	85	115			
L63715-11ASD	ASD	07/20/07 23:26	II070719-3	54.96908	1.1	57.07	mg/L	101.8	85	115	3.46	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63741**

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228161													
WG228161ICV	ICV	07/11/07 18:51	WI070609-1	2.416		2.362	mg/L	97.8	90	110			
WG228161ICB	ICB	07/11/07 18:52				U	mg/L		-0.06	0.06			
WG228161LFB1	LFB	07/11/07 18:56	WI070307-9	2		2.088	mg/L	104.4	90	110			
WG228161LFB2	LFB	07/11/07 19:34	WI070307-9	2		2.065	mg/L	103.3	90	110			
L63739-02AS	AS	07/11/07 19:36	WI070307-9	2	.05	2.322	mg/L	113.6	90	110			M1
L63739-03DUP	DUP	07/11/07 19:42			.04	.037	mg/L				7.8	20	RA

WG228163

WG228163ICV	ICV	07/11/07 20:59	WI070609-1	2.416		2.482	mg/L	102.7	90	110			
WG228163ICB	ICB	07/11/07 21:00				U	mg/L		-0.06	0.06			
WG228163LFB1	LFB	07/11/07 21:01	WI070307-9	2		2	mg/L	100	90	110			
L63741-13AS	AS	07/11/07 21:04	WI070307-9	2	1.13	3.23	mg/L	105	90	110			
L63741-15DUP	DUP	07/11/07 21:06			.49	.494	mg/L				0.8	20	
WG228163LFB2	LFB	07/11/07 21:40	WI070307-9	2		2.047	mg/L	102.4	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228161													
WG228161ICV	ICV	07/11/07 18:51	WI070609-1	.609		.616	mg/L	101.1	90	110			
WG228161ICB	ICB	07/11/07 18:52				U	mg/L		-0.03	0.03			
WG228161LFB1	LFB	07/11/07 18:56	WI070307-9	1		1.028	mg/L	102.8	90	110			
WG228161LFB2	LFB	07/11/07 19:34	WI070307-9	1		1.012	mg/L	101.2	90	110			
L63739-02AS	AS	07/11/07 19:36	WI070307-9	1		1.196	mg/L	119.6	90	110			M1
L63739-03DUP	DUP	07/11/07 19:42			.01	.013	mg/L				26.1	20	RA

WG228163

WG228163ICV	ICV	07/11/07 20:59	WI070609-1	.609		.627	mg/L	103	90	110			
WG228163ICB	ICB	07/11/07 21:00				U	mg/L		-0.03	0.03			
WG228163LFB1	LFB	07/11/07 21:01	WI070307-9	1		.959	mg/L	95.9	90	110			
L63741-13AS	AS	07/11/07 21:04	WI070307-9	1	U	1.003	mg/L	100.3	90	110			
L63741-15DUP	DUP	07/11/07 21:06			U	U	mg/L				0	20	RA
WG228163LFB2	LFB	07/11/07 21:40	WI070307-9	1		.973	mg/L	97.3	90	110			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228694													
WG228694ICV	ICV	07/20/07 21:55	II070703-2	20		19.81	mg/L	99.1	95	105			
WG228694ICB	ICB	07/20/07 21:59				U	mg/L		-0.9	0.9			
WG228694LFB	LFB	07/20/07 22:16	II070719-3	99.76186		99.72	mg/L	100	85	115			
L63715-11AS	AS	07/20/07 23:22	II070719-3	99.76186	.7	103.66	mg/L	103.2	85	115			
L63715-11ASD	ASD	07/20/07 23:26	II070719-3	99.76186	.7	99.54	mg/L	99.1	85	115	4.06	20	

WG228816

WG228816ICV	ICV	07/22/07 19:35	II070703-2	20		20.55	mg/L	102.8	95	105			
WG228816ICB	ICB	07/22/07 19:39				U	mg/L		-0.9	0.9			
WG228816LFB	LFB	07/22/07 19:55	II070719-3	99.76186		108.26	mg/L	108.5	85	115			
L63739-03AS	AS	07/22/07 21:08	II070719-3	99.76186	11.4	125.61	mg/L	114.5	85	115			
L63739-03ASD	ASD	07/22/07 21:20	II070719-3	99.76186	11.4	126.45	mg/L	115.3	85	115	0.67	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63741**

Project ID: OJ03Z5

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228395													
WG228395PBW	PBW	07/16/07 13:20				16	mg/L		-20	20			
WG228395LCSW	LCSW	07/16/07 13:21	PCN27101	261		294	mg/L	112.6	80	120			
L63741-11DUP	DUP	07/16/07 13:38			290	282	mg/L				2.8	20	
L63747-01DUP	DUP	07/16/07 13:54			2200	2178	mg/L				1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228664													
WG228664ICV	ICV	07/20/07 21:37	II070703-2	100		101.28	mg/L	101.3	95	105			
WG228664ICB	ICB	07/20/07 21:41				U	mg/L		-0.9	0.9			
WG228664LFB	LFB	07/20/07 21:55	II070719-3	98.21624		104.55	mg/L	106.4	85	115			
L63739-03AS	AS	07/20/07 22:55	II070719-3	98.21624	40	143.67	mg/L	105.6	85	115			
L63739-03ASD	ASD	07/20/07 22:59	II070719-3	98.21624	40	146.1	mg/L	108	85	115	1.68	20	
WG228694													
WG228694ICV	ICV	07/20/07 21:55	II070703-2	100		99.19	mg/L	99.2	95	105			
WG228694ICB	ICB	07/20/07 21:59				U	mg/L		-0.9	0.9			
WG228694LFB	LFB	07/20/07 22:16	II070719-3	98.21624		99.3	mg/L	101.1	85	115			
L63715-11AS	AS	07/20/07 23:22	II070719-3	98.21624	2.5	106.77	mg/L	106.2	85	115			
L63715-11ASD	ASD	07/20/07 23:26	II070719-3	98.21624	2.5	102.77	mg/L	102.1	85	115	3.82	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228645													
WG228645ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG228645ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228645ICV1	ICV	07/19/07 15:37	IC070710-1	50.15		50.73	mg/L	101.2	90	110			
WG228645ICB1	ICB	07/19/07 15:55				U	mg/L		-1.5	1.5			
WG228645LFB	LFB	07/19/07 16:13	IC070205-3	30		30.26	mg/L	100.9	90	110			
L63741-01DUP	DUP	07/19/07 16:49			57.6	57.66	mg/L				0.1	20	
L63741-02AS	AS	07/19/07 17:25	IC070205-3	30	57.9	86.93	mg/L	96.8	90	110			
L63741-11DUP	DUP	07/19/07 21:03			69.7	69.77	mg/L				0.1	20	
L63741-12AS	AS	07/19/07 21:39	IC070205-3	30	70.1	99.27	mg/L	97.2	90	110			
WG228645ICV1	ICV	07/20/07 11:32	IC070710-1	50.15		51.07	mg/L	101.8	90	110			
WG228645ICB1	ICB	07/20/07 11:50				U	mg/L		-1.5	1.5			
WG229223													
WG229223ICV	ICV	07/27/07 17:10	IC070710-1	50.15		50.67	mg/L	101	90	110			
WG229223ICB	ICB	07/27/07 17:28				U	mg/L		-1.5	1.5			
WG229223LFB	LFB	07/27/07 17:46	WI070727-1	30		31.49	mg/L	105	90	110			
L63741-03DUP	DUP	07/27/07 18:23			860	858	mg/L				0.2	20	
L63741-05AS	AS	07/27/07 18:59	WI070727-1	600	500	1065	mg/L	94.2	90	110			

Phelps Dodge SierritaACZ Project ID: **L63741**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63741-01	WG228645	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228161	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-03	WG228645	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228161	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-05	WG228645	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228161	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge SierritaACZ Project ID: **L63741**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63741-07	WG228645	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228161	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-09	WG228645	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228161	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-11	WG228161	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-13	WG228163	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-15	WG228163	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge SierritaACZ Project ID: **L63741**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63741-17	WG228163	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63741-19	WG228163	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228321	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L63741**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63741
Date Received: 7/11/2007
Received By:
Date Printed: 7/11/2007

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)
1975		3.5	15

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63741
Date Received: 7/11/2007
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
L63741-01	FGW-627485		Y									☐
L63741-02	UGW-627485									X		☐
L63741-03	FGW-502546		Y									☐
L63741-04	UGW-502546									X		☐
L63741-05	FGW-543600		Y									☐
L63741-06	UGW-543600									X		☐
L63741-07	FGW-588121		Y									☐
L63741-08	UGW-588121									X		☐
L63741-09	FGW-207982		Y									☐
L63741-10	UGW-207982									X		☐
L63741-11	FGW-608518		Y									☐
L63741-12	UGW-608518									X		☐
L63741-13	FGW-623102		Y									☐
L63741-14	UGW-623102									X		☐
L63741-15	FGW-623103		Y									☐
L63741-16	UGW-623103									X		☐
L63741-17	FGW-623104		Y									☐
L63741-18	UGW-623104									X		☐
L63741-19	FIELD DUP-071007A		Y									☐
L63741-20	FIELD DUP-071007A									X		☐

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: _____

ACZ Laboratories, Inc.

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

L63741

CHAIN of CUSTODY**Report to:**

Name: Kim Garcia
 Company: Hydro Geo Chem Inc.
 E-mail: king@hgcinc.com

Address: 51 W. Watmore Rd.
Tucson AZ 85705-1678
 Telephone: 520-2931500 X123

Copy of Report to:

Name: Ned Hall / Billy Dorris / Jim Norris
 Company: PDST / HGC

E-mail: jimn@hgcinc.com / BillyDorris@FMI.com
 Telephone: 520-293 1500 X112 / 520 648 8873

Invoice to:

Name: Ned Hall
 Company: PDST
 E-mail: NedHall@FMI.com

Address: 6200 W Dural Mine Rd.
P.O. Box 527 Green Valley AZ 85622
 Telephone: 520-648 8857

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 #: Sierrita 8H0RT
 Project/PO #: 030375
 Reporting state for compliance testing: AZ
 Sampler's Name: Johanna Santamaria
 Are any samples NRC licensable material? NO

SAMPLE IDENTIFICATION			DATE:TIME	Matrix	# of Containers	Ca, Mg, Na, K	alk, TDS, SO ₄	CL, F ⁻ , NO ₂ , NO ₃	SO ₄	PH	EC	Temp
FGW-627485	7/10/07	1345	GW	2	X	X				7.60	475	26.9
UGW-627485	7/10/07	1345	GW	1			X			7.60	475	26.9
FGW-502546	7/10/07	0856	GW	2	X	X				7.32	1945	22.7
UGW-502546	7/10/07	0856	GW	1			X			7.32	1945	22.4
FGW-543600	7/10/07	1052		2	X	X				7.63	1401	29.8
UGW-543600	7/10/07	1052		1			X			7.63	1401	29.8
FGW-588121	7/10/07	1223		2	X	X				7.68	414	22.6
UGW-588121	7/10/07	1223		1			X			7.68	414	22.6
FGW-207982	7/10/07	1318		2	X	X				7.92	403	36.3
UGW-207982	7/10/07	1318		1			X			7.92	403	36.3

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

REMARKS

FGW = Filtered Groundwater Sample
 UGW = Unfiltered Groundwater Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	<u>7/10/07 1735</u>	<u>KW</u>	<u>7-12-07 14:38</u>

ACZ Laboratories, Inc.

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

L63741

CHAIN of CUSTODY**Report to:**

Name: Kim Garcia
 Company: Hydro Geo Chem, Inc
 E-mail: kimg@hgcinc.com

Address: 51 W. Wetmore Rd.
 Tucson AZ. 85705-1678
 Telephone: 520-2931500 x123

Copy of Report to:

Name: Ned Hall/Billy Dorris/Jim Norris
 Company: PDST/HGC

E-mail: jimn@hgcinc.com/BillyDorris@FMT.com
 Telephone: 520-2931500 x112/5206488873

Invoice to:

Name: Ned Hall
 Company: PDST
 E-mail: NedHall@FMT.com

Address: 6200 W. Duval Hine Rd
 P.O. Box 527 Green Valley AZ 85622
 Telephone: 520-6488857

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 #: Sierrita B HORT
 Project/PO #: 030325
 Reporting state for compliance testing: AZ
 Sampler's Name: Johanna Santamaria
 Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca, Mg, Na, K	alk, TDS, SO ₄	Cl ⁻ , F ⁻ , NO ₂ ⁻ , NO ₃ ⁻	SO ₄ ⁻	pH	EC	Temp
FGW-608518	7/10/07 1145	GW	2	X	X			7.93	449	28.6
UGW-608518	7/10/07 1145		1			X		7.93	449	28.6
FGW-623102	7/10/07 1505		2	X	X			7.66	584	28.8
UGW-623102	7/10/07 1505		1			X		7.66	584	28.8
FGW-623103	7/10/07 1530		2	X	X			7.73	380	28.9
UGW-623103	7/10/07 1530		1			X		7.73	380	28.9
FGW-623104	7/10/07 1610		2	X	X			7.84	378	29.2
UGW-623104	7/10/07 1610		1			X		7.84	378	29.2
Field Dup-071007A	7-10-07		2	X	X					
Field Dup-071007A	7-10-07		1			X				

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

REMARKS

FGW = Filtered Ground Water Sample
 UGW = Unfiltered Ground Water Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	7/10/07 1735	KU	7-11-07 1435

July 25, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63742

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 11, 2007. This project has been assigned to ACZ's project number, L63742. Please reference this number in all future inquiries.

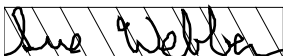
All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63742. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after August 25, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: EQB-071007

ACZ Sample ID: **L63742-01**
Date Sampled: 07/10/07 15:30
Date Received: 07/11/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃			U		mg/L	2	20	07/13/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/13/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/13/07 0:00	cas
Total Alkalinity			U	*	mg/L	2	20	07/13/07 0:00	cas
Chloride	M300.0 - Ion Chromatography		U	*	mg/L	0.5	3	07/20/07 2:29	jag
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	07/20/07 2:29	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂		U		mg/L	0.02	0.1	07/25/07 8:35	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U		mg/L	0.02	0.1	07/11/07 21:10	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 21:10	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C		U		mg/L	10	20	07/16/07 13:45	aeh
Sulfate	300.0 - Ion Chromatography		U	*	mg/L	0.5	3	07/20/07 2:29	jag
TDS (calculated)	Calculation		U		mg/L	10	50	07/25/07 8:35	calc
TDS (ratio - measured/calculated)	Calculation	n/a						07/25/07 8:35	calc

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: TB-071007ACZ Sample ID: **L63742-02**
Date Sampled: 07/10/07 00:00
Date Received: 07/11/07
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃			U		mg/L	2	20	07/13/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/13/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/13/07 0:00	cas
Total Alkalinity			U	*	mg/L	2	20	07/13/07 0:00	cas
Chloride	M300.0 - Ion Chromatography		U	*	mg/L	0.5	3	07/20/07 3:05	jag
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	07/20/07 3:05	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂		U		mg/L	0.02	0.1	07/25/07 8:35	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U		mg/L	0.02	0.1	07/11/07 21:11	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/11/07 21:11	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C		U		mg/L	10	20	07/16/07 13:47	aeH
Sulfate	300.0 - Ion Chromatography		U	*	mg/L	0.5	3	07/20/07 3:05	jag
TDS (calculated)	Calculation		U		mg/L	10	50	07/25/07 8:35	calc
TDS (ratio - measured/calculated)	Calculation	n/a						07/25/07 8:35	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63742**

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228212													
WG228212PBW1	PBW	07/12/07 15:43				13.6	mg/L		-20	20			
WG228212LCSW2	LCSW	07/12/07 15:55	WC070705-3	820		816.6	mg/L	99.6	90	110			
WG228212PBW2	PBW	07/12/07 17:43				U	mg/L		-20	20			
WG228212LCSW5	LCSW	07/12/07 17:55	WC070705-3	820		815.2	mg/L	99.4	90	110			
WG228212PBW3	PBW	07/12/07 21:10				U	mg/L		-20	20			
WG228212LCSW8	LCSW	07/12/07 21:23	WC070705-3	820		817.5	mg/L	99.7	90	110			
WG228212PBW4	PBW	07/13/07 0:34				U	mg/L		-20	20			
WG228212LCSW11	LCSW	07/13/07 0:47	WC070705-3	820		820.5	mg/L	100.1	90	110			
L63743-03DUP	DUP	07/13/07 2:16			285	284.8	mg/L				0.1	20	
WG228212LCSW14	LCSW	07/13/07 4:28	WC070705-3	820		823	mg/L	100.4	90	110			

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228647													
WG228647ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG228647ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228647ICV1	ICV	07/20/07 1:34	IC070710-1	20		20.3	mg/L	101.5	90	110			
WG228647ICB1	ICB	07/20/07 1:52				U	mg/L		-1.5	1.5			
WG228647LFB	LFB	07/20/07 2:10	IC070205-3	30		30.48	mg/L	101.6	90	110			
L63742-01DUP	DUP	07/20/07 2:47			U	U	mg/L				0	20	RA
L63742-02AS	AS	07/20/07 3:23	IC070205-3	30	U	30.1	mg/L	100.3	90	110			
WG228647ICV1	ICV	07/20/07 13:38	IC070710-1	20		20.29	mg/L	101.5	90	110			
WG228647ICB1	ICB	07/20/07 13:57				U	mg/L		-1.5	1.5			

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228647													
WG228647ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG228647ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG228647ICV1	ICV	07/20/07 1:34	IC070710-1	3.984		4.19	mg/L	105.2	90	110			
WG228647ICB1	ICB	07/20/07 1:52				U	mg/L		-0.3	0.3			
WG228647LFB	LFB	07/20/07 2:10	IC070205-3	1.5		1.62	mg/L	108	90	110			
L63742-01DUP	DUP	07/20/07 2:47			U	U	mg/L				0	20	RA
L63742-02AS	AS	07/20/07 3:23	IC070205-3	1.5	U	1.6	mg/L	106.7	90	110			
WG228647ICV1	ICV	07/20/07 13:38	IC070710-1	3.984		4.16	mg/L	104.4	90	110			
WG228647ICB1	ICB	07/20/07 13:57				U	mg/L		-0.3	0.3			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63742**

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228161													
WG228161ICV	ICV	07/11/07 18:51	WI070609-1	2.416		2.362	mg/L	97.8	90	110			
WG228161ICB	ICB	07/11/07 18:52				U	mg/L		-0.06	0.06			
WG228163													
WG228163ICV	ICV	07/11/07 20:59	WI070609-1	2.416		2.482	mg/L	102.7	90	110			
WG228163ICB	ICB	07/11/07 21:00				U	mg/L		-0.06	0.06			
WG228163LFB1	LFB	07/11/07 21:01	WI070307-9	2		2	mg/L	100	90	110			
L63741-13AS	AS	07/11/07 21:04	WI070307-9	2	1.13	3.23	mg/L	105	90	110			
L63741-15DUP	DUP	07/11/07 21:06			.49	.494	mg/L				0.8	20	
WG228163LFB2	LFB	07/11/07 21:40	WI070307-9	2		2.047	mg/L	102.4	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228161													
WG228161ICV	ICV	07/11/07 18:51	WI070609-1	.609		.616	mg/L	101.1	90	110			
WG228161ICB	ICB	07/11/07 18:52				U	mg/L		-0.03	0.03			
WG228163													
WG228163ICV	ICV	07/11/07 20:59	WI070609-1	.609		.627	mg/L	103	90	110			
WG228163ICB	ICB	07/11/07 21:00				U	mg/L		-0.03	0.03			
WG228163LFB1	LFB	07/11/07 21:01	WI070307-9	1		.959	mg/L	95.9	90	110			
L63741-13AS	AS	07/11/07 21:04	WI070307-9	1	U	1.003	mg/L	100.3	90	110			
L63741-15DUP	DUP	07/11/07 21:06			U	U	mg/L				0	20	RA
WG228163LFB2	LFB	07/11/07 21:40	WI070307-9	1		.973	mg/L	97.3	90	110			

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228395													
WG228395PBW	PBW	07/16/07 13:20				16	mg/L		-20	20			
WG228395LCSW	LCSW	07/16/07 13:21	PCN27101	261		294	mg/L	112.6	80	120			
L63747-01DUP	DUP	07/16/07 13:54			2200	2178	mg/L				1	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63742**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228647													
WG228647ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG228647ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228647ICV1	ICV	07/20/07 1:34	IC070710-1	50.15		51.16	mg/L	102	90	110			
WG228647ICB1	ICB	07/20/07 1:52				U	mg/L		-1.5	1.5			
WG228647LFB	LFB	07/20/07 2:10	IC070205-3	30		30.35	mg/L	101.2	90	110			
L63742-01DUP	DUP	07/20/07 2:47			U	U	mg/L				0	20	RA
L63742-02AS	AS	07/20/07 3:23	IC070205-3	30	U	29.99	mg/L	100	90	110			
WG228647ICV1	ICV	07/20/07 13:38	IC070710-1	50.15		51.13	mg/L	102	90	110			
WG228647ICB1	ICB	07/20/07 13:57				U	mg/L		-1.5	1.5			

Phelps Dodge SierritaACZ Project ID: **L63742**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63742-01	WG228647	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228163	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228647	Sulfate	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).
	WG228212	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63742-02	WG228647	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228163	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228647	Sulfate	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).
	WG228212	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L63742**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63742
Date Received: 7/11/2007
Received By:
Date Printed: 7/11/2007

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)
1975		3.5	15

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63742
Date Received: 7/11/2007
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
L63742-01	EQB-071007									X		☐
L63742-02	TB-071007									X		☐

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: _____

L103742

Address: Same

Telephone: _____

E-mail: *Same*

Telephone:

Address: Same

Telephone: _____

YES	☒
NO	☐

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

ANALYSES REQUESTED (attach list or use quote number)

[illegible]

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

Filtered Sample

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

DATE:TIME

Walt Meyer	7/10/07	1735	RL	7-11-07	1438

August 01, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63796

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 12, 2007. This project has been assigned to ACZ's project number, L63796. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63796. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 01, 2007. 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.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FWG-603428ACZ Sample ID: **L63796-01**
Date Sampled: 07/11/07 00:00
Date Received: 07/12/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	447			mS/cm			07/11/07 0:00	ma
pH (Field)	Field Measurement	7.6			units			07/11/07 0:00	ma
Temperature (Field)	Field Measurement	26.8			C			07/11/07 0:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	48.7			mg/L	0.2	1	07/26/07 13:05	djt
Magnesium, dissolved	M200.7 ICP	6.9			mg/L	0.2	1	07/26/07 13:05	djt
Potassium, dissolved	M200.7 ICP	3.0		*	mg/L	0.3	2	07/26/07 13:05	djt
Sodium, dissolved	M200.7 ICP	34.1			mg/L	0.3	2	07/26/07 13:05	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		157			mg/L	2	20	07/16/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Total Alkalinity		157		*	mg/L	2	20	07/16/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.1			%			07/31/07 0:00	calc
Sum of Anions		4.4			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		4.5			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	12.1		*	mg/L	0.5	3	07/20/07 4:17	jag
Fluoride	M300.0 - Ion Chromatography	0.5	B	*	mg/L	0.1	0.5	07/20/07 4:17	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.33			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.33			mg/L	0.02	0.1	07/12/07 20:25	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U		mg/L	0.01	0.05	07/12/07 20:25	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	300	H	*	mg/L	10	20	07/26/07 16:53	kmc
Sulfate	300.0 - Ion Chromatography	41.5		*	mg/L	0.5	3	07/20/07 4:17	jag
TDS (calculated)	Calculation	247			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.21						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UWG-603428

ACZ Sample ID: **L63796-02**

Date Sampled: 07/11/07 00:00

Date Received: 07/12/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	447			mS/cm			07/11/07 0:00	ma
pH (Field)	Field Measurement	7.6			units			07/11/07 0:00	ma
Temperature (Field)	Field Measurement	26.8			C			07/11/07 0:00	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.7		*	mg/L	0.5	3	07/20/07 4:35	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FWG-603429ACZ Sample ID: **L63796-03**

Date Sampled: 07/11/07 00:00

Date Received: 07/12/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	649			mS/cm			07/11/07 0:00	ma
pH (Field)	Field Measurement	7.5			units			07/11/07 0:00	ma
Temperature (Field)	Field Measurement	24.0			C			07/11/07 0:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	78.8			mg/L	0.2	1	07/26/07 13:08	djt
Magnesium, dissolved	M200.7 ICP	12.3			mg/L	0.2	1	07/26/07 13:08	djt
Potassium, dissolved	M200.7 ICP	3.8		*	mg/L	0.3	2	07/26/07 13:08	djt
Sodium, dissolved	M200.7 ICP	39.3			mg/L	0.3	2	07/26/07 13:08	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		189			mg/L	2	20	07/16/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Total Alkalinity		189		*	mg/L	2	20	07/16/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.8			%			07/31/07 0:00	calc
Sum of Anions		6.6			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		6.7			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	21.9		*	mg/L	0.5	3	07/20/07 4:53	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	07/20/07 4:53	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	2.75			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.75			mg/L	0.02	0.1	07/12/07 20:26	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U		mg/L	0.01	0.05	07/12/07 20:26	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	440	H	*	mg/L	10	20	07/26/07 16:54	kmc
Sulfate	300.0 - Ion Chromatography	98.0		*	mg/L	0.5	3	07/20/07 4:53	jag
TDS (calculated)	Calculation	380			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.16						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UWG-603429

ACZ Sample ID: **L63796-04**

Date Sampled: 07/11/07 00:00

Date Received: 07/12/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	649			mS/cm			07/11/07 0:00	ma
pH (Field)	Field Measurement	7.5			units			07/11/07 0:00	ma
Temperature (Field)	Field Measurement	24.0			C			07/11/07 0:00	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	98.7		*	mg/L	0.5	3	07/20/07 5:48	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FWG-208825ACZ Sample ID: **L63796-05**
Date Sampled: 07/11/07 00:00
Date Received: 07/12/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	389			mS/cm			07/11/07 0:00	ma
pH (Field)	Field Measurement	7.6			units			07/11/07 0:00	ma
Temperature (Field)	Field Measurement	27.1			C			07/11/07 0:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	42.9			mg/L	0.2	1	07/27/07 11:49	djt
Magnesium, dissolved	M200.7 ICP	6.1			mg/L	0.2	1	07/27/07 11:49	djt
Potassium, dissolved	M200.7 ICP	3.1			mg/L	0.3	2	07/27/07 11:49	djt
Sodium, dissolved	M200.7 ICP	30.8			mg/L	0.3	2	07/27/07 11:49	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		176			mg/L	2	20	07/16/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Total Alkalinity		176		*	mg/L	2	20	07/16/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.3			%			07/31/07 0:00	calc
Sum of Anions		3.9			meq/L	0.1	0.5	07/31/07 0:00	calc
Sum of Cations		4.0			meq/L	0.1	0.5	07/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.1		*	mg/L	0.5	3	07/20/07 6:06	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	07/20/07 6:06	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.57			mg/L	0.02	0.1	07/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.57			mg/L	0.02	0.1	07/12/07 20:27	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U		mg/L	0.01	0.05	07/12/07 20:27	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	230	H	*	mg/L	10	20	07/26/07 16:56	kmc
Sulfate	300.0 - Ion Chromatography	6.9		*	mg/L	0.5	3	07/20/07 6:06	jag
TDS (calculated)	Calculation	206			mg/L	10	50	07/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						07/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UWG-208825

ACZ Sample ID: **L63796-06**

Date Sampled: 07/11/07 00:00

Date Received: 07/12/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	389			mS/cm			07/11/07 0:00	ma
pH (Field)	Field Measurement	7.6			units			07/11/07 0:00	ma
Temperature (Field)	Field Measurement	27.1			C			07/11/07 0:00	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	6.9		*	mg/L	0.5	3	07/20/07 6:24	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63796**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228358													
WG228358PBW1	PBW	07/16/07 10:08				U	mg/L		-20	20			
WG228358LCSW2	LCSW	07/16/07 10:20	WC070705-3	820		814.7	mg/L	99.4	90	110			
L63811-05DUP	DUP	07/16/07 12:08			467	465.5	mg/L				0.3	20	
WG228358PBW2	PBW	07/16/07 13:43				U	mg/L		-20	20			
WG228358LCSW5	LCSW	07/16/07 13:56	WC070705-3	820		817.8	mg/L	99.7	90	110			
WG228358PBW3	PBW	07/16/07 16:59				U	mg/L		-20	20			
WG228358LCSW8	LCSW	07/16/07 17:11	WC070705-3	820		819.5	mg/L	99.9	90	110			
WG228358PBW4	PBW	07/16/07 19:45				U	mg/L		-20	20			
WG228358LCSW11	LCSW	07/16/07 19:57	WC070705-3	820		824.6	mg/L	100.6	90	110			
WG228358LCSW14	LCSW	07/16/07 22:20	WC070705-3	820		825.7	mg/L	100.7	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229049													
WG229049ICV1	ICV	07/26/07 11:17	II070703-2	100		96.7	mg/L	96.7	95	105			
WG229049ICB	ICB	07/26/07 11:21				U	mg/L		-0.6	0.6			
WG229049LFB	LFB	07/26/07 11:34	II070719-3	67.97008		71.66	mg/L	105.4	85	115			
L63788-01AS	AS	07/26/07 12:28	II070719-3	67.97008	140	201.68	mg/L	90.7	85	115			
L63788-01ASD	ASD	07/26/07 12:31	II070719-3	67.97008	140	206.76	mg/L	98.2	85	115	2.49	20	
WG229054													
WG229054ICV	ICV	07/27/07 11:28	II070703-2	100		99.42	mg/L	99.4	95	105			
WG229054ICB	ICB	07/27/07 11:32				U	mg/L		-0.6	0.6			
WG229054LFB	LFB	07/27/07 11:45	II070719-3	67.97008		72.53	mg/L	106.7	85	115			
L63796-05AS	AS	07/27/07 11:52	II070719-3	67.97008	42.9	115.21	mg/L	106.4	85	115			
L63796-05ASD	ASD	07/27/07 11:55	II070719-3	67.97008	42.9	114.34	mg/L	105.1	85	115	0.76	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228647													
WG228647ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG228647ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228647ICV1	ICV	07/20/07 1:34	IC070710-1	20		20.3	mg/L	101.5	90	110			
WG228647ICB1	ICB	07/20/07 1:52				U	mg/L		-1.5	1.5			
WG228647LFB	LFB	07/20/07 2:10	IC070205-3	30		30.48	mg/L	101.6	90	110			
L63742-01DUP	DUP	07/20/07 2:47			U	U	mg/L				0	20	RA
L63742-02AS	AS	07/20/07 3:23	IC070205-3	30	U	30.1	mg/L	100.3	90	110			
WG228647ICV1	ICV	07/20/07 13:38	IC070710-1	20		20.29	mg/L	101.5	90	110			
WG228647ICB1	ICB	07/20/07 13:57				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63796**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228647													
WG228647ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG228647ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG228647ICV1	ICV	07/20/07 1:34	IC070710-1	3.984		4.19	mg/L	105.2	90	110			
WG228647ICB1	ICB	07/20/07 1:52				U	mg/L		-0.3	0.3			
WG228647LFB	LFB	07/20/07 2:10	IC070205-3	1.5		1.62	mg/L	108	90	110			
L63742-01DUP	DUP	07/20/07 2:47			U	U	mg/L				0	20	RA
L63742-02AS	AS	07/20/07 3:23	IC070205-3	1.5	U	1.6	mg/L	106.7	90	110			
WG228647ICV1	ICV	07/20/07 13:38	IC070710-1	3.984		4.16	mg/L	104.4	90	110			
WG228647ICB1	ICB	07/20/07 13:57				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229049													
WG229049ICV1	ICV	07/26/07 11:17	II070703-2	100		98.16	mg/L	98.2	95	105			
WG229049ICB	ICB	07/26/07 11:21				U	mg/L		-0.6	0.6			
WG229049LFB	LFB	07/26/07 11:34	II070719-3	54.96908		57.15	mg/L	104	85	115			
L63788-01AS	AS	07/26/07 12:28	II070719-3	54.96908	149	196.86	mg/L	87.1	85	115			
L63788-01ASD	ASD	07/26/07 12:31	II070719-3	54.96908	149	200.8	mg/L	94.2	85	115	1.98	20	
WG229054													
WG229054ICV	ICV	07/27/07 11:28	II070703-2	100		100.37	mg/L	100.4	95	105			
WG229054ICB	ICB	07/27/07 11:32				U	mg/L		-0.6	0.6			
WG229054LFB	LFB	07/27/07 11:45	II070719-3	54.96908		58.12	mg/L	105.7	85	115			
L63796-05AS	AS	07/27/07 11:52	II070719-3	54.96908	6.1	65.17	mg/L	107.5	85	115			
L63796-05ASD	ASD	07/27/07 11:55	II070719-3	54.96908	6.1	65.81	mg/L	108.6	85	115	0.98	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228235													
WG228235ICV	ICV	07/12/07 19:27	WI070609-1	2.416		2.352	mg/L	97.4	90	110			
WG228235ICB	ICB	07/12/07 19:28				U	mg/L		-0.06	0.06			
WG228235LFB1	LFB	07/12/07 19:32	WI070307-9	2		1.987	mg/L	99.4	90	110			
WG228235LFB2	LFB	07/12/07 20:10	WI070307-9	2		2.001	mg/L	100.1	90	110			
L63790-01DUP	DUP	07/12/07 20:39			40.6	41.05	mg/L				1.1	20	
L63789-01AS	AS	07/12/07 20:42	WI070307-9	80	40.9	124.98	mg/L	105.1	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63796**

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228235													
WG228235ICV	ICV	07/12/07 19:27	WI070609-1	.609		.62	mg/L	101.8	90	110			
WG228235ICB	ICB	07/12/07 19:28				U	mg/L		-0.03	0.03			
WG228235LFB1	LFB	07/12/07 19:32	WI070307-9	1		1.003	mg/L	100.3	90	110			
WG228235LFB2	LFB	07/12/07 20:10	WI070307-9	1		1.004	mg/L	100.4	90	110			
L63790-01DUP	DUP	07/12/07 20:19			1.45	1.446	mg/L				0.3	20	
L63789-01AS	AS	07/12/07 20:37	WI070307-9	20	1.4	22.14	mg/L	103.7	90	110			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229049													
WG229049ICV1	ICV	07/26/07 11:17	II070703-2	20		20.31	mg/L	101.6	95	105			
WG229049ICB	ICB	07/26/07 11:21				U	mg/L		-0.9	0.9			
WG229049LFB	LFB	07/26/07 11:34	II070719-3	99.76186		106.86	mg/L	107.1	85	115			
L63788-01AS	AS	07/26/07 12:28	II070719-3	99.76186	18.3	126.84	mg/L	108.8	85	115			
L63788-01ASD	ASD	07/26/07 12:31	II070719-3	99.76186	18.3	134.1	mg/L	116.1	85	115	5.56	20	MA

WG229054

WG229054ICV	ICV	07/27/07 11:28	II070703-2	20		20.47	mg/L	102.4	95	105			
WG229054ICB	ICB	07/27/07 11:32				U	mg/L		-0.9	0.9			
WG229054LFB	LFB	07/27/07 11:45	II070719-3	99.76186		107.07	mg/L	107.3	85	115			
L63796-05AS	AS	07/27/07 11:52	II070719-3	99.76186	3.1	113.9	mg/L	111.1	85	115			
L63796-05ASD	ASD	07/27/07 11:55	II070719-3	99.76186	3.1	113.7	mg/L	110.9	85	115	0.18	20	

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229149													
WG229149PBW	PBW	07/26/07 16:30				U	mg/L		-20	20			
WG229149LCSW	LCSW	07/26/07 16:31	PCN27689	260		262	mg/L	100.8	80	120			
L63897-01DUP	DUP	07/26/07 16:59			80400	80980	mg/L				0.7	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229049													
WG229049ICV1	ICV	07/26/07 11:17	II070703-2	100		100.52	mg/L	100.5	95	105			
WG229049ICB	ICB	07/26/07 11:21				U	mg/L		-0.9	0.9			
WG229049LFB	LFB	07/26/07 11:34	II070719-3	98.21624		103.87	mg/L	105.8	85	115			
L63788-01AS	AS	07/26/07 12:28	II070719-3	98.21624	71.7	172.58	mg/L	102.7	85	115			
L63788-01ASD	ASD	07/26/07 12:31	II070719-3	98.21624	71.7	177.31	mg/L	107.5	85	115	2.7	20	
WG229054													
WG229054ICV	ICV	07/27/07 11:28	II070703-2	100		101.82	mg/L	101.8	95	105			
WG229054ICB	ICB	07/27/07 11:32				U	mg/L		-0.9	0.9			
WG229054LFB	LFB	07/27/07 11:45	II070719-3	98.21624		105.2	mg/L	107.1	85	115			
L63796-05AS	AS	07/27/07 11:52	II070719-3	98.21624	30.8	137.47	mg/L	108.6	85	115			
L63796-05ASD	ASD	07/27/07 11:55	II070719-3	98.21624	30.8	136.67	mg/L	107.8	85	115	0.58	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63796**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228647													
WG228647ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG228647ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG228647ICV1	ICV	07/20/07 1:34	IC070710-1	50.15		51.16	mg/L	102	90	110			
WG228647ICB1	ICB	07/20/07 1:52				U	mg/L		-1.5	1.5			
WG228647LFB	LFB	07/20/07 2:10	IC070205-3	30		30.35	mg/L	101.2	90	110			
L63742-01DUP	DUP	07/20/07 2:47			U	U	mg/L				0	20	RA
L63742-02AS	AS	07/20/07 3:23	IC070205-3	30	U	29.99	mg/L	100	90	110			
WG228647ICV1	ICV	07/20/07 13:38	IC070710-1	50.15		51.13	mg/L	102	90	110			
WG228647ICB1	ICB	07/20/07 13:57				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita

ACZ Project ID: L63796

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63796-01	WG229049	Potassium, 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.
	WG228647	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229149	Residue, Filterable (TDS) @180C	160.1 / SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG228647	Sulfate	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).
	WG228358	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63796-02	WG228647	Sulfate	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).
L63796-03	WG229049	Potassium, 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.
	WG228647	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229149	Residue, Filterable (TDS) @180C	160.1 / SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG228647	Sulfate	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).
	WG228358	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63796-04	WG228647	Sulfate	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).
L63796-05	WG228647	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229149	Residue, Filterable (TDS) @180C	160.1 / SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG228647	Sulfate	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).
	WG228358	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63796-06	WG228647	Sulfate	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63796**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63796
Date Received: 7/12/2007
Received By:
Date Printed: 7/13/2007

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)
NA3931		2.2	18

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63796
 Date Received: 7/12/2007
 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
L63796-01	FWG-603428		Y									☐
L63796-02	UWG-603428									X		☐
L63796-03	FWG-603429		Y									☐
L63796-04	UWG-603429									X		☐
L63796-05	FWG-208825		Y									☐
L63796-06	UWG-208825									X		☐

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.

163496

CHAIN of CUSTODY

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

Report to:

Name: Kim Garcia
Company: Hydro Geo Chem Inc.
E-mail: King@hgcinc.com

Address: 51 W. Wetmore Rd.
Tucson AZ 85705-1678
Telephone: 520-293 1500 x123

Copy of Report to:

Name: Ned Hall / Billy Dorris / Jim Norris
Company: PDSI / HGC

E-mail: jinn@hgcinc.com / BillyDorris@FMI.COM
Telephone: 520-293 15000 x112 / 520-6488873

Invoice to:

Name: Ned Hall
Company: PDSI
E-mail: Ned Hall@FMI.COM

Address: 6200 W Duval mine Rd.
P.O. Box 527 Green Valley AZ 85622
Telephone: 520 648 8857

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 #: Sierra 8H0RT
Project/PO #: 070325
Reporting state for compliance testing: AZ
Sampler's Name: Johanna Santamarica / Mark Brownson
Are any samples NRC licensable material? NO

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca, Mg, Na, K	Alk, TDS, SO ₄ ⁻	Cl ⁻ , F ⁻ , NO ₂ , NO ₃	SO ₄ ⁻	pH	EC	Temp
FWG-603428	7-11-07	GW	2	X	X			7.62	447	26.8
UWG-603428	7/11/07	GW	1			X		7.62	447	26.8
FWG-603429	7/11/07	GW	2	X	X			7.50	649	24.0
UWG-603429	7/11/07	GW	1			X		7.50	649	24.0
FWG-208825	7/11/07	GW	2	X	X			7.59	389	27.1
UWG-208825	7/11/07	GW	1			X		7.59	389	27.1

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

REMARKS

FWG = Filtered Groundwater Sample
UWG = Unfiltered Groundwater Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	7/11/07 1415	JML	7.12.07 10:39

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

September 07, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L63829 – SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 13, 2007. This project was assigned to ACZ's project number, L63829. 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 L63829. 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.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: I-10

ACZ Sample ID: **L63829-01**

Date Sampled: 07/11/07 10:25

Date Received: 07/13/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	207			mg/L	0.2	1	07/29/07 4:35	msh
Magnesium, dissolved	M200.7 ICP	34.5			mg/L	0.2	1	07/29/07 4:35	msh
Potassium, dissolved	M200.7 ICP	7.3			mg/L	0.3	2	07/31/07 19:15	djt
Sodium, dissolved	M200.7 ICP	62.9			mg/L	0.3	2	07/29/07 4:35	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		103			mg/L	2	20	07/15/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Total Alkalinity		103			mg/L	2	20	07/15/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.5			%			08/01/07 0:00	calc
Sum of Anions		15.0			meq/L	0.1	0.5	08/01/07 0:00	calc
Sum of Cations		16.1			meq/L	0.1	0.5	08/01/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	44.1			mg/L	0.5	3	07/24/07 19:24	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	07/24/07 19:24	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.67			mg/L	0.02	0.1	08/01/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.67	H	*	mg/L	0.02	0.1	07/13/07 18:55	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/13/07 18:55	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1080			mg/L	10	20	07/18/07 12:57	lcp
Sulfate	300.0 - Ion Chromatography	550			mg/L	10	50	07/25/07 13:50	jag
TDS (calculated)	Calculation	975			mg/L	10	50	08/01/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.11						08/01/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: M-8

ACZ Sample ID: **L63829-02**

Date Sampled: 07/11/07 09:45

Date Received: 07/13/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	41.9			mg/L	0.2	1	07/29/07 4:39	msh
Magnesium, dissolved	M200.7 ICP	9.4			mg/L	0.2	1	07/29/07 4:39	msh
Potassium, dissolved	M200.7 ICP	4.6			mg/L	0.3	2	07/31/07 19:27	djt
Sodium, dissolved	M200.7 ICP	30.9			mg/L	0.3	2	07/29/07 4:39	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		167			mg/L	2	20	07/15/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Total Alkalinity		167			mg/L	2	20	07/15/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.6			%			08/01/07 0:00	calc
Sum of Anions		4.0			meq/L	0.1	0.5	08/01/07 0:00	calc
Sum of Cations		4.3			meq/L	0.1	0.5	08/01/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	9.5			mg/L	0.5	3	07/24/07 19:42	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	07/24/07 19:42	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.68			mg/L	0.02	0.1	08/01/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.68	H	*	mg/L	0.02	0.1	07/13/07 18:56	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/13/07 18:56	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	250			mg/L	10	20	07/18/07 12:59	lcp
Sulfate	300.0 - Ion Chromatography	16.5			mg/L	0.5	3	07/24/07 19:42	jag
TDS (calculated)	Calculation	216			mg/L	10	50	08/01/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.16						08/01/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-30

ACZ Sample ID: **L63829-03**

Date Sampled: 07/11/07 11:20

Date Received: 07/13/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	477			mg/L	0.4	2	07/29/07 4:42	msh
Magnesium, dissolved	M200.7 ICP	125			mg/L	0.4	2	07/29/07 4:42	msh
Potassium, dissolved	M200.7 ICP	11.8			mg/L	0.6	3	07/31/07 19:31	djt
Sodium, dissolved	M200.7 ICP	237			mg/L	0.6	3	07/29/07 4:42	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		120			mg/L	2	20	07/15/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Total Alkalinity		120			mg/L	2	20	07/15/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.4			%			09/07/07 0:00	calc
Sum of Anions		44.4			meq/L	0.1	0.5	09/07/07 0:00	calc
Sum of Cations		44.8			meq/L	0.1	0.5	09/07/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	136			mg/L	2	10	07/19/07 15:22	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/23/07 14:43	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.96			mg/L	0.02	0.1	07/20/07 21:02	lbn
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3180			mg/L	10	20	07/18/07 13:00	lcp
Sulfate	SM4500 SO ₄ -D	1820			mg/L	10	50	07/25/07 16:47	jlf
TDS (calculated)	Calculation	2880			mg/L	10	50	09/07/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.10						09/07/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: PZ-8

ACZ Sample ID: **L63829-04**

Date Sampled: 07/12/07 10:28

Date Received: 07/13/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	144			mg/L	0.2	1	07/29/07 4:46	msh
Magnesium, dissolved	M200.7 ICP	44.2			mg/L	0.2	1	07/29/07 4:46	msh
Potassium, dissolved	M200.7 ICP	7.6			mg/L	0.3	2	07/31/07 19:34	djt
Sodium, dissolved	M200.7 ICP	104			mg/L	0.3	2	07/29/07 4:46	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		176			mg/L	2	20	07/15/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/15/07 0:00	cas
Total Alkalinity		176			mg/L	2	20	07/15/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.0			%			09/07/07 0:00	calc
Sum of Anions		14.7			meq/L	0.1	0.5	09/07/07 0:00	calc
Sum of Cations		15.6			meq/L	0.1	0.5	09/07/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	59			mg/L	1	5	07/19/07 15:10	aml/jag
Fluoride	SM4500F-C	0.9		*	mg/L	0.1	0.5	07/23/07 14:46	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.14			mg/L	0.02	0.1	07/20/07 21:08	lbn
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1010			mg/L	10	20	07/18/07 13:01	lcp
Sulfate	SM4500 SO ₄ -D	450			mg/L	10	50	07/25/07 16:49	jlf
TDS (calculated)	Calculation	915			mg/L	10	50	09/07/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.10						09/07/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: CNTB061307-19

ACZ Sample ID: **L63829-05**

Date Sampled: 07/11/07 00:00

Date Received: 07/13/07

Sample Matrix: Ground Water

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							07/23/07 13:48	ama/jag

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Colorimetric w/ distillation		U	*	mg/L	0.005	0.03	07/24/07 15:42	mls/jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L63829**

Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228321													
WG228321PBW1	PBW	07/14/07 13:14				U	mg/L		-20	20			
WG228321LCSW2	LCSW	07/14/07 13:26	WC070705-3	820		815.7	mg/L	99.5	90	110			
WG228321PBW2	PBW	07/14/07 16:23				U	mg/L		-20	20			
WG228321LCSW5	LCSW	07/14/07 16:35	WC070705-3	820		815.7	mg/L	99.5	90	110			
WG228321PBW3	PBW	07/14/07 20:25				U	mg/L		-20	20			
WG228321LCSW8	LCSW	07/14/07 20:38	WC070705-3	820		822.9	mg/L	100.4	90	110			
WG228321PBW4	PBW	07/14/07 23:53				U	mg/L		-20	20			
WG228321LCSW11	LCSW	07/15/07 0:05	WC070705-3	820		820.5	mg/L	100.1	90	110			
L63840-06DUP	DUP	07/15/07 2:51			371	372.3	mg/L				0.3	20	
WG228321LCSW14	LCSW	07/15/07 3:03	WC070705-3	820		821.6	mg/L	100.2	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		2.01	mg/L	100.5	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.09	0.09			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	1		1.087	mg/L	108.7	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	1	U	1.129	mg/L	112.9	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	1	U	1.156	mg/L	115.6	85	115	2.36	20	MA

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.02		.02206	mg/L	110.3	90	110			
WG228518ICB	ICB	07/18/07 12:42				U	mg/L		-0.0012	0.0012			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.01		.01063	mg/L	106.3	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.02	U	.02626	mg/L	131.3	70	130			M1
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.02	U	.02672	mg/L	133.6	70	130	1.74	20	M1

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.05		.05299	mg/L	106	90	110			
WG228518ICB	ICB	07/18/07 12:42				U	mg/L		-0.0015	0.0015			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.05		.04993	mg/L	99.9	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.1	.003	.101	mg/L	98	70	130			
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.1	.003	.1032	mg/L	100.2	70	130	2.15	20	
WG228665													
WG228665ICV	ICV	07/20/07 5:30	MS070607-2	.05		.05104	mg/L	102.1	90	110			
WG228665ICB	ICB	07/20/07 5:36				.00103	mg/L		-0.0015	0.0015			
WG228665LFB	LFB	07/20/07 5:42	MS070712-3	.05		.04997	mg/L	99.9	85	115			
L63815-05AS	AS	07/20/07 7:18	MS070712-3	.05	.0032	.05392	mg/L	101.4	70	130			
L63815-05ASD	ASD	07/20/07 7:24	MS070712-3	.05	.0032	.05398	mg/L	101.6	70	130	0.11	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		2.075	mg/L	103.8	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.009	0.009			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.531	mg/L	106.2	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	.292	.8317	mg/L	107.9	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	.292	.8391	mg/L	109.4	85	115	0.89	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.05		.04895	mg/L	97.9	90	110			
WG228518ICB	ICB	07/18/07 12:42				U	mg/L		-0.0003	0.0003			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.05		.04726	mg/L	94.5	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.1	U	.09352	mg/L	93.5	70	130			
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.1	U	.09424	mg/L	94.2	70	130	0.77	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.05		.05268	mg/L	105.4	90	110			
WG228518ICB	ICB	07/18/07 12:42				U	mg/L		-0.0003	0.0003			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.05		.04962	mg/L	99.2	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.1	U	.0954	mg/L	95.4	70	130			
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.1	U	.09696	mg/L	97	70	130	1.62	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	100		97.76	mg/L	97.8	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.6	0.6			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	67.97008		72.6	mg/L	106.8	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	67.97008	26.1	98.99	mg/L	107.2	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	67.97008	26.1	100.36	mg/L	109.3	85	115	1.37	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Chloride 325.2 / SM4500CI-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228634													
WG228634ICV	ICV	07/19/07 9:29	WI070314-1	55		55.1	mg/L	100.2	90	110			
WG228634ICB	ICB	07/19/07 9:30				1.2	mg/L		-3	3			
WG228684													
WG228684ICV	ICV	07/19/07 14:26	WI070314-1	55		57.5	mg/L	104.5	90	110			
WG228684ICB	ICB	07/19/07 14:27				1.1	mg/L		-3	3			
WG228684LFB1	LFB	07/19/07 14:28	WI070712-1	30		28.8	mg/L	96	90	110			
WG228684LFB2	LFB	07/19/07 14:56	WI070712-1	30		29.5	mg/L	98.3	90	110			
L63828-05AS	AS	07/19/07 14:58	WI070712-1	30	39	70.5	mg/L	105	90	110			
L63828-06DUP	DUP	07/19/07 15:00			38	37.4	mg/L				1.6	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228965													
WG228965ICV	ICV	07/24/07 16:41	IC070710-1	20		17.98	mg/L	89.9	90	110			
WG228965ICB	ICB	07/24/07 16:59				U	mg/L		-1.5	1.5			
WG228965LFB	LFB	07/24/07 17:17	IC070205-3	30		28.14	mg/L	93.8	90	110			
L63702-01DUP	DUP	07/24/07 17:53			470	470	mg/L				0	20	
L63702-02AS	AS	07/24/07 18:29	IC070205-3	600	460	1004	mg/L	90.7	90	110			
WG228965ICV1	ICV	07/25/07 12:37	IC070710-1	20		20.1	mg/L	100.5	90	110			
WG228965ICB1	ICB	07/25/07 12:55				U	mg/L		-1.5	1.5			

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.928	mg/L	96.4	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.03	0.03			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.513	mg/L	102.6	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.525	mg/L	105	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.535	mg/L	107	85	115	1.89	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.894	mg/L	94.7	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.03	0.03			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.502	mg/L	100.4	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.516	mg/L	103.2	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.525	mg/L	105	85	115	1.73	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228321													
WG228321LCSW1	LCSW	07/14/07 13:16	PCN27302	1408.8		1424	µmhos/cm	101.1	90	110			
WG228321LCSW4	LCSW	07/14/07 16:24	PCN27302	1408.8		1446	µmhos/cm	102.6	90	110			
WG228321LCSW7	LCSW	07/14/07 20:26	PCN27302	1408.8		1442	µmhos/cm	102.4	90	110			
WG228321LCSW10	LCSW	07/14/07 23:54	PCN27302	1408.8		1440	µmhos/cm	102.2	90	110			
L63840-06DUP	DUP	07/15/07 2:51			5370	5370	µmhos/cm				0	20	
WG228321LCSW13	LCSW	07/15/07 2:52	PCN27302	1408.8		1427	µmhos/cm	101.3	90	110			

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.902	mg/L	95.1	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.03	0.03			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.51	mg/L	102	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.52	mg/L	104	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.527	mg/L	105.4	85	115	1.34	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228939													
WG228939ICV	ICV	07/24/07 14:40	WI070714-6	.3		.3092	mg/L	103.1	90	110			
WG228939ICB	ICB	07/24/07 14:41				U	mg/L		-0.015	0.015			
WG228968													
WG228968ICV	ICV	07/24/07 15:26	WI070714-6	.3		.3116	mg/L	103.9	90	110			
WG228968ICB	ICB	07/24/07 15:27				U	mg/L		-0.015	0.015			
WG228843LRB	LRB	07/24/07 15:29				U	mg/L		-0.015	0.015			
WG228843LFB	LFB	07/24/07 15:30	WI070714-2	.2		.2183	mg/L	109.2	90	110			
L63821-02DUP	DUP	07/24/07 15:32			.03	.0295	mg/L				1.7	20	RA
L63821-03LFM	LFM	07/24/07 15:33	WI070714-2	.2	U	.229	mg/L	114.5	90	110			M1
L63840-01DUP	DUP	07/24/07 15:43			U	U	mg/L				0	20	RA
L63840-02LFM	LFM	07/24/07 15:45	WI070714-2	.2	U	.2218	mg/L	110.9	90	110			M1

Phelps Dodge Sierrita

ACZ Project ID: **L63829**

Project ID: OJ03DL

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228965													
WG228965ICV	ICV	07/24/07 16:41	IC070710-1	3.984		3.67	mg/L	92.1	90	110			
WG228965ICB	ICB	07/24/07 16:59				U	mg/L		-0.3	0.3			
WG228965LFB	LFB	07/24/07 17:17	IC070205-3	1.5		1.43	mg/L	95.3	90	110			
L63702-01DUP	DUP	07/24/07 17:53			2	2.4	mg/L				18.2	20	RA
L63702-02AS	AS	07/24/07 18:29	IC070205-3	30	U	29.3	mg/L	97.7	90	110			
WG228965ICV1	ICV	07/25/07 12:37	IC070710-1	3.984		4.17	mg/L	104.7	90	110			
WG228965ICB1	ICB	07/25/07 12:55				U	mg/L		-0.3	0.3			

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228795													
WG228795ICV	ICV	07/23/07 13:29	WC070717-3	2		2.1	mg/L	105	90	110			
WG228795ICB	ICB	07/23/07 13:36				U	mg/L		-0.3	0.3			
WG228795LFB1	LFB	07/23/07 13:42	WC070504-3	5		5.14	mg/L	102.8	90	110			
L63666-01AS	AS	07/23/07 13:49	WC070504-3	20	.9	.98	mg/L	.4	90	110			M2
L63666-01DUP	DUP	07/23/07 13:56			.9	.92	mg/L				2.2	20	RA
L63829-04AS	AS	07/23/07 14:49	WC070504-3	5	.9	5.79	mg/L	97.8	90	110			
L63829-04DUP	DUP	07/23/07 14:56			.9	.88	mg/L				2.2	20	RA
WG228795LFB2	LFB	07/23/07 15:34	WC070504-3	5		5.05	mg/L	101	90	110			

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.959	mg/L	98	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.06	0.06			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	1		1.048	mg/L	104.8	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	1	U	1.07	mg/L	107	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	1	U	1.086	mg/L	108.6	85	115	1.48	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.05		.05286	mg/L	105.7	90	110			
WG228518ICB	ICB	07/18/07 12:42				U	mg/L		-0.0003	0.0003			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.05		.04926	mg/L	98.5	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.1	.0035	.10814	mg/L	104.6	70	130			
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.1	.0035	.11084	mg/L	107.3	70	130	2.47	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	100		98.73	mg/L	98.7	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.6	0.6			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	54.96908		58.1	mg/L	105.7	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	54.96908	7.4	67.03	mg/L	108.5	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	54.96908	7.4	67.96	mg/L	110.2	85	115	1.38	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.9092	mg/L	95.5	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.015	0.015			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.5351	mg/L	107	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.5502	mg/L	110	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.5558	mg/L	111.2	85	115	1.01	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228466													
WG228466ICV	ICV	07/20/07 11:59	II070705-3	.00498		.00515	mg/L	103.4	95	105			
WG228466ICB	ICB	07/20/07 12:01				U	mg/L		-0.0002	0.0002			
WG228466LRB	LRB	07/20/07 12:03				U	mg/L		-0.00044	0.00044			
L63823-02LFM	LFM	07/20/07 12:38	II070705-5	.002	U	.00217	mg/L	108.5	85	115			
L63823-02LFMD	LFMD	07/20/07 12:40	II070705-5	.002	U	.00221	mg/L	110.5	85	115	1.83	20	
WG228466LFB	LFB	07/20/07 13:16	II070705-5	.002		.00223	mg/L	111.5	85	115			

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.964	mg/L	98.2	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.03	0.03			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.523	mg/L	104.6	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.525	mg/L	105	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.533	mg/L	106.6	85	115	1.51	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.901	mg/L	95.1	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.03	0.03			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.508	mg/L	101.6	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.523	mg/L	104.6	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.522	mg/L	104.4	85	115	0.19	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228787													
WG228787ICV	ICV	07/20/07 17:12	WI070609-1	2.416		2.396	mg/L	99.2	90	110			
WG228787ICB	ICB	07/20/07 17:13				U	mg/L		-0.06	0.06			
WG228790													
WG228790ICV	ICV	07/20/07 20:20	WI070609-1	2.416		2.455	mg/L	101.6	90	110			
WG228790ICB	ICB	07/20/07 20:21				U	mg/L		-0.06	0.06			
WG228790LFB1	LFB	07/20/07 20:23	WI070307-9	2		2.067	mg/L	103.4	90	110			
WG228790LFB2	LFB	07/20/07 20:59	WI070307-9	2		1.962	mg/L	98.1	90	110			
L63825-07AS	AS	07/20/07 21:01	WI070307-9	2	U	2.069	mg/L	103.5	90	110			
L63829-03DUP	DUP	07/20/07 21:04			1.96	1.975	mg/L				0.8	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228315													
WG228315ICV	ICV	07/13/07 18:00	WI070609-1	2.416		2.377	mg/L	98.4	90	110			
WG228315ICB	ICB	07/13/07 18:01				U	mg/L		-0.06	0.06			
WG228315LFB1	LFB	07/13/07 18:05	WI070307-9	2		2.071	mg/L	103.6	90	110			
WG228315LFB2	LFB	07/13/07 18:43	WI070307-9	2		2.034	mg/L	101.7	90	110			
L63827-03AS	AS	07/13/07 18:45	WI070307-9	2	.06	2.085	mg/L	101.3	90	110			
L63827-04DUP	DUP	07/13/07 18:51			.07	.077	mg/L				9.5	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228315													
WG228315ICV	ICV	07/13/07 18:00	WI070609-1	.609		.619	mg/L	101.6	90	110			
WG228315ICB	ICB	07/13/07 18:01				U	mg/L		-0.03	0.03			
WG228315LFB1	LFB	07/13/07 18:05	WI070307-9	1		1.015	mg/L	101.5	90	110			
WG228315LFB2	LFB	07/13/07 18:43	WI070307-9	1		1.001	mg/L	100.1	90	110			
L63827-03AS	AS	07/13/07 18:45	WI070307-9	1	U	.983	mg/L	98.3	90	110			
L63827-04DUP	DUP	07/13/07 18:51			U	U	mg/L				0	20	RA

pH (lab) M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228321													
WG228321LCSW3	LCSW	07/14/07 13:29	PCN26677	6		6.04	units	100.7	90	110			
WG228321LCSW6	LCSW	07/14/07 16:37	PCN26677	6		6.04	units	100.7	90	110			
WG228321LCSW9	LCSW	07/14/07 20:40	PCN26677	6		6.03	units	100.5	90	110			
WG228321LCSW12	LCSW	07/15/07 0:08	PCN26677	6		6.02	units	100.3	90	110			
L63840-06DUP	DUP	07/15/07 2:51			8	7.92	units				1	20	
WG228321LCSW15	LCSW	07/15/07 3:06	PCN26677	6		6.02	units	100.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229259													
WG229259ICV	ICV	07/31/07 18:01	II070725-7	20		20.04	mg/L	100.2	95	105			
WG229259ICB	ICB	07/31/07 18:05				U	mg/L		-0.9	0.9			
WG229259LFB	LFB	07/31/07 18:18	II070725-3	99.76186		103.42	mg/L	103.7	85	115			
L63829-01AS	AS	07/31/07 19:19	II070725-3	99.76186	7.3	116.93	mg/L	109.9	85	115			
L63829-01ASD	ASD	07/31/07 19:23	II070725-3	99.76186	7.3	114.52	mg/L	107.5	85	115	2.08	20	

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228575													
WG228575PBW	PBW	07/18/07 12:50				U	mg/L		-20	20			
WG228575LCSW	LCSW	07/18/07 12:51	PCN27100	261		294	mg/L	112.6	80	120			
L63840-01DUP	DUP	07/18/07 13:05			2790	2860	mg/L				2.5	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.05		.05324	mg/L	106.5	90	110			
WG228518ICB	ICB	07/18/07 12:42				.0001	mg/L		-0.0003	0.0003			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.05		.05128	mg/L	102.6	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.1	.0006	.1107	mg/L	110.1	70	130			
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.1	.0006	.1093	mg/L	108.7	70	130	1.27	20	
WG228665													
WG228665ICV	ICV	07/20/07 5:30	MS070607-2	.05		.04989	mg/L	99.8	90	110			
WG228665ICB	ICB	07/20/07 5:36				.00014	mg/L		-0.0003	0.0003			
WG228665LFB	LFB	07/20/07 5:42	MS070712-3	.05		.05045	mg/L	100.9	85	115			
L63815-05AS	AS	07/20/07 7:18	MS070712-3	.05	.0006	.05565	mg/L	110.1	70	130			
L63815-05ASD	ASD	07/20/07 7:24	MS070712-3	.05	.0006	.05468	mg/L	108.2	70	130	1.76	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	100		100.58	mg/L	100.6	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.9	0.9			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	98.21624		105.4	mg/L	107.3	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	98.21624	1.8	110.71	mg/L	110.9	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	98.21624	1.8	111.81	mg/L	112	85	115	0.99	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63829**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228965													
WG228965ICV	ICV	07/24/07 16:41	IC070710-1	50.15		46.96	mg/L	93.6	90	110			
WG228965ICB	ICB	07/24/07 16:59				U	mg/L		-1.5	1.5			
WG228965LFB	LFB	07/24/07 17:17	IC070205-3	30		27.66	mg/L	92.2	90	110			
L63702-01DUP	DUP	07/24/07 17:53			490	493	mg/L				0.6	20	
L63702-02AS	AS	07/24/07 18:29	IC070205-3	600	740	1277	mg/L	89.5	90	110			
WG228965ICV1	ICV	07/25/07 12:37	IC070710-1	50.15		50.28	mg/L	100.3	90	110			
WG228965ICB1	ICB	07/25/07 12:55				U	mg/L		-1.5	1.5			

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229053													
WG229053PBW	PBW	07/25/07 16:00				U	mg/L		-30	30			
WG229053LCSW	LCSW	07/25/07 16:02	WC070705-2	100		100	mg/L	100	80	120			
L63833-04DUP	DUP	07/25/07 17:00			190	187	mg/L				1.6	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228518													
WG228518ICV	ICV	07/18/07 12:36	MS070607-2	.05		.05436	mg/L	108.7	90	110			
WG228518ICB	ICB	07/18/07 12:42				U	mg/L		-0.0003	0.0003			
WG228518LFB	LFB	07/18/07 12:48	MS070712-3	.05		.04989	mg/L	99.8	85	115			
L63829-03AS	AS	07/18/07 14:21	MS070712-3	.1	U	.10752	mg/L	107.5	70	130			
L63829-03ASD	ASD	07/18/07 14:26	MS070712-3	.1	U	.10946	mg/L	109.5	70	130	1.79	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	2		1.918	mg/L	95.9	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.03	0.03			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	.5		.533	mg/L	106.6	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	.5	U	.549	mg/L	109.8	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	.5	U	.555	mg/L	111	85	115	1.09	20	

Phelps Dodge SierritaACZ Project ID: **L63829**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63829-01	WG228965	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228315	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L63829-02	WG228965	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228315	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L63829-03	WG229144	Aluminum, 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.
	WG228518	Antimony, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG228968	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228795	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).	
L63829-04	WG229144	Aluminum, 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.
	WG228518	Antimony, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG228968	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228795	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).

Phelps Dodge SierritaACZ Project ID: **L63829**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63829-05	WG228968	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L63829**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63829
Date Received: 7/13/2007
Received By:
Date Printed: 7/13/2007

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)
1994		4.7	15

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

Notes

Phelps Dodge Sierrita
 OJ03DL

ACZ Project ID: L63829
 Date Received: 7/13/2007
 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
L63829-01	I-10		Y		Y							☐
L63829-02	M-8		Y		Y							☐
L63829-03	MH-30		Y		Y							☐
L63829-04	PZ-8		Y		Y							☐
L63829-05	CNTB061307-19									X		☐
L63829-06	VLPTB061307-02									X		☐

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: _____

August 01, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63834

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 13, 2007. This project has been assigned to ACZ's project number, L63834. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63834. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 01, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UFG-634036-071207

ACZ Sample ID: **L63834-01**

Date Sampled: 07/12/07 09:55

Date Received: 07/13/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	495			mS/cm			07/12/07 9:55	ma
pH (Field)	Field Measurement	7.5			units			07/12/07 9:55	ma
Temperature (Field)	Field Measurement	30.4			C			07/12/07 9:55	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	68.1			mg/L	0.5	3	07/24/07 20:00	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-634036-071207

ACZ Sample ID: **L63834-02**

Date Sampled: 07/12/07 09:55

Date Received: 07/13/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	495			mS/cm			07/12/07 9:55	ma
pH (Field)	Field Measurement	7.5			units			07/12/07 9:55	ma
Temperature (Field)	Field Measurement	30.4			C			07/12/07 9:55	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	64.7		*	mg/L	0.2	1	07/29/07 4:50	msh
Magnesium, dissolved	M200.7 ICP	11.1		*	mg/L	0.2	1	07/29/07 4:50	msh
Potassium, dissolved	M200.7 ICP	1.6	B		mg/L	0.3	2	07/31/07 19:38	djt
Sodium, dissolved	M200.7 ICP	26.6		*	mg/L	0.3	2	07/29/07 4:50	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		167			mg/L	2	20	07/16/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Total Alkalinity		167		*	mg/L	2	20	07/16/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.9			%			08/01/07 0:00	calc
Sum of Anions		5.0			meq/L	0.1	0.5	08/01/07 0:00	calc
Sum of Cations		5.3			meq/L	0.1	0.5	08/01/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.1			mg/L	0.5	3	07/24/07 20:54	jag
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	07/24/07 20:54	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.27			mg/L	0.02	0.1	08/01/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.27		*	mg/L	0.02	0.1	07/13/07 18:58	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/13/07 18:58	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	330			mg/L	10	20	07/19/07 15:03	lcp
Sulfate	300.0 - Ion Chromatography	68.2			mg/L	0.5	3	07/24/07 20:54	jag
TDS (calculated)	Calculation	282			mg/L	10	50	08/01/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.17						08/01/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UFG-GW-599350-071207

ACZ Sample ID: **L63834-03**

Date Sampled: 07/12/07 11:35

Date Received: 07/13/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	405			mS/cm			07/12/07 11:35	ma
pH (Field)	Field Measurement	7.5			units			07/12/07 11:35	ma
Temperature (Field)	Field Measurement	29.5			C			07/12/07 11:35	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	29.4			mg/L	0.5	3	07/24/07 21:12	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-GW-599350-071207

ACZ Sample ID: **L63834-04**

Date Sampled: 07/12/07 11:35

Date Received: 07/13/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	405			mS/cm			07/12/07 11:35	ma
pH (Field)	Field Measurement	7.5			units			07/12/07 11:35	ma
Temperature (Field)	Field Measurement	29.5			C			07/12/07 11:35	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	56.7		*	mg/L	0.2	1	07/29/07 4:54	msh
Magnesium, dissolved	M200.7 ICP	7.9		*	mg/L	0.2	1	07/29/07 4:54	msh
Potassium, dissolved	M200.7 ICP	2.2			mg/L	0.3	2	07/31/07 19:49	djt
Sodium, dissolved	M200.7 ICP	19.2		*	mg/L	0.3	2	07/29/07 4:54	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		161			mg/L	2	20	07/16/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/16/07 0:00	lcp/jlf
Total Alkalinity		161		*	mg/L	2	20	07/16/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.6			%			08/01/07 0:00	calc
Sum of Anions		4.0			meq/L	0.1	0.5	08/01/07 0:00	calc
Sum of Cations		4.3			meq/L	0.1	0.5	08/01/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	5.9			mg/L	0.5	3	07/24/07 21:31	jag
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	07/24/07 21:31	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.59			mg/L	0.02	0.1	08/01/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.59		*	mg/L	0.02	0.1	07/13/07 18:59	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	07/13/07 18:59	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	260			mg/L	10	20	07/19/07 15:05	lcp
Sulfate	300.0 - Ion Chromatography	29.6			mg/L	0.5	3	07/24/07 21:31	jag
TDS (calculated)	Calculation	221			mg/L	10	50	08/01/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.18						08/01/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63834**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228358													
WG228358PBW1	PBW	07/16/07 10:08				U	mg/L		-20	20			
WG228358LCSW2	LCSW	07/16/07 10:20	WC070705-3	820		814.7	mg/L	99.4	90	110			
WG228358PBW2	PBW	07/16/07 13:43				U	mg/L		-20	20			
WG228358LCSW5	LCSW	07/16/07 13:56	WC070705-3	820		817.8	mg/L	99.7	90	110			
WG228358PBW3	PBW	07/16/07 16:59				U	mg/L		-20	20			
WG228358LCSW8	LCSW	07/16/07 17:11	WC070705-3	820		819.5	mg/L	99.9	90	110			
WG228358PBW4	PBW	07/16/07 19:45				U	mg/L		-20	20			
WG228358LCSW11	LCSW	07/16/07 19:57	WC070705-3	820		824.6	mg/L	100.6	90	110			
L63845-02DUP	DUP	07/16/07 21:28			U	U	mg/L				0	20	RA
WG228358LCSW14	LCSW	07/16/07 22:20	WC070705-3	820		825.7	mg/L	100.7	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	100		97.76	mg/L	97.8	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.6	0.6			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	67.97008		72.6	mg/L	106.8	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	67.97008	26.1	98.99	mg/L	107.2	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	67.97008	26.1	100.36	mg/L	109.3	85	115	1.37	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228965													
WG228965ICV	ICV	07/24/07 16:41	IC070710-1	20		17.98	mg/L	89.9	90	110			
WG228965ICB	ICB	07/24/07 16:59				U	mg/L		-1.5	1.5			
WG228965LFB	LFB	07/24/07 17:17	IC070205-3	30		28.14	mg/L	93.8	90	110			
L63702-01DUP	DUP	07/24/07 17:53			470	470	mg/L				0	20	
L63702-02AS	AS	07/24/07 18:29	IC070205-3	600	460	1004	mg/L	90.7	90	110			
WG228965ICV1	ICV	07/25/07 12:37	IC070710-1	20		20.1	mg/L	100.5	90	110			
WG228965ICB1	ICB	07/25/07 12:55				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63834**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228965													
WG228965ICV	ICV	07/24/07 16:41	IC070710-1	3.984		3.67	mg/L	92.1	90	110			
WG228965ICB	ICB	07/24/07 16:59				U	mg/L		-0.3	0.3			
WG228965LFB	LFB	07/24/07 17:17	IC070205-3	1.5		1.43	mg/L	95.3	90	110			
L63702-01DUP	DUP	07/24/07 17:53			2	2.4	mg/L				18.2	20	RA
L63702-02AS	AS	07/24/07 18:29	IC070205-3	30	U	29.3	mg/L	97.7	90	110			
WG228965ICV1	ICV	07/25/07 12:37	IC070710-1	3.984		4.17	mg/L	104.7	90	110			
WG228965ICB1	ICB	07/25/07 12:55				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	100		98.73	mg/L	98.7	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.6	0.6			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	54.96908		58.1	mg/L	105.7	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	54.96908	7.4	67.03	mg/L	108.5	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	54.96908	7.4	67.96	mg/L	110.2	85	115	1.38	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228315													
WG228315ICV	ICV	07/13/07 18:00	WI070609-1	2.416		2.377	mg/L	98.4	90	110			
WG228315ICB	ICB	07/13/07 18:01				U	mg/L		-0.06	0.06			
WG228315LFB1	LFB	07/13/07 18:05	WI070307-9	2		2.071	mg/L	103.6	90	110			
WG228315LFB2	LFB	07/13/07 18:43	WI070307-9	2		2.034	mg/L	101.7	90	110			
L63827-03AS	AS	07/13/07 18:45	WI070307-9	2	.06	2.085	mg/L	101.3	90	110			
L63827-04DUP	DUP	07/13/07 18:51			.07	.077	mg/L				9.5	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228315													
WG228315ICV	ICV	07/13/07 18:00	WI070609-1	.609		.619	mg/L	101.6	90	110			
WG228315ICB	ICB	07/13/07 18:01				U	mg/L		-0.03	0.03			
WG228315LFB1	LFB	07/13/07 18:05	WI070307-9	1		1.015	mg/L	101.5	90	110			
WG228315LFB2	LFB	07/13/07 18:43	WI070307-9	1		1.001	mg/L	100.1	90	110			
L63827-03AS	AS	07/13/07 18:45	WI070307-9	1	U	.983	mg/L	98.3	90	110			
L63827-04DUP	DUP	07/13/07 18:51			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63834**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229259													
WG229259ICV	ICV	07/31/07 18:01	II070725-7	20		20.04	mg/L	100.2	95	105			
WG229259ICB	ICB	07/31/07 18:05				U	mg/L		-0.9	0.9			
WG229259LFB	LFB	07/31/07 18:18	II070725-3	99.76186		103.42	mg/L	103.7	85	115			
L63829-01AS	AS	07/31/07 19:19	II070725-3	99.76186	7.3	116.93	mg/L	109.9	85	115			
L63829-01ASD	ASD	07/31/07 19:23	II070725-3	99.76186	7.3	114.52	mg/L	107.5	85	115	2.08	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228683													
WG228683PBW	PBW	07/19/07 15:00				U	mg/L		-20	20			
WG228683LCSW	LCSW	07/19/07 15:01	PCN27100	261		292	mg/L	111.9	80	120			
L63845-01DUP	DUP	07/19/07 15:15			5370	5372	mg/L				0	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229144													
WG229144ICV	ICV	07/29/07 2:54	II070725-7	100		100.58	mg/L	100.6	95	105			
WG229144ICB	ICB	07/29/07 2:58				U	mg/L		-0.9	0.9			
WG229144LFB	LFB	07/29/07 3:13	II070725-3	98.21624		105.4	mg/L	107.3	85	115			
L63827-05AS	AS	07/29/07 4:15	II070725-3	98.21624	1.8	110.71	mg/L	110.9	85	115			
L63827-05ASD	ASD	07/29/07 4:19	II070725-3	98.21624	1.8	111.81	mg/L	112	85	115	0.99	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228965													
WG228965ICV	ICV	07/24/07 16:41	IC070710-1	50.15		46.96	mg/L	93.6	90	110			
WG228965ICB	ICB	07/24/07 16:59				U	mg/L		-1.5	1.5			
WG228965LFB	LFB	07/24/07 17:17	IC070205-3	30		27.66	mg/L	92.2	90	110			
L63702-01DUP	DUP	07/24/07 17:53			490	493	mg/L				0.6	20	
L63702-02AS	AS	07/24/07 18:29	IC070205-3	600	740	1277	mg/L	89.5	90	110			
WG228965ICV1	ICV	07/25/07 12:37	IC070710-1	50.15		50.28	mg/L	100.3	90	110			
WG228965ICB1	ICB	07/25/07 12:55				U	mg/L		-1.5	1.5			

Phelps Dodge SierritaACZ Project ID: **L63834**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63834-02	WG229144	Calcium, dissolved	M200.7 ICP	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Magnesium, dissolved	M200.7 ICP	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Sodium, dissolved	M200.7 ICP	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG228965	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228315	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228358	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).
L63834-04	WG229144	Calcium, dissolved	M200.7 ICP	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Magnesium, dissolved	M200.7 ICP	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Sodium, dissolved	M200.7 ICP	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG228965	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228315	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228358	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63834**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63834
Date Received: 7/13/2007
Received By:
Date Printed: 7/13/2007

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)
NA3956	3.4	15

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63834
Date Received: 7/13/2007
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
L63834-01	UFG-634036-071207									X		☐
L63834-02	FGW-634036-071207		Y									☐
L63834-03	UFG-GW-599350-071207									X		☐
L63834-04	FGW-GW-599350-071207		Y									☐

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

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

Report to:

Name: Kim Garcia	Address: 51w. wetmore Rd.
Company: Hydro Geo Chem Inc.	Tucson AZ 85705-1678
E-mail: kimg@hgcinc.com	Telephone: 520-2931500 x123

Copy of Report to:

Name: Ned Hall / Billy Norris / Jim Norris	E-mail: jimn@hginc.com
Company: PDSE / HGC	Telephone: 520-293 1500 x 112 / 520 648 8873

Invoice to:

Name: Ned Hall	Address: 6200 W. Duval Mine Rd.
Company: PDSTI	P.O. Box 527 Green Valley AZ 85622
E-mail: Ned.Hall@FMI.Com	Telephone: 520 648 8857

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)

[illegible]

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

FGW = Filtered Ground Water Sample
 UFG = Unfiltered Ground Water Sample

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

Please refer to AGZ's terms & conditions located on the reverse side of this document.			
RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>[Signature]</i>	7/12/07: 1435	<i>[Signature]</i>	7-13-07 10:50

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

August 17, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L63915 - SHORT

Bill Dorris:

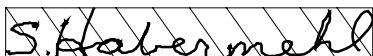
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 18, 2007. This project was assigned to ACZ's project number, L63915. Please reference this number in all future inquiries.

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 11.0. The enclosed results relate only to the samples received under L63915. 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.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-1

ACZ Sample ID: **L63915-01**

Date Sampled: 07/16/07 11:45

Date Received: 07/18/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	185			mg/L	0.2	1	07/31/07 18:53	msh
Magnesium, dissolved	M200.7 ICP	43.4			mg/L	0.2	1	07/31/07 18:53	msh
Potassium, dissolved	M200.7 ICP	9.3		*	mg/L	0.3	2	07/31/07 18:53	msh
Sodium, dissolved	M200.7 ICP	59.3			mg/L	0.3	2	07/31/07 18:53	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		134			mg/L	2	20	07/19/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Total Alkalinity		134			mg/L	2	20	07/19/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.3			%			08/17/07 0:00	calc
Sum of Anions		15.0			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		15.7			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	58		*	mg/L	1	5	07/23/07 13:41	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/24/07 13:45	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.74			mg/L	0.02	0.1	07/21/07 15:50	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1130			mg/L	10	20	07/23/07 13:33	aeh
Sulfate	SM4500 SO ₄ -D	510			mg/L	10	50	07/26/07 15:49	kmc
TDS (calculated)	Calculation	946			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.19						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-2

ACZ Sample ID: **L63915-02**

Date Sampled: 07/16/07 12:00

Date Received: 07/18/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	51.0			mg/L	0.2	1	07/31/07 18:57	msh
Magnesium, dissolved	M200.7 ICP	11.2			mg/L	0.2	1	07/31/07 18:57	msh
Potassium, dissolved	M200.7 ICP	5.4			mg/L	0.3	2	07/31/07 18:57	msh
Sodium, dissolved	M200.7 ICP	39.1			mg/L	0.3	2	07/31/07 18:57	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		153			mg/L	2	20	07/19/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Total Alkalinity		153			mg/L	2	20	07/19/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			08/17/07 0:00	calc
Sum of Anions		5.3			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		5.3			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	14		*	mg/L	1	5	07/23/07 13:42	aml/jag
Fluoride	SM4500F-C	0.4	B	*	mg/L	0.1	0.5	07/24/07 13:59	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.28			mg/L	0.02	0.1	07/21/07 15:51	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	360			mg/L	10	20	07/23/07 13:38	aeh
Sulfate	SM4500 SO ₄ -D	90		*	mg/L	10	50	07/26/07 15:52	kmc
TDS (calculated)	Calculation	303			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.19						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-3A

ACZ Sample ID: **L63915-03**

Date Sampled: 07/16/07 12:20

Date Received: 07/18/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	451			mg/L	0.4	2	07/31/07 19:10	msh
Magnesium, dissolved	M200.7 ICP	103			mg/L	0.4	2	07/31/07 19:10	msh
Potassium, dissolved	M200.7 ICP	14.0			mg/L	0.6	3	07/31/07 19:10	msh
Sodium, dissolved	M200.7 ICP	121			mg/L	0.6	3	07/31/07 19:10	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		117			mg/L	2	20	07/19/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Total Alkalinity		117			mg/L	2	20	07/19/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.9			%			08/17/07 0:00	calc
Sum of Anions		37.4			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		36.7			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	125		*	mg/L	2	10	07/23/07 13:54	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/24/07 14:09	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.25			mg/L	0.02	0.1	07/21/07 15:53	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2670			mg/L	10	20	07/23/07 13:39	aeh
Sulfate	SM4500 SO ₄ -D	1500		*	mg/L	10	50	07/26/07 15:54	kmc
TDS (calculated)	Calculation	2380			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-10

ACZ Sample ID: **L63915-04**

Date Sampled: 07/16/07 12:45

Date Received: 07/18/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	477			mg/L	0.4	2	08/14/07 15:42	djt
Magnesium, dissolved	M200.7 ICP	81.1			mg/L	0.4	2	08/14/07 15:42	djt
Potassium, dissolved	M200.7 ICP	6.4			mg/L	0.6	3	08/14/07 15:42	djt
Sodium, dissolved	M200.7 ICP	70.9		*	mg/L	0.6	3	08/14/07 15:42	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		137			mg/L	2	20	07/19/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Total Alkalinity		137			mg/L	2	20	07/19/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-4.0			%			08/17/07 0:00	calc
Sum of Anions		36.6			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		33.8			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	152		*	mg/L	2	10	07/23/07 13:55	aml/jag
Fluoride	SM4500F-C	0.5	B	*	mg/L	0.1	0.5	07/24/07 14:12	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.31			mg/L	0.02	0.1	07/21/07 15:54	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2620			mg/L	10	20	07/23/07 13:41	aeh
Sulfate	SM4500 SO ₄ -D	1410		*	mg/L	10	50	07/26/07 15:56	kmc
TDS (calculated)	Calculation	2280			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.15						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-28

ACZ Sample ID: **L63915-05**

Date Sampled: 07/16/07 10:43

Date Received: 07/18/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	577			mg/L	0.4	2	08/14/07 15:46	djt
Magnesium, dissolved	M200.7 ICP	91.2			mg/L	0.4	2	08/14/07 15:46	djt
Potassium, dissolved	M200.7 ICP	6.5			mg/L	0.6	3	08/14/07 15:46	djt
Sodium, dissolved	M200.7 ICP	149		*	mg/L	0.6	3	08/14/07 15:46	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		130			mg/L	2	20	07/19/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Total Alkalinity		130			mg/L	2	20	07/19/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.1			%			08/17/07 0:00	calc
Sum of Anions		45.9			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		43.1			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	137		*	mg/L	2	10	07/23/07 13:56	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/24/07 14:15	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.42			mg/L	0.02	0.1	07/21/07 15:55	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3240			mg/L	10	20	07/23/07 13:42	aeh
Sulfate	SM4500 SO ₄ -D	1880		*	mg/L	10	50	07/26/07 15:57	kmc
TDS (calculated)	Calculation	2920			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.11						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-29

ACZ Sample ID: **L63915-06**

Date Sampled: 07/16/07 11:10

Date Received: 07/18/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	500			mg/L	0.4	2	08/14/07 15:49	djt
Magnesium, dissolved	M200.7 ICP	90.9			mg/L	0.4	2	08/14/07 15:49	djt
Potassium, dissolved	M200.7 ICP	9.9			mg/L	0.6	3	08/14/07 15:49	djt
Sodium, dissolved	M200.7 ICP	150		*	mg/L	0.6	3	08/14/07 15:49	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		158			mg/L	2	20	07/19/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/19/07 0:00	lcp/jlf
Total Alkalinity		158			mg/L	2	20	07/19/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.7			%			08/17/07 0:00	calc
Sum of Anions		42.3			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		39.3			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	159		*	mg/L	2	10	07/23/07 13:57	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/24/07 14:18	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.67		*	mg/L	0.02	0.1	07/21/07 15:57	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2970			mg/L	10	20	07/23/07 13:44	aeh
Sulfate	SM4500 SO ₄ -D	1650		*	mg/L	10	50	07/26/07 15:59	kmc
TDS (calculated)	Calculation	2650			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						08/17/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228636													
WG228636PBW1	PBW	07/19/07 9:58				U	mg/L		-20	20			
WG228636LCSW2	LCSW	07/19/07 10:11	WC070705-3	820		822.6	mg/L	100.3	90	110			
WG228636PBW2	PBW	07/19/07 12:34				U	mg/L		-20	20			
WG228636LCSW5	LCSW	07/19/07 12:47	WC070705-3	820		839.9	mg/L	102.4	90	110			
WG228636PBW3	PBW	07/19/07 15:48				U	mg/L		-20	20			
WG228636LCSW8	LCSW	07/19/07 15:59	WC070705-3	820		829	mg/L	101.1	90	110			
WG228636PBW4	PBW	07/19/07 18:53				U	mg/L		-20	20			
WG228636LCSW11	LCSW	07/19/07 19:06	WC070705-3	820		829.7	mg/L	101.2	90	110			
L63915-06DUP	DUP	07/19/07 20:32			158	158.6	mg/L				0.4	20	
WG228636LCSW14	LCSW	07/19/07 22:05	WC070705-3	820		827.4	mg/L	100.9	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.958	mg/L	97.9	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.09	0.09			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	1		1.02	mg/L	102	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	1	U	1.054	mg/L	105.4	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	1	U	1.077	mg/L	107.7	85	115	2.16	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	1	U	1.033	mg/L	103.3	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	1	U	1.051	mg/L	105.1	85	115	1.73	20	
WG230290													
WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.986	mg/L	99.3	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.09	0.09			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	1		1.024	mg/L	102.4	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	1	U	1	mg/L	100	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	1	U	1.075	mg/L	107.5	85	115	7.23	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.02		.02147	mg/L	107.4	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0012	0.0012			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.01		.01195	mg/L	119.5	85	115			N1
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.01	U	.01107	mg/L	110.7	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.01	U	.01073	mg/L	107.3	70	130	3.12	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.0531	mg/L	106.2	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0015	0.0015			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05331	mg/L	106.6	85	115			
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.05	.004	.05675	mg/L	105.5	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.05	.004	.05555	mg/L	103.1	70	130	2.14	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		2.0953	mg/L	104.8	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.009	0.009			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.5217	mg/L	104.3	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	.344	.879	mg/L	107	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	.344	.8762	mg/L	106.4	85	115	0.32	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	.021	.5501	mg/L	105.8	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	.021	.5424	mg/L	104.3	85	115	1.41	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		2.0377	mg/L	101.9	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.009	0.009			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.5129	mg/L	102.6	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	.165	.7095	mg/L	108.9	85	115	9.96	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.04955	mg/L	99.1	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.0493	mg/L	98.6	85	115			
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.05	U	.04828	mg/L	96.6	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.05	U	.04646	mg/L	92.9	70	130	3.84	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05332	mg/L	106.6	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05234	mg/L	104.7	85	115			
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.05	U	.0515	mg/L	103	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.05	U	.04965	mg/L	99.3	70	130	3.66	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	100		97.87	mg/L	97.9	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.6	0.6			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	67.97008		69.75	mg/L	102.6	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	67.97008	11.8	82.95	mg/L	104.7	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	67.97008	11.8	82.51	mg/L	104	85	115	0.53	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	67.97008	51	120.22	mg/L	101.8	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	67.97008	51	119.5	mg/L	100.8	85	115	0.6	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	100		96.03	mg/L	96	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.6	0.6			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	67.97008		67.23	mg/L	98.9	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	67.97008	23	87.16	mg/L	94.4	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	67.97008	23	92.3	mg/L	102	85	115	5.73	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228835													
WG228835ICV	ICV	07/23/07 10:05	WI070314-1	55		55.7	mg/L	101.3	90	110			
WG228835ICB	ICB	07/23/07 10:06				1.1	mg/L		-3	3			
WG228856													
WG228856ICV	ICV	07/23/07 13:02	WI070314-1	55		58.3	mg/L	106	90	110			
WG228856ICB	ICB	07/23/07 13:03				U	mg/L		-3	3			
WG228856LFB1	LFB	07/23/07 13:04	WI070712-1	30		29.4	mg/L	98	90	110			
WG228856LFB2	LFB	07/23/07 13:32	WI070712-1	30		30.7	mg/L	102.3	90	110			
L63908-02AS	AS	07/23/07 13:34	WI070712-1	30	2	31.1	mg/L	97	90	110			
L63908-03DUP	DUP	07/23/07 13:36			3	2.8	mg/L				6.9	20	RA

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.933	mg/L	96.7	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.03	0.03			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.497	mg/L	99.4	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	U	.507	mg/L	101.4	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	U	.501	mg/L	100.2	85	115	1.19	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	U	.502	mg/L	100.4	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	U	.495	mg/L	99	85	115	1.4	20	
WG230290													
WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.922	mg/L	96.1	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.03	0.03			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.499	mg/L	99.8	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	U	.484	mg/L	96.8	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	U	.53	mg/L	106	85	115	9.07	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.915	mg/L	95.8	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.03	0.03			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.489	mg/L	97.8	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	U	.498	mg/L	99.6	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	U	.497	mg/L	99.4	85	115	0.2	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	U	.489	mg/L	97.8	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	U	.489	mg/L	97.8	85	115	0	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.914	mg/L	95.7	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.03	0.03			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.489	mg/L	97.8	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	U	.469	mg/L	93.8	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	U	.515	mg/L	103	85	115	9.35	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228636													
WG228636LCSW1	LCSW	07/19/07 10:00	PCN27303	1408.8		1469	µmhos/crr	104.3	90	110			
WG228636LCSW4	LCSW	07/19/07 12:36	PCN27303	1408.8		1471	µmhos/crr	104.4	90	110			
WG228636LCSW7	LCSW	07/19/07 15:49	PCN27303	1408.8		1465	µmhos/crr	104	90	110			
WG228636LCSW10	LCSW	07/19/07 18:54	PCN27303	1408.8		1466	µmhos/crr	104.1	90	110			
L63915-06DUP	DUP	07/19/07 20:32			3310	3320	µmhos/crr				0.3	20	
WG228636LCSW13	LCSW	07/19/07 21:56	PCN27303	1408.8		1453	µmhos/crr	103.1	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.91	mg/L	95.5	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.03	0.03			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.492	mg/L	98.4	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	U	.506	mg/L	101.2	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	U	.5	mg/L	100	85	115	1.19	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	U	.498	mg/L	99.6	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	U	.494	mg/L	98.8	85	115	0.81	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.94	mg/L	97	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.03	0.03			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.503	mg/L	100.6	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	U	.483	mg/L	96.6	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	U	.532	mg/L	106.4	85	115	9.66	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228919													
WG228919ICV	ICV	07/24/07 11:40	WI070714-6	.3		.3047	mg/L	101.6	90	110			
WG228919ICB	ICB	07/24/07 11:41				U	mg/L		-0.015	0.015			
WG228741LRB	LRB	07/24/07 11:42				U	mg/L		-0.015	0.015			
WG228741LFB	LFB	07/24/07 11:43	WI070714-2	.2		.2148	mg/L	107.4	90	110			
L63888-01DUP	DUP	07/24/07 11:45			U	U	mg/L				0	20	RA
L63888-02LFM	LFM	07/24/07 11:47	WI070714-2	.2	U	.2269	mg/L	113.5	90	110			M1
L63916-03DUP	DUP	07/24/07 11:57			U	U	mg/L				0	20	RA
L63916-04LFM	LFM	07/24/07 11:58	WI070714-2	.2	U	.2251	mg/L	112.6	90	110			M1
WG228939													
WG228939ICV	ICV	07/24/07 14:40	WI070714-6	.3		.3092	mg/L	103.1	90	110			
WG228939ICB	ICB	07/24/07 14:41				U	mg/L		-0.015	0.015			
WG228974													
WG228974ICV	ICV	07/24/07 16:18	WI070714-6	.3		.3036	mg/L	101.2	90	110			
WG228974ICB	ICB	07/24/07 16:19				U	mg/L		-0.015	0.015			
WG228723LRB	LRB	07/24/07 16:21				U	mg/L		-0.015	0.015			
WG228723LFB	LFB	07/24/07 16:22	WI070714-2	.2		.1847	mg/L	92.4	90	110			
L63846-02DUP	DUP	07/24/07 16:24			.007	.0064	mg/L				9	20	RA
L63870-01LFM	LFM	07/24/07 16:25	WI070714-2	.2	U	.1933	mg/L	96.7	90	110			
L63906-03DUP	DUP	07/24/07 16:35			U	U	mg/L				0	20	RA
L63906-04LFM	LFM	07/24/07 16:37	WI070714-2	.2	U	.214	mg/L	107	90	110			

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228895													
WG228895ICV	ICV	07/24/07 10:50	WC070717-3	2		2.08	mg/L	104	90	110			
WG228895ICB	ICB	07/24/07 10:57				U	mg/L		-0.3	0.3			
WG228895LFB1	LFB	07/24/07 11:03	WC070504-3	5		5	mg/L	100	90	110			
WG228895LFB2	LFB	07/24/07 12:52	WC070504-3	5		4.88	mg/L	97.6	90	110			
L63904-13AS	AS	07/24/07 12:58	WC070504-3	5	.6	5.54	mg/L	98.8	90	110			
L63904-13DUP	DUP	07/24/07 13:02			.6	.61	mg/L				1.7	20	RA
L63915-02AS	AS	07/24/07 14:01	WC070504-3	5	.4	5.49	mg/L	101.8	90	110			
L63915-02DUP	DUP	07/24/07 14:06			.4	.38	mg/L				5.1	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.954	mg/L	97.7	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.06	0.06			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	1		1.018	mg/L	101.8	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	1	.04	1.056	mg/L	101.6	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	1	.04	1.048	mg/L	100.8	85	115	0.76	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	1	U	1.016	mg/L	101.6	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	1	U	1.006	mg/L	100.6	85	115	0.99	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.965	mg/L	98.3	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.06	0.06			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	1		1.023	mg/L	102.3	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	1	.08	1.047	mg/L	96.7	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	1	.08	1.143	mg/L	106.3	85	115	8.77	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05337	mg/L	106.7	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05261	mg/L	105.2	85	115			
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.05	.0009	.05498	mg/L	108.2	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.05	.0009	.05397	mg/L	106.1	70	130	1.85	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	100		99.23	mg/L	99.2	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.6	0.6			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	54.96908		56.11	mg/L	102.1	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	54.96908	2	59.21	mg/L	104.1	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	54.96908	2	58.8	mg/L	103.3	85	115	0.69	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	54.96908	11.2	68.63	mg/L	104.5	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	54.96908	11.2	68.19	mg/L	103.7	85	115	0.64	20	
WG230290													
WG230290ICV	ICV	08/14/07 13:04	II070725-7	100		98.66	mg/L	98.7	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.6	0.6			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	54.96908		55.53	mg/L	101	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	54.96908	1	54.83	mg/L	97.9	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	54.96908	1	58.33	mg/L	104.3	85	115	6.19	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.9149	mg/L	95.7	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.015	0.015			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.5237	mg/L	104.7	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	.016	.5422	mg/L	105.2	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	.016	.5389	mg/L	104.6	85	115	0.61	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	U	.5235	mg/L	104.7	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	U	.52	mg/L	104	85	115	0.67	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.8955	mg/L	94.8	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.015	0.015			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.5214	mg/L	104.3	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	.122	.6147	mg/L	98.5	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	.122	.6667	mg/L	108.9	85	115	8.12	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228878													
WG228878ICV	ICV	07/30/07 15:31	II070705-3	.00498		.00518	mg/L	104	95	105			
WG228878ICB	ICB	07/30/07 15:33				U	mg/L		-0.0002	0.0002			
WG228878LRB	LRB	07/30/07 15:35				U	mg/L		-0.00044	0.00044			
WG228878LFB	LFB	07/30/07 15:37	II070720-2	.002		.0022	mg/L	110	85	115			
L63906-03LFM	LFM	07/30/07 15:41	II070720-2	.002	.0003	.00236	mg/L	103	85	115			
L63906-03LFMD	LFMD	07/30/07 15:43	II070720-2	.002	.0003	.00252	mg/L	111	85	115	6.56	20	
L63915-06LFM	LFM	07/30/07 16:10	II070720-2	.002	.0006	.00262	mg/L	101	85	115			
L63915-06LFMD	LFMD	07/30/07 16:12	II070720-2	.002	.0006	.00272	mg/L	106	85	115	3.75	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.976	mg/L	98.8	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.03	0.03			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.503	mg/L	100.6	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	.02	.535	mg/L	103	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	.02	.526	mg/L	101.2	85	115	1.7	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	U	.504	mg/L	100.8	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	U	.507	mg/L	101.4	85	115	0.59	20	
WG230290													
WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.969	mg/L	98.5	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.03	0.03			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.494	mg/L	98.8	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	U	.477	mg/L	95.4	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	U	.504	mg/L	100.8	85	115	5.5	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63915**

Project ID: OJ03DL

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	2		1.906	mg/L	95.3	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.03	0.03			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	.5		.491	mg/L	98.2	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	.5	U	.502	mg/L	100.4	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	.5	U	.502	mg/L	100.4	85	115	0	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	.5	U	.493	mg/L	98.6	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	.5	U	.486	mg/L	97.2	85	115	1.43	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.894	mg/L	94.7	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.03	0.03			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.486	mg/L	97.2	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	U	.468	mg/L	93.6	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	U	.511	mg/L	102.2	85	115	8.78	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
WG228797													
WG228797ICV	ICV	07/21/07 14:23	WI070609-1	2.416		2.391	mg/L	99	90	110			
WG228797ICB	ICB	07/21/07 14:24				U	mg/L		-0.06	0.06			
WG228796													
WG228796ICV	ICV	07/21/07 14:58	WI070609-1	2.416		2.351	mg/L	97.3	90	110			
WG228796ICB	ICB	07/21/07 14:59				U	mg/L		-0.06	0.06			
WG228796LFB1	LFB	07/21/07 15:01	WI070307-9	2		2.091	mg/L	104.6	90	110			
L63906-03AS	AS	07/21/07 15:40	WI070307-9	2	1.71	3.795	mg/L	104.3	90	110			
L63906-04DUP	DUP	07/21/07 15:42			1.17	1.128	mg/L				3.7	20	
WG228796LFB2	LFB	07/21/07 15:56	WI070307-9	2		1.968	mg/L	98.4	90	110			
L63915-06AS	AS	07/21/07 15:59	WI070307-9	2	.67	2.675	mg/L	100.3	90	110			
L63916-03DUP	DUP	07/21/07 16:01			.13	.116	mg/L				11.4	20	RA

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228636													
WG228636LCSW3	LCSW	07/19/07 10:13	PCN26677	6		6.03	units	100.5	90	110			
WG228636LCSW6	LCSW	07/19/07 12:50	PCN26677	6		6.04	units	100.7	90	110			
WG228636LCSW9	LCSW	07/19/07 16:02	PCN26677	6		6.04	units	100.7	90	110			
WG228636LCSW12	LCSW	07/19/07 19:08	PCN26677	6		6.03	units	100.5	90	110			
L63915-06DUP	DUP	07/19/07 20:32			7.9	7.85	units				0.6	20	
WG228636LCSW15	LCSW	07/19/07 22:08	PCN26677	6		6.03	units	100.5	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	20		20.55	mg/L	102.8	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.9	0.9			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	99.76186		104.19	mg/L	104.4	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	99.76186	3.1	120.14	mg/L	117.3	85	115			M1
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	99.76186	3.1	119.45	mg/L	116.6	85	115	0.58	20	M1
L63915-02AS	AS	07/31/07 19:01	II070725-3	99.76186	5.4	115.26	mg/L	110.1	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	99.76186	5.4	114.78	mg/L	109.6	85	115	0.42	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	20		20.21	mg/L	101.1	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.9	0.9			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	99.76186		103.67	mg/L	103.9	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	99.76186	49.6	151.77	mg/L	102.4	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	99.76186	49.6	162.61	mg/L	113.3	85	115	6.9	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228859													
WG228859PBW	PBW	07/23/07 13:00				U	mg/L		-20	20			
WG228859LCSW	LCSW	07/23/07 13:01	PCN27690	260		276	mg/L	106.2	80	120			
L63915-01DUP	DUP	07/23/07 13:34			1130	1130	mg/L				0	20	
WG228860													
WG228860PBW	PBW	07/23/07 13:35				U	mg/L		-20	20			
WG228860LCSW	LCSW	07/23/07 13:36	PCN27690	260		276	mg/L	106.2	80	120			
L63916-05DUP	DUP	07/23/07 13:53			3630	3616	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
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05219	mg/L	104.4	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05127	mg/L	102.5	85	115			
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.05	.0011	.05461	mg/L	107	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.05	.0011	.05455	mg/L	106.9	70	130	0.11	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229302													
WG229302ICV	ICV	07/31/07 17:33	II070725-7	100		101.19	mg/L	101.2	95	105			
WG229302ICB	ICB	07/31/07 17:38				U	mg/L		-0.9	0.9			
WG229302LFB	LFB	07/31/07 17:54	II070725-3	98.21624		101.64	mg/L	103.5	85	115			
L63744-04AS	AS	07/31/07 18:03	II070725-3	98.21624	639	724.2	mg/L	86.7	85	115			
L63744-04ASD	ASD	07/31/07 18:07	II070725-3	98.21624	639	723.52	mg/L	86.1	85	115	0.09	20	
L63915-02AS	AS	07/31/07 19:01	II070725-3	98.21624	39.1	143.76	mg/L	106.6	85	115			
L63915-02ASD	ASD	07/31/07 19:06	II070725-3	98.21624	39.1	143.11	mg/L	105.9	85	115	0.45	20	

WG230290

WG230290ICV	ICV	08/14/07 13:04	II070725-7	100		99.98	mg/L	100	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.9	0.9			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	98.21624		100.25	mg/L	102.1	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	98.21624	479	536.55	mg/L	58.6	85	115			M3
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	98.21624	479	576.16	mg/L	98.9	85	115	7.12	20	

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229118													
WG229118PBW	PBW	07/26/07 15:30				U	mg/L		-30	30			
WG229118LCSW	LCSW	07/26/07 15:31	WC070705-2	100		103	mg/L	103	80	120			
L63915-01DUP	DUP	07/26/07 15:50			510	520	mg/L				1.9	20	
L63921-05DUP	DUP	07/26/07 16:09			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
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05452	mg/L	109	90	110			
WG228886ICB	ICB	07/24/07 1:04				.00012	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05303	mg/L	106.1	85	115			
L63915-01AS	AS	07/24/07 1:21	MS070712-3	.05	.0001	.05555	mg/L	110.9	70	130			
L63915-01ASD	ASD	07/24/07 1:26	MS070712-3	.05	.0001	.05409	mg/L	108	70	130	2.66	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63915**

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229439													
WG229439ICV1	ICV	08/01/07 11:58	II070725-7	2		1.93	mg/L	96.5	95	105			
WG229439ICB1	ICB	08/01/07 12:02				U	mg/L		-0.03	0.03			
WG229439LFB	LFB	08/01/07 12:16	II070725-3	.5		.53	mg/L	106	85	115			
L63888-01AS	AS	08/01/07 12:30	II070725-3	.5	3.05	3.41	mg/L	72	85	115			M3
L63888-01ASD	ASD	08/01/07 12:33	II070725-3	.5	3.05	3.407	mg/L	71.4	85	115	0.09	20	M3
L63915-02AS	AS	08/01/07 13:12	II070725-3	.5	U	.544	mg/L	108.8	85	115			
L63915-02ASD	ASD	08/01/07 13:16	II070725-3	.5	U	.536	mg/L	107.2	85	115	1.48	20	
WG230290													
WG230290ICV	ICV	08/14/07 13:04	II070725-7	2		1.9	mg/L	95	95	105			
WG230290ICB	ICB	08/14/07 13:08				U	mg/L		-0.03	0.03			
WG230290LFB	LFB	08/14/07 15:39	II070814-4	.5		.491	mg/L	98.2	85	115			
L64188-15AS	AS	08/14/07 15:56	II070814-4	.5	.04	.518	mg/L	95.6	85	115			
L64188-15ASD	ASD	08/14/07 16:00	II070814-4	.5	.04	.553	mg/L	102.6	85	115	6.54	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63915**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63915-01	WG228886	Antimony, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG229302	Potassium, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229439	Zinc, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG228856	Chloride	325.2 / SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228974	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).
	WG228895	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).
L63915-02	WG228886	Antimony, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG228856	Chloride	325.2 / SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228974	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).
	WG228895	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).
	WG229118	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).
L63915-03	WG228886	Antimony, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG228856	Chloride	325.2 / SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228974	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).
	WG228895	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).
	WG229118	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).
L63915-04	WG228886	Antimony, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG230290	Sodium, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG228856	Chloride	325.2 / SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228974	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).
	WG228895	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).
	WG229118	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63915**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63915-05	WG228886	Antimony, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG230290	Sodium, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG228856	Chloride	325.2 / SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228974	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).
	WG228895	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).
	WG229118	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).
L63915-06	WG228886	Antimony, dissolved	M200.8 ICP-MS	N1	See Case Narrative.
	WG230290	Sodium, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG228856	Chloride	325.2 / SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228919	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228895	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).
	WG228796	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).
L63915-07	WG229118	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).
	WG228974	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63915**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63915
Date Received: 7/18/2007
Received By:
Date Printed: 7/18/2007

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

The following samples contain headspace: 3-2/3, 8-1/1.

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

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1534		11.4	17

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

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63915
 Date Received: 7/18/2007
 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
L63915-01	IW-1		Y		Y							☐
L63915-02	IW-2		Y		Y							☐
L63915-03	IW-3A		Y		Y							☐
L63915-04	MH-10		Y		Y							☐
L63915-05	MH-28		Y		Y							☐
L63915-06	MH-29		Y		Y							☐
L63915-07	TB061307-24									X		☐
L63915-08	TB061307-09									X		☐

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: _____

August 01, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Kim Garcia, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63922

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 18, 2007. This project has been assigned to ACZ's project number, L63922. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L63922. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 01, 2007. 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.



Phelps Dodge Sierrita

August 01, 2007

Project ID: OJ03Z5

ACZ Project ID: L63922

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 8 ground water samples from Phelps Dodge Sierrita on July 18, 2007. 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 L63922. 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.

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-540451ACZ Sample ID: **L63922-01**
Date Sampled: 07/16/07 15:10
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	475			mS/cm			07/16/07 15:00	ma
pH (Field)	Field Measurement	7.7			units			07/16/07 15:00	ma
Temperature (Field)	Field Measurement	27.4			C			07/16/07 15:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	51.8			mg/L	0.2	1	07/31/07 21:12	msh
Magnesium, dissolved	M200.7 ICP	9.2			mg/L	0.2	1	07/31/07 21:12	msh
Potassium, dissolved	M200.7 ICP	1.5	B		mg/L	0.3	2	07/31/07 21:12	msh
Sodium, dissolved	M200.7 ICP	27.4			mg/L	0.3	2	07/31/07 21:12	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		122			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		122		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			08/01/07 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	08/01/07 0:00	calc
Sum of Cations		4.5			meq/L	0.1	0.5	08/01/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	10.1			mg/L	0.5	3	07/25/07 18:03	jag
Fluoride	M300.0 - Ion Chromatography	0.1	B		mg/L	0.1	0.5	07/25/07 18:03	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.99			mg/L	0.02	0.1	08/01/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.99	H	*	mg/L	0.02	0.1	07/18/07 21:54	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/18/07 21:54	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	320			mg/L	10	20	07/23/07 14:02	aeh
Sulfate	300.0 - Ion Chromatography	84.5			mg/L	0.5	3	07/26/07 18:42	jag
TDS (calculated)	Calculation	262			mg/L	10	50	08/01/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.22						08/01/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-540451

ACZ Sample ID: **L63922-02**

Date Sampled: 07/16/07 15:10

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	475			mS/cm			07/16/07 15:10	ma
pH (Field)	Field Measurement	7.7			units			07/16/07 15:10	ma
Temperature (Field)	Field Measurement	27.4			C			07/16/07 15:10	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	84.9			mg/L	0.5	3	07/26/07 19:00	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: FGW-529142

ACZ Sample ID: **L63922-03**
Date Sampled: 07/16/07 11:00
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	433			mS/cm			07/16/07 11:00	ma
pH (Field)	Field Measurement	7.5			units			07/16/07 11:00	ma
Temperature (Field)	Field Measurement	25.2			C			07/16/07 11:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	49.7			mg/L	0.2	1	07/31/07 21:25	msh
Magnesium, dissolved	M200.7 ICP	9.0			mg/L	0.2	1	07/31/07 21:25	msh
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	07/31/07 21:25	msh
Sodium, dissolved	M200.7 ICP	25.0			mg/L	0.3	2	07/31/07 21:25	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		202			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		202		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.1			%			08/01/07 15:42	calc
Sum of Anions		4.3			meq/L	0.1	0.5	08/01/07 15:42	calc
Sum of Cations		4.4			meq/L	0.1	0.5	08/01/07 15:42	calc
Chloride	M300.0 - Ion Chromatography	7.4			mg/L	0.5	3	07/25/07 10:30	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B		mg/L	0.1	0.5	07/25/07 10:30	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.95			mg/L	0.02	0.1	08/01/07 15:42	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.95	H	*	mg/L	0.02	0.1	07/18/07 21:55	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/18/07 21:55	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	270			mg/L	10	20	07/23/07 14:03	aeh
Sulfate	300.0 - Ion Chromatography	3.0			mg/L	0.5	3	07/26/07 19:18	jag
TDS (calculated)	Calculation	223			mg/L	10	50	08/01/07 15:42	calc
TDS (ratio - measured/calculated)	Calculation	1.21						08/01/07 15:42	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-529142

ACZ Sample ID: **L63922-04**

Date Sampled: 07/16/07 11:00

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	433			mS/cm			07/16/07 11:00	ma
pH (Field)	Field Measurement	7.5			units			07/16/07 11:00	ma
Temperature (Field)	Field Measurement	25.2			C			07/16/07 11:00	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	3.0	B		mg/L	0.5	3	07/26/07 19:36	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-206214ACZ Sample ID: **L63922-05**
Date Sampled: 07/16/07 12:10
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	418			mS/cm			07/16/07 12:10	ma
pH (Field)	Field Measurement	7.4			units			07/16/07 12:10	ma
Temperature (Field)	Field Measurement	28.1			C			07/16/07 12:10	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	46.7			mg/L	0.2	1	07/31/07 21:29	msh
Magnesium, dissolved	M200.7 ICP	7.3			mg/L	0.2	1	07/31/07 21:29	msh
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	2	07/31/07 21:29	msh
Sodium, dissolved	M200.7 ICP	27.0			mg/L	0.3	2	07/31/07 21:29	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		195			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		195		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			08/01/07 15:42	calc
Sum of Anions		4.2			meq/L	0.1	0.5	08/01/07 15:42	calc
Sum of Cations		4.2			meq/L	0.1	0.5	08/01/07 15:42	calc
Chloride	M300.0 - Ion Chromatography	7.9			mg/L	0.5	3	07/25/07 11:07	jag
Fluoride	M300.0 - Ion Chromatography	0.2	B		mg/L	0.1	0.5	07/25/07 11:07	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.81			mg/L	0.02	0.1	08/01/07 15:42	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.81	H	*	mg/L	0.02	0.1	07/18/07 21:56	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/18/07 21:56	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	260			mg/L	10	20	07/23/07 14:05	aeh
Sulfate	300.0 - Ion Chromatography	3.5			mg/L	0.5	3	07/26/07 19:54	jag
TDS (calculated)	Calculation	216			mg/L	10	50	08/01/07 15:42	calc
TDS (ratio - measured/calculated)	Calculation	1.20						08/01/07 15:42	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-206214

ACZ Sample ID: **L63922-06**

Date Sampled: 07/16/07 12:10

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	418			mS/cm			07/16/07 12:10	ma
pH (Field)	Field Measurement	7.4			units			07/16/07 12:10	ma
Temperature (Field)	Field Measurement	28.1			C			07/16/07 12:10	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	3.6			mg/L	0.5	3	07/26/07 20:12	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-640358ACZ Sample ID: **L63922-07**
Date Sampled: 07/16/07 13:10
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	383			mS/cm			07/16/07 13:10	ma
pH (Field)	Field Measurement	7.6			units			07/16/07 13:10	ma
Temperature (Field)	Field Measurement	28.2			C			07/16/07 13:10	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	36.2			mg/L	0.2	1	07/31/07 21:34	msh
Magnesium, dissolved	M200.7 ICP	6.4			mg/L	0.2	1	07/31/07 21:34	msh
Potassium, dissolved	M200.7 ICP	4.1			mg/L	0.3	2	07/31/07 21:34	msh
Sodium, dissolved	M200.7 ICP	32.0			mg/L	0.3	2	07/31/07 21:34	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		172			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		172		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			08/01/07 15:42	calc
Sum of Anions		3.8			meq/L	0.1	0.5	08/01/07 15:42	calc
Sum of Cations		3.8			meq/L	0.1	0.5	08/01/07 15:42	calc
Chloride	M300.0 - Ion Chromatography	8.5			mg/L	0.5	3	07/25/07 11:43	jag
Fluoride	M300.0 - Ion Chromatography	0.4	B		mg/L	0.1	0.5	07/25/07 11:43	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.17			mg/L	0.02	0.1	08/01/07 15:42	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.17	H	*	mg/L	0.02	0.1	07/18/07 21:58	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	07/18/07 21:58	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	250			mg/L	10	20	07/23/07 14:06	aeh
Sulfate	300.0 - Ion Chromatography	3.4			mg/L	0.5	3	07/26/07 20:31	jag
TDS (calculated)	Calculation	199			mg/L	10	50	08/01/07 15:42	calc
TDS (ratio - measured/calculated)	Calculation	1.26						08/01/07 15:42	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-640358

ACZ Sample ID: **L63922-08**

Date Sampled: 07/16/07 13:10

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	383			mS/cm			07/16/07 13:10	ma
pH (Field)	Field Measurement	7.6			units			07/16/07 13:10	ma
Temperature (Field)	Field Measurement	28.2			C			07/16/07 13:10	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	3.4			mg/L	0.5	3	07/26/07 20:49	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63922**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228794													
WG228794PBW1	PBW	07/21/07 12:50				U	mg/L		-20	20			
WG228794PBW2	PBW	07/21/07 15:51				U	mg/L		-20	20			
WG228794LCSW5	LCSW	07/21/07 16:04	WC070705-3	820		821.2	mg/L	100.1	90	110			
L63925-07DUP	DUP	07/21/07 18:51			108	117.1	mg/L				8.1	20	
WG228794PBW3	PBW	07/21/07 18:57				U	mg/L		-20	20			
WG228794LCSW8	LCSW	07/21/07 19:09	WC070705-3	820		823.7	mg/L	100.5	90	110			
WG228794PBW4	PBW	07/21/07 21:59				U	mg/L		-20	20			
WG228794LCSW11	LCSW	07/21/07 22:11	WC070705-3	820		821.6	mg/L	100.2	90	110			
WG228794LCSW14	LCSW	07/22/07 1:30	WC070705-3	820		826	mg/L	100.7	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	100		99.43	mg/L	99.4	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.6	0.6			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	67.97008		70.25	mg/L	103.4	85	115			
L63919-02AS	AS	07/31/07 20:55	II070725-3	67.97008	26.7	96.82	mg/L	103.2	85	115			
L63919-02ASD	ASD	07/31/07 20:59	II070725-3	67.97008	26.7	97.38	mg/L	104	85	115	0.58	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG228966													
WG228966ICV	ICV	07/25/07 2:38	IC070710-1	20		19.98	mg/L	99.9	90	110			
WG228966ICB	ICB	07/25/07 2:56				U	mg/L		-1.5	1.5			
WG228966LFB	LFB	07/25/07 3:15	IC070205-3	30		30.51	mg/L	101.7	90	110			
L63904-12DUP	DUP	07/25/07 8:04			14	14.01	mg/L				0.1	20	
L63904-13AS	AS	07/25/07 8:40	IC070205-3	30	13	41.86	mg/L	96.2	90	110			
WG228966ICV1	ICV	07/25/07 16:14	IC070710-1	20		20.1	mg/L	100.5	90	110			
WG228966ICB1	ICB	07/25/07 16:33				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63922**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG228966													
WG228966ICV	ICV	07/25/07 2:38	IC070710-1	3.984		4.08	mg/L	102.4	90	110			
WG228966ICB	ICB	07/25/07 2:56				U	mg/L		-0.3	0.3			
WG228966LFB	LFB	07/25/07 3:15	IC070205-3	1.5		1.58	mg/L	105.3	90	110			
L63904-12DUP	DUP	07/25/07 8:04			1.9	1.98	mg/L				4.1	20	
L63904-13AS	AS	07/25/07 8:40	IC070205-3	1.5	.6	2.1	mg/L	100	90	110			
WG228966ICV1	ICV	07/25/07 16:14	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG228966ICB1	ICB	07/25/07 16:33				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	100		100.22	mg/L	100.2	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.6	0.6			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	54.96908		55.83	mg/L	101.6	85	115			
L63919-02AS	AS	07/31/07 20:55	II070725-3	54.96908	5.1	62.23	mg/L	103.9	85	115			
L63919-02ASD	ASD	07/31/07 20:59	II070725-3	54.96908	5.1	62.54	mg/L	104.5	85	115	0.5	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228621													
WG228621ICV	ICV	07/18/07 20:30	WI070609-1	2.416		2.342	mg/L	96.9	90	110			
WG228621ICB	ICB	07/18/07 20:31				U	mg/L		-0.06	0.06			
WG228621LFB1	LFB	07/18/07 20:35	WI070307-9	2		2.017	mg/L	100.9	90	110			
WG228621LFB2	LFB	07/18/07 21:39	WI070307-9	2		2.028	mg/L	101.4	90	110			
L63910-05DUP	DUP	07/18/07 21:48			.03	.03	mg/L				0	20	RA
L63910-04AS	AS	07/18/07 22:26	WI070307-9	100	70	176.4	mg/L	106.4	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228621													
WG228621ICV	ICV	07/18/07 20:30	WI070609-1	.609		.617	mg/L	101.3	90	110			
WG228621ICB	ICB	07/18/07 20:31				U	mg/L		-0.03	0.03			
WG228621LFB1	LFB	07/18/07 20:35	WI070307-9	1		1.013	mg/L	101.3	90	110			
WG228621LFB2	LFB	07/18/07 21:13	WI070307-9	1		.977	mg/L	97.7	90	110			
L63910-04AS	AS	07/18/07 21:15	WI070307-9	1		1.005	mg/L	100.5	90	110			
L63910-05DUP	DUP	07/18/07 21:48				U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63922**

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	20		20.05	mg/L	100.3	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.9	0.9			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	99.76186		102.32	mg/L	102.6	85	115			
L63919-02AS	AS	07/31/07 20:55	II070725-3	99.76186	1.8	108.08	mg/L	106.5	85	115			
L63919-02ASD	ASD	07/31/07 20:59	II070725-3	99.76186	1.8	109.19	mg/L	107.6	85	115	1.02	20	

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228860													
WG228860PBW	PBW	07/23/07 13:35				U	mg/L		-20	20			
WG228860LCSW	LCSW	07/23/07 13:36	PCN27690	260		276	mg/L	106.2	80	120			
L63944-01DUP	DUP	07/23/07 14:09			4200	4206	mg/L				0.1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	100		100.86	mg/L	100.9	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.9	0.9			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	98.21624		100.14	mg/L	102	85	115			
L63919-02AS	AS	07/31/07 20:55	II070725-3	98.21624	7.9	111.19	mg/L	105.2	85	115			
L63919-02ASD	ASD	07/31/07 20:59	II070725-3	98.21624	7.9	111.32	mg/L	105.3	85	115	0.12	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229108													
WG229108ICV	ICV	07/26/07 14:10	IC070710-1	50.15		52.08	mg/L	103.8	90	110			
WG229108ICB	ICB	07/26/07 14:28				U	mg/L		-1.5	1.5			
WG229108LFB	LFB	07/26/07 14:47	IC070205-3	30		31.27	mg/L	104.2	90	110			
L63825-07AS	AS	07/26/07 15:23	IC070205-3	300	254	549.7	mg/L	98.6	90	110			
L63876-05DUP	DUP	07/26/07 16:17			479	480.1	mg/L				0.2	20	
L63925-03AS	AS	07/26/07 22:56	IC070205-3	30	57	85.67	mg/L	95.6	90	110			
WG229108ICV1	ICV	07/27/07 10:06	IC070710-1	50.15		52.08	mg/L	103.8	90	110			
WG229108ICB1	ICB	07/27/07 10:24				U	mg/L		-1.5	1.5			
L63925-01DUP	DUP	07/27/07 11:00			156	156.1	mg/L				0.1	20	

Phelps Dodge SierritaACZ Project ID: **L63922**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63922-01	WG228621	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63922-03	WG228621	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63922-05	WG228621	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge SierritaACZ Project ID: **L63922**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63922-07	WG228621	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L63922**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63922
Date Received: 7/18/2007
Received By:
Date Printed: 7/18/2007

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)
NA3984		19.0	16

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63922
 Date Received: 7/18/2007
 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
L63922-01	FGW-532595		Y									☐
L63922-02	UGW-532595									X		☐
L63922-03	FGW-529142		Y									☐
L63922-04	UGW-529142									X		☐
L63922-05	FGW-206214		Y									☐
L63922-06	UGW-206214									X		☐
L63922-07	FGW-640358		Y									☐
L63922-08	UGW-640358									X		☐

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: _____

ACZ Laboratories, Inc.

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

L63922

CHAIN of CUSTODY

Report to:

Name: Kim Garcia
Company: Hydro Geo Chem Inc.
E-mail: kimg@hginc.com

Address: 51 W. Wetmore Rd.
Tucson AZ 85705-1678
Telephone: 520 293 1500 x 123

Copy of Report to:

Name: Ned Hall / Billy Dorris / Jim Norris
Company: PDSI / HGAC

E-mail: jimn@hginc.com / BillyDorris@FME.COM
Telephone: 520 293 1500 x 112 / 520 648 8873

Invoice to:

Name: Ned Hall
Company: PDSI
E-mail: Ned Hall@FHI.COM

Address: 6200 W Duval Mine Rd
P.O. Box 527 Green Valley AZ 85622
Telephone: 520 648 8857

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 #: Sierrita Short
Project/PO #: OJ0325
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

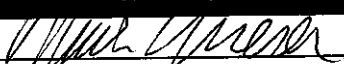
SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca	Mg	Na+K	Al	Fe	NO ₃ ⁻	NO ₂ ⁻	SO ₄ ⁻	pH	EC	Temp
FGW-532595	7-16-07: 1510	GW	2	X	X							7.70	475	22.4
UGW-532595	7-16-07: 1510	GW	1								X	7.70	475	27.4
FGW-529142	7-16-07: 1100	GW	2	X	X							7.47	433	25.2
UGW-529142	7-16-07: 1100	GW	1								X	7.47	433	25.2
FGW-206214	7-16-07: 1210	GW	2	X	X							7.42	418	24.1
UGW-206214	7-16-07: 1210	GW	1								X	7.42	418	24.1
FGW-640358	7-16-07: 1310	GW	2	X	X							7.59	393	24.2
UGW-640358	7-16-07: 1310	GW	1								X	7.59	383	24.2

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

REMARKS

FGW = Filtered Groundwater Sample
UGW = Unfiltered Groundwater Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	7-16-07: 1539	KU	7-18-07 910 2

August 10, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L63925

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 18, 2007. This project has been assigned to ACZ's project number, L63925. 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 L63925. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 10, 2007. 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.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-608521ACZ Sample ID: **L63925-01**
Date Sampled: 07/17/07 09:25
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	657			mS/cm			07/17/07 9:25	ma
pH (Field)	Field Measurement	8.2			units			07/17/07 9:25	ma
Temperature (Field)	Field Measurement	32.2			C			07/17/07 9:25	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	19.4			mg/L	0.2	1	07/31/07 22:25	msh
Magnesium, dissolved	M200.7 ICP	0.5	B		mg/L	0.2	1	07/31/07 22:25	msh
Potassium, dissolved	M200.7 ICP	2.1			mg/L	0.3	2	07/31/07 22:25	msh
Sodium, dissolved	M200.7 ICP	107			mg/L	0.3	2	07/31/07 22:25	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		89			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃		2	B		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		91		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.8			%			08/10/07 0:00	calc
Sum of Anions		5.5			meq/L	0.1	0.5	08/10/07 0:00	calc
Sum of Cations		5.7			meq/L	0.1	0.5	08/10/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	13		*	mg/L	3	10	07/27/07 10:42	jag
Fluoride	M300.0 - Ion Chromatography	1.9	B	*	mg/L	0.5	3	07/27/07 10:42	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.32			mg/L	0.02	0.1	08/10/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.32	H	*	mg/L	0.02	0.1	07/19/07 21:39	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	07/19/07 21:39	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	390			mg/L	10	20	07/24/07 12:31	ear/lcp
Sulfate	300.0 - Ion Chromatography	156			mg/L	3	10	07/27/07 10:42	jag
TDS (calculated)	Calculation	357			mg/L	10	50	08/10/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						08/10/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-608521

ACZ Sample ID: **L63925-02**

Date Sampled: 07/17/07 09:25

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	657			mS/cm			07/17/07 9:25	ma
pH (Field)	Field Measurement	8.2			units			07/17/07 9:25	ma
Temperature (Field)	Field Measurement	32.2			C			07/17/07 9:25	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	148			mg/L	3	10	08/03/07 16:14	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-608597ACZ Sample ID: **L63925-03**
Date Sampled: 07/17/07 10:10
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	439			mS/cm			07/17/07 10:10	ma
pH (Field)	Field Measurement	7.7			units			07/17/07 10:10	ma
Temperature (Field)	Field Measurement	26.5			C			07/17/07 10:10	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	48.3			mg/L	0.2	1	07/31/07 22:29	msh
Magnesium, dissolved	M200.7 ICP	6.4			mg/L	0.2	1	07/31/07 22:29	msh
Potassium, dissolved	M200.7 ICP	2.0	B		mg/L	0.3	2	07/31/07 22:29	msh
Sodium, dissolved	M200.7 ICP	27.4			mg/L	0.3	2	07/31/07 22:29	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		132			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		132		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.2			%			08/10/07 0:00	calc
Sum of Anions		4.1			meq/L	0.1	0.5	08/10/07 0:00	calc
Sum of Cations		4.2			meq/L	0.1	0.5	08/10/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.4		*	mg/L	0.5	3	07/26/07 22:37	jag
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	07/26/07 22:37	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.49			mg/L	0.02	0.1	08/10/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.49	H	*	mg/L	0.02	0.1	07/19/07 21:40	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	07/19/07 21:40	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	270			mg/L	10	20	07/24/07 12:34	ear/lcp
Sulfate	300.0 - Ion Chromatography	57.0			mg/L	0.5	3	07/26/07 22:37	jag
TDS (calculated)	Calculation	231			mg/L	10	50	08/10/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.17						08/10/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-608597

ACZ Sample ID: **L63925-04**

Date Sampled: 07/17/07 10:10

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	439			mS/cm			07/17/07 10:10	ma
pH (Field)	Field Measurement	7.7			units			07/17/07 10:10	ma
Temperature (Field)	Field Measurement	26.5			C			07/17/07 10:10	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	57.3			mg/L	0.5	3	07/26/07 23:14	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-635387ACZ Sample ID: **L63925-05**
Date Sampled: 07/17/07 11:35
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	536			mS/cm			07/17/07 11:35	ma
pH (Field)	Field Measurement	7.6			units			07/17/07 11:35	ma
Temperature (Field)	Field Measurement	28.1			C			07/17/07 11:35	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	65.3			mg/L	0.2	1	07/31/07 22:34	msh
Magnesium, dissolved	M200.7 ICP	7.5			mg/L	0.2	1	07/31/07 22:34	msh
Potassium, dissolved	M200.7 ICP	2.6			mg/L	0.3	2	07/31/07 22:34	msh
Sodium, dissolved	M200.7 ICP	26.3			mg/L	0.3	2	07/31/07 22:34	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		134			mg/L	2	20	07/21/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/21/07 0:00	cas
Total Alkalinity		134		*	mg/L	2	20	07/21/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.0			%			08/10/07 0:00	calc
Sum of Anions		5.0			meq/L	0.1	0.5	08/10/07 0:00	calc
Sum of Cations		5.1			meq/L	0.1	0.5	08/10/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	14.2			mg/L	0.5	3	07/27/07 4:58	jag
Fluoride	M300.0 - Ion Chromatography	0.1	B	*	mg/L	0.1	0.5	07/27/07 4:58	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	2.20			mg/L	0.02	0.1	08/10/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.20	H	*	mg/L	0.02	0.1	07/19/07 21:41	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	07/19/07 21:41	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	340			mg/L	10	20	07/24/07 12:37	ear/lcp
Sulfate	300.0 - Ion Chromatography	86.8		*	mg/L	0.5	3	07/30/07 17:31	jag
TDS (calculated)	Calculation	293			mg/L	10	50	08/10/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.16						08/10/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-635387

ACZ Sample ID: **L63925-06**

Date Sampled: 07/17/07 11:35

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	536			mS/cm			07/17/07 11:35	ma
pH (Field)	Field Measurement	7.6			units			07/17/07 11:35	ma
Temperature (Field)	Field Measurement	28.1			C			07/17/07 11:35	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	87.4			mg/L	0.5	3	07/27/07 5:16	jag

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-635386ACZ Sample ID: **L63925-07**
Date Sampled: 07/17/07 00:00
Date Received: 07/18/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	336			mS/cm			07/17/07 0:00	ma
pH (Field)	Field Measurement	7.9			units			07/17/07 0:00	ma
Temperature (Field)	Field Measurement	26.4			C			07/17/07 0:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	33.3			mg/L	0.2	1	07/31/07 22:38	msh
Magnesium, dissolved	M200.7 ICP	4.9			mg/L	0.2	1	07/31/07 22:38	msh
Potassium, dissolved	M200.7 ICP	1.5	B		mg/L	0.3	2	07/31/07 22:38	msh
Sodium, dissolved	M200.7 ICP	22.7			mg/L	0.3	2	07/31/07 22:38	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		108			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		108			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.6			%			08/10/07 0:00	calc
Sum of Anions		3.0			meq/L	0.1	0.5	08/10/07 0:00	calc
Sum of Cations		3.1			meq/L	0.1	0.5	08/10/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	6.1			mg/L	0.5	3	07/27/07 5:34	jag
Fluoride	M300.0 - Ion Chromatography	0.1	B	*	mg/L	0.1	0.5	07/27/07 5:34	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.35			mg/L	0.02	0.1	08/10/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.35	H	*	mg/L	0.02	0.1	07/19/07 21:44	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	07/19/07 21:44	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	200			mg/L	10	20	07/24/07 12:39	ear/lcp
Sulfate	300.0 - Ion Chromatography	33.1			mg/L	0.5	3	07/27/07 5:34	jag
TDS (calculated)	Calculation	168			mg/L	10	50	08/10/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.19						08/10/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-635386

ACZ Sample ID: **L63925-08**

Date Sampled: 07/17/07 00:00

Date Received: 07/18/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	336			mS/cm			07/17/07 0:00	ma
pH (Field)	Field Measurement	7.9			units			07/17/07 0:00	ma
Temperature (Field)	Field Measurement	26.4			C			07/17/07 0:00	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	33.2			mg/L	0.5	3	07/27/07 6:10	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63925**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228794													
WG228794PBW1	PBW	07/21/07 12:50				U	mg/L		-20	20			
WG228794PBW2	PBW	07/21/07 15:51				U	mg/L		-20	20			
WG228794LCSW5	LCSW	07/21/07 16:04	WC070705-3	820		821.2	mg/L	100.1	90	110			
L63925-07DUP	DUP	07/21/07 18:51			108	117.1	mg/L				8.1	20	
WG228794PBW3	PBW	07/21/07 18:57				U	mg/L		-20	20			
WG228794LCSW8	LCSW	07/21/07 19:09	WC070705-3	820		823.7	mg/L	100.5	90	110			
WG228794PBW4	PBW	07/21/07 21:59				U	mg/L		-20	20			
WG228794LCSW11	LCSW	07/21/07 22:11	WC070705-3	820		821.6	mg/L	100.2	90	110			
WG228794LCSW14	LCSW	07/22/07 1:30	WC070705-3	820		826	mg/L	100.7	90	110			

WG228851

WG228851PBW1	PBW	07/23/07 15:30				U	mg/L		-20	20			
WG228851LCSW2	LCSW	07/23/07 15:42	WC070705-3	820		820.8	mg/L	100.1	90	110			
L63936-01DUP	DUP	07/23/07 18:55			215	214.2	mg/L				0.4	20	
WG228851PBW2	PBW	07/23/07 19:00				U	mg/L		-20	20			
WG228851LCSW5	LCSW	07/23/07 19:13	WC070705-3	820		822.6	mg/L	100.3	90	110			
WG228851PBW3	PBW	07/23/07 21:12				U	mg/L		-20	20			
WG228851LCSW8	LCSW	07/23/07 21:23	WC070705-3	820		829.8	mg/L	101.2	90	110			
WG228851PBW4	PBW	07/24/07 0:01				U	mg/L		-20	20			
WG228851LCSW11	LCSW	07/24/07 0:13	WC070705-3	820		828.2	mg/L	101	90	110			
WG228851LCSW14	LCSW	07/24/07 3:02	WC070705-3	820		829.6	mg/L	101.2	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	100		99.43	mg/L	99.4	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.6	0.6			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	67.97008		70.25	mg/L	103.4	85	115			
L63924-04AS	AS	07/31/07 21:55	II070725-3	67.97008	384	442.2	mg/L	85.6	85	115			
L63924-04ASD	ASD	07/31/07 21:59	II070725-3	67.97008	384	443.46	mg/L	87.5	85	115	0.28	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63925**

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229108													
WG229108ICV	ICV	07/26/07 14:10	IC070710-1	20		20.16	mg/L	100.8	90	110			
WG229108ICB	ICB	07/26/07 14:28				U	mg/L		-1.5	1.5			
WG229108LFB	LFB	07/26/07 14:47	IC070205-3	30		30.47	mg/L	101.6	90	110			
L63925-03AS	AS	07/26/07 22:56	IC070205-3	30	8.4	38.64	mg/L	100.8	90	110			
WG229108ICV1	ICV	07/27/07 10:06	IC070710-1	20		20.23	mg/L	101.2	90	110			
WG229108ICB1	ICB	07/27/07 10:24				U	mg/L		-1.5	1.5			
L63925-01DUP	DUP	07/27/07 11:00			13	12.6	mg/L				3.1	20	RA
WG229109													
WG229109ICV	ICV	07/27/07 0:08	IC070710-1	20		20.26	mg/L	101.3	90	110			
WG229109ICB	ICB	07/27/07 0:26				U	mg/L		-1.5	1.5			
WG229109LFB	LFB	07/27/07 0:44	IC070205-3	30		30.77	mg/L	102.6	90	110			
L63783-01DUP	DUP	07/27/07 1:20			43	42.7	mg/L				0.7	20	
L63783-02AS	AS	07/27/07 1:57	IC070205-3	60	39	95.4	mg/L	94	90	110			
L63925-07DUP	DUP	07/27/07 5:52			6.1	6.12	mg/L				0.3	20	
L63940-01AS	AS	07/27/07 6:46	IC070205-3	30	22.6	50.94	mg/L	94.5	90	110			
WG229109ICV1	ICV	07/27/07 12:12	IC070710-1	20		20.26	mg/L	101.3	90	110			
WG229109ICB1	ICB	07/27/07 12:30				U	mg/L		-1.5	1.5			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63925**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG229108													
WG229108ICV	ICV	07/26/07 14:10	IC070710-1	3.984		4.1	mg/L	102.9	90	110			
WG229108ICB	ICB	07/26/07 14:28				U	mg/L		-0.3	0.3			
WG229108LFB	LFB	07/26/07 14:47	IC070205-3	1.5		1.56	mg/L	104	90	110			
L63925-03AS	AS	07/26/07 22:56	IC070205-3	1.5	U	1.61	mg/L	107.3	90	110			
WG229108ICV1	ICV	07/27/07 10:06	IC070710-1	3.984		4.12	mg/L	103.4	90	110			
WG229108ICB1	ICB	07/27/07 10:24				U	mg/L		-0.3	0.3			
L63925-01DUP	DUP	07/27/07 11:00			1.9	1.95	mg/L				2.6	20	RA
WG229109													
WG229109ICV	ICV	07/27/07 0:08	IC070710-1	3.984		4.18	mg/L	104.9	90	110			
WG229109ICB	ICB	07/27/07 0:26				U	mg/L		-0.3	0.3			
WG229109LFB	LFB	07/27/07 0:44	IC070205-3	1.5		1.57	mg/L	104.7	90	110			
L63783-01DUP	DUP	07/27/07 1:20			.6	.58	mg/L				3.4	20	RA
L63783-02AS	AS	07/27/07 1:57	IC070205-3	3	.6	3.15	mg/L	85	90	110			M2
L63925-07DUP	DUP	07/27/07 5:52			.1	.11	mg/L				9.5	20	RA
L63940-01AS	AS	07/27/07 6:46	IC070205-3	1.5	.4	1.86	mg/L	97.3	90	110			
WG229109ICV1	ICV	07/27/07 12:12	IC070710-1	3.984		4.18	mg/L	104.9	90	110			
WG229109ICB1	ICB	07/27/07 12:30				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	100		100.22	mg/L	100.2	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.6	0.6			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	54.96908		55.83	mg/L	101.6	85	115			
L63924-04AS	AS	07/31/07 21:55	II070725-3	54.96908	138	191.65	mg/L	97.6	85	115			
L63924-04ASD	ASD	07/31/07 21:59	II070725-3	54.96908	138	192.54	mg/L	99.2	85	115	0.46	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228715													
WG228715ICV	ICV	07/19/07 21:00	WI070609-1	2.416		2.39	mg/L	98.9	90	110			
WG228715ICB	ICB	07/19/07 21:02				U	mg/L		-0.06	0.06			
WG228715LFB1	LFB	07/19/07 21:04	WI070307-9	2		1.992	mg/L	99.6	90	110			
L63909-04AS	AS	07/19/07 21:25	WI070307-9	2	1.83	3.993	mg/L	108.2	90	110			
L63909-05DUP	DUP	07/19/07 21:28			.02	.029	mg/L				36.7	20	RA
WG228715LFB2	LFB	07/19/07 21:43	WI070307-9	2		1.942	mg/L	97.1	90	110			
L63925-07AS	AS	07/19/07 21:45	WI070307-9	2	.35	2.291	mg/L	97.1	90	110			
L63927-01DUP	DUP	07/19/07 21:51			.39	.392	mg/L				0.5	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L63925**

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228715													
WG228715ICV	ICV	07/19/07 21:00	WI070609-1	.609		.611	mg/L	100.3	90	110			
WG228715ICB	ICB	07/19/07 21:02				U	mg/L		-0.03	0.03			
WG228715LFB1	LFB	07/19/07 21:04	WI070307-9	1		.989	mg/L	98.9	90	110			
L63909-04AS	AS	07/19/07 21:25	WI070307-9	1	U	1.025	mg/L	102.5	90	110			
L63909-05DUP	DUP	07/19/07 21:28			U	U	mg/L				0	20	RA
WG228715LFB2	LFB	07/19/07 21:43	WI070307-9	1		.98	mg/L	98	90	110			
L63925-07AS	AS	07/19/07 21:45	WI070307-9	1	U	.976	mg/L	97.6	90	110			
L63927-01DUP	DUP	07/19/07 21:51			U	U	mg/L				0	20	RA

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	20		20.05	mg/L	100.3	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.9	0.9			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	99.76186		102.32	mg/L	102.6	85	115			
L63924-04AS	AS	07/31/07 21:55	II070725-3	99.76186	8.7	120.02	mg/L	111.6	85	115			
L63924-04ASD	ASD	07/31/07 21:59	II070725-3	99.76186	8.7	121.04	mg/L	112.6	85	115	0.85	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228928													
WG228928PBW	PBW	07/24/07 11:50				U	mg/L		-20	20			
WG228928LCSW	LCSW	07/24/07 11:52	PCN27690	260		276	mg/L	106.2	80	120			
L63932-03DUP	DUP	07/24/07 12:50			150	154	mg/L				2.6	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229371													
WG229371ICV	ICV	07/31/07 20:26	II070725-7	100		100.86	mg/L	100.9	95	105			
WG229371ICB	ICB	07/31/07 20:30				U	mg/L		-0.9	0.9			
WG229371LFB	LFB	07/31/07 20:47	II070725-3	98.21624		100.14	mg/L	102	85	115			
L63924-04AS	AS	07/31/07 21:55	II070725-3	98.21624	83.5	184.25	mg/L	102.6	85	115			
L63924-04ASD	ASD	07/31/07 21:59	II070725-3	98.21624	83.5	186.3	mg/L	104.7	85	115	1.11	20	

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L63925**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	50.15		51.03	mg/L	101.8	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-1.5	1.5			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	30		32.91	mg/L	109.7	90	110			
L63999-01DUP	DUP	08/03/07 16:50			29.4	29.44	mg/L				0.1	20	
L63999-02AS	AS	08/03/07 17:27	WI070727-1	30	16.1	48.87	mg/L	109.2	90	110			
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	50.15		50.57	mg/L	100.8	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-1.5	1.5			
WG229108													
WG229108ICV	ICV	07/26/07 14:10	IC070710-1	50.15		52.08	mg/L	103.8	90	110			
WG229108ICB	ICB	07/26/07 14:28				U	mg/L		-1.5	1.5			
WG229108LFB	LFB	07/26/07 14:47	IC070205-3	30		31.27	mg/L	104.2	90	110			
L63925-03AS	AS	07/26/07 22:56	IC070205-3	30	57	85.67	mg/L	95.6	90	110			
WG229108ICV1	ICV	07/27/07 10:06	IC070710-1	50.15		52.08	mg/L	103.8	90	110			
WG229108ICB1	ICB	07/27/07 10:24				U	mg/L		-1.5	1.5			
L63925-01DUP	DUP	07/27/07 11:00			156	156.1	mg/L				0.1	20	
WG229109													
WG229109ICV	ICV	07/27/07 0:08	IC070710-1	50.15		50.43	mg/L	100.6	90	110			
WG229109ICB	ICB	07/27/07 0:26				U	mg/L		-1.5	1.5			
WG229109LFB	LFB	07/27/07 0:44	IC070205-3	30		30.1	mg/L	100.3	90	110			
L63925-07DUP	DUP	07/27/07 5:52			33.1	33.11	mg/L				0	20	
WG229109ICV1	ICV	07/27/07 12:12	IC070710-1	50.15		50.56	mg/L	100.8	90	110			
WG229109ICB1	ICB	07/27/07 12:30				U	mg/L		-1.5	1.5			
L63783-01DUP	DUP	07/27/07 13:07			1260	1256	mg/L				0.3	20	
L63940-01AS	AS	07/27/07 13:43	IC070205-3	300	254	551.6	mg/L	99.2	90	110			
WG229313													
WG229313ICV	ICV	07/30/07 16:18	IC070710-1	50.15		51.23	mg/L	102.2	90	110			
WG229313ICB	ICB	07/30/07 16:36				U	mg/L		-1.5	1.5			
WG229313LFB	LFB	07/30/07 16:54	WI070727-1	30		32.58	mg/L	108.6	90	110			
L63940-19DUP	DUP	07/30/07 18:07			U	U	mg/L				0	20	RA
L63940-20AS	AS	07/30/07 18:43	WI070727-1	30	U	30.78	mg/L	102.6	90	110			

Phelps Dodge SierritaACZ Project ID: **L63925**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63925-01	WG229108	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228715	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63925-03	WG229108	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228715	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge SierritaACZ Project ID: **L63925**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63925-05	WG229109	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228715	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229313	Sulfate	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).
	WG228794	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L63925-07	WG229109	Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG228715	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M353.2 - Automated Cadmium Reduction	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L63925**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63925
Date Received: 7/18/2007
Received By:
Date Printed: 7/18/2007

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)
NA3985		4.5	15

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L63925
 Date Received: 7/18/2007
 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
L63925-01	FGW-608521		Y									☐
L63925-02	UGW-608521											☐
L63925-03	FGW-608597		Y									☐
L63925-04	UGW-608597									X		☐
L63925-05	FGW-635387		Y									☐
L63925-06	UGW-635387									X		☐
L63925-07	FGW-635386		Y									☐
L63925-08	UGW-635386									X		☐

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: _____

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

L63925

Report to:

Name: Kim Garcia
Company: Hydro Geo Chem Inc
E-mail: king@hgcinc.com

Address: 51 W. Wetmore Rd.
Tucson AZ 85705-1678
Telephone: 520 293 1500 x 123

Copy of Report to:

Name: Ned Hall / Billy Dorris / Jim Norris
Company: PDSE / HGC

E-mail: jimn@hgcinc.com / BillyDorris@FMI.com
Telephone: 520 293 1500 x 112 / 520 648 8873

Invoice to:

Name: Ned Hall
Company: PDSE
E-mail: NedHall@FMI.Com

Address: 6200 W Duval Mine Rd.
P.O. Box 527 Green Valley AZ 85622
Telephone: 520 648 8857

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 #: Sierrita Short
Project/PO #: OJ0325
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca Mg Na K	AlK, TDS, SO ₄ ⁻	Cl ⁻ , F ⁻ , NO ₃ ⁻	SO ₄ ²⁻ Sulfate	PH	EC	Temp
FGW-608521	7/17/07: 0925	GW	2	X	X			8.20	657	32.2
UGW-608521	7/17/07: 0925		1				X	8.20	657	32.2
FGW-608597	7/17/07: 1010		2	X	X			7.69	439	26.5
UGW-608597	7/17/07: 1010		1				X	7.69	439	26.5
FGW-635387	7/17/07: 1135		2	X	X			7.62	536	29.1
UGW-635387	7/17/07: 1135		1				X	7.62	536	28.1
FGW-635386	7/17/07:		2	X	X			7.86	336	26.4
UGW-635386	7/17/07:		1				X	7.86	336	26.4

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

REMARKS

FGW = Filtered Groundwater Sample
UGW = Unfiltered Groundwater Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
M. Arneson	7/17/07: 1553	LJ	7-18-07 9:47

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

August 09, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L63937 - SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2007. This project was assigned to ACZ's project number, L63937. 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 11.0. The enclosed results relate only to the samples received under L63937. 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.



Phelps Dodge Sierrita

Project ID:

Sample ID: MH-11

ACZ Sample ID: **L63937-01**

Date Sampled: 07/17/07 14:21

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	487			mg/L	0.4	2	08/01/07 2:38	djt
Magnesium, dissolved	M200.7 ICP	110			mg/L	0.4	2	08/01/07 2:38	djt
Potassium, dissolved	M200.7 ICP	14.4			mg/L	0.6	3	08/01/07 2:38	djt
Sodium, dissolved	M200.7 ICP	105			mg/L	0.6	3	08/01/07 2:38	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		109			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		109		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.8			%			08/09/07 0:00	calc
Sum of Anions		39.8			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		38.4			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	106			mg/L	2	10	07/27/07 10:14	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/26/07 19:26	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.26			mg/L	0.02	0.1	07/27/07 19:25	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2650			mg/L	10	20	07/24/07 14:06	aeH
Sulfate	SM4500 SO ₄ -D	1650			mg/L	10	50	08/01/07 15:04	aeH
TDS (calculated)	Calculation	2540			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.04						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID:

Sample ID: MH-13A

ACZ Sample ID: **L63937-02**

Date Sampled: 07/17/07 12:32

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	528			mg/L	0.4	2	08/01/07 2:42	djt
Magnesium, dissolved	M200.7 ICP	104			mg/L	0.4	2	08/01/07 2:42	djt
Potassium, dissolved	M200.7 ICP	14.4			mg/L	0.6	3	08/01/07 2:42	djt
Sodium, dissolved	M200.7 ICP	178			mg/L	0.6	3	08/01/07 2:42	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		112			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		112		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.9			%			08/09/07 0:00	calc
Sum of Anions		43.9			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		43.1			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	167			mg/L	2	10	07/27/07 10:18	aml/jag
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	07/26/07 19:39	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.20			mg/L	0.02	0.1	07/27/07 19:27	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3130			mg/L	10	20	07/24/07 14:07	aeH
Sulfate	SM4500 SO ₄ -D	1760			mg/L	10	50	08/01/07 15:12	aeH
TDS (calculated)	Calculation	2820			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.11						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID:

Sample ID: MH-13B

ACZ Sample ID: **L63937-03**

Date Sampled: 07/17/07 14:12

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	369			mg/L	0.4	2	08/01/07 2:46	djt
Magnesium, dissolved	M200.7 ICP	53.4			mg/L	0.4	2	08/01/07 2:46	djt
Potassium, dissolved	M200.7 ICP	10.7			mg/L	0.6	3	08/01/07 2:46	djt
Sodium, dissolved	M200.7 ICP	119			mg/L	0.6	3	08/01/07 2:46	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		112			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		112		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-4.7			%			08/09/07 0:00	calc
Sum of Anions		31.1			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		28.3			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	167			mg/L	2	10	07/27/07 10:20	aml/jag
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	07/26/07 19:47	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.62			mg/L	0.02	0.1	07/27/07 19:29	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2190			mg/L	10	20	07/24/07 14:09	aeH
Sulfate	SM4500 SO ₄ -D	1150			mg/L	10	50	08/01/07 15:16	aeH
TDS (calculated)	Calculation	1940			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID:

Sample ID: MH-13C

ACZ Sample ID: **L63937-04**

Date Sampled: 07/17/07 11:55

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	11.6			mg/L	0.2	1	08/01/07 2:50	djt
Magnesium, dissolved	M200.7 ICP	1.0	B		mg/L	0.2	1	08/01/07 2:50	djt
Potassium, dissolved	M200.7 ICP	2.5			mg/L	0.3	2	08/01/07 2:50	djt
Sodium, dissolved	M200.7 ICP	64.5			mg/L	0.3	2	08/01/07 2:50	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		94			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		94		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		16.7			%			08/09/07 0:00	calc
Sum of Anions		2.5			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		3.5			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	7			mg/L	1	5	07/27/07 9:51	aml/jag
Fluoride	SM4500F-C	0.6		*	mg/L	0.1	0.5	07/26/07 19:50	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.11			mg/L	0.02	0.1	07/27/07 19:32	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	220			mg/L	10	20	07/24/07 14:10	aeh
Sulfate	SM4500 SO ₄ -D	20	B		mg/L	10	50	08/01/07 15:20	aeh
TDS (calculated)	Calculation	164			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.34						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID:

Sample ID: S-3

ACZ Sample ID: **L63937-05**

Date Sampled: 07/17/07 08:30

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	53.5			mg/L	0.2	1	08/01/07 3:01	djt
Magnesium, dissolved	M200.7 ICP	6.7			mg/L	0.2	1	08/01/07 3:01	djt
Potassium, dissolved	M200.7 ICP	3.8			mg/L	0.3	2	08/01/07 3:01	djt
Sodium, dissolved	M200.7 ICP	56.7			mg/L	0.3	2	08/01/07 3:01	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		121			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃		16	B		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		138		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.5			%			08/09/07 0:00	calc
Sum of Anions		5.3			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		5.8			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	24			mg/L	1	5	07/27/07 9:52	aml/jag
Fluoride	SM4500F-C	0.7		*	mg/L	0.1	0.5	07/26/07 19:53	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.53			mg/L	0.02	0.1	07/27/07 19:33	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	370			mg/L	10	20	07/24/07 14:11	aeh
Sulfate	SM4500 SO ₄ -D	90			mg/L	10	50	08/01/07 15:24	aeh
TDS (calculated)	Calculation	324			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID:

Sample ID: S-1

ACZ Sample ID: **L63937-06**

Date Sampled: 07/18/07 09:45

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	70.7			mg/L	0.2	1	08/01/07 3:12	djt
Magnesium, dissolved	M200.7 ICP	9.1			mg/L	0.2	1	08/01/07 3:12	djt
Potassium, dissolved	M200.7 ICP	3.2			mg/L	0.3	2	08/01/07 3:12	djt
Sodium, dissolved	M200.7 ICP	46.0			mg/L	0.3	2	08/01/07 3:12	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		154			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		154		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		13.5			%			08/09/07 0:00	calc
Sum of Anions		4.8			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		6.3			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	19			mg/L	1	5	07/27/07 9:55	aml/jag
Fluoride	SM4500F-C	0.4	B	*	mg/L	0.1	0.5	07/26/07 19:56	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	3.71			mg/L	0.02	0.1	07/27/07 19:34	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	400			mg/L	10	20	07/24/07 14:13	aeh
Sulfate	SM4500 SO ₄ -D	60		*	mg/L	10	50	07/27/07 13:43	kmc
TDS (calculated)	Calculation	301			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.33						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID:

Sample ID: S-2

ACZ Sample ID: **L63937-07**

Date Sampled: 07/18/07 10:15

Date Received: 07/19/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	52.1			mg/L	0.2	1	08/01/07 3:16	djt
Magnesium, dissolved	M200.7 ICP	5.9			mg/L	0.2	1	08/01/07 3:16	djt
Potassium, dissolved	M200.7 ICP	3.3			mg/L	0.3	2	08/01/07 3:16	djt
Sodium, dissolved	M200.7 ICP	51.2			mg/L	0.3	2	08/01/07 3:16	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		176			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		176		*	mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.9			%			08/09/07 0:00	calc
Sum of Anions		5.1			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		5.4			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	13			mg/L	1	5	07/27/07 9:56	aml/jag
Fluoride	SM4500F-C	0.6		*	mg/L	0.1	0.5	07/26/07 19:58	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.10			mg/L	0.02	0.1	07/27/07 19:39	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	340			mg/L	10	20	07/24/07 14:14	aeh
Sulfate	SM4500 SO ₄ -D	60		*	mg/L	10	50	07/27/07 13:45	kmc
TDS (calculated)	Calculation	292			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.16						08/09/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

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Project ID:

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Alkalinity as CaCO₃

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851PBW1	PBW	07/23/07 15:30				U	mg/L		-20	20			
WG228851LCSW2	LCSW	07/23/07 15:42	WC070705-3	820		820.8	mg/L	100.1	90	110			
WG228851PBW2	PBW	07/23/07 19:00				U	mg/L		-20	20			
WG228851LCSW5	LCSW	07/23/07 19:13	WC070705-3	820		822.6	mg/L	100.3	90	110			
L63939-03DUP	DUP	07/23/07 20:24			U	U	mg/L				0	20	RA
WG228851PBW3	PBW	07/23/07 21:12				U	mg/L		-20	20			
WG228851LCSW8	LCSW	07/23/07 21:23	WC070705-3	820		829.8	mg/L	101.2	90	110			
WG228851PBW4	PBW	07/24/07 0:01				U	mg/L		-20	20			
WG228851LCSW11	LCSW	07/24/07 0:13	WC070705-3	820		828.2	mg/L	101	90	110			
WG228851LCSW14	LCSW	07/24/07 3:02	WC070705-3	820		829.6	mg/L	101.2	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		2.046	mg/L	102.3	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.09	0.09			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	1		1.071	mg/L	107.1	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	1	U	1.099	mg/L	109.9	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	1	U	1.078	mg/L	107.8	85	115	1.93	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.02		.02147	mg/L	107.4	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0012	0.0012			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.01		.01195	mg/L	119.5	85	115			N1
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.02	U	.02446	mg/L	122.3	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.02	U	.02624	mg/L	131.2	70	130	7.02	20	MA
WG228946													
WG228946ICV	ICV	07/25/07 10:35	MS070607-2	.02		.01997	mg/L	99.9	90	110			
WG228946ICB	ICB	07/25/07 10:41				.00047	mg/L		-0.0012	0.0012			
WG228946LFB	LFB	07/25/07 10:47	MS070712-3	.01		.01103	mg/L	110.3	85	115			
L63921-01AS	AS	07/25/07 10:59	MS070712-3	.02	.0032	.02282	mg/L	98.1	70	130			
L63921-01ASD	ASD	07/25/07 11:06	MS070712-3	.02	.0032	.0234	mg/L	101	70	130	2.51	20	
L63937-05AS	AS	07/25/07 12:26	MS070712-3	.01	U	.00881	mg/L	88.1	70	130			
L63937-05ASD	ASD	07/25/07 12:32	MS070712-3	.01	U	.00896	mg/L	89.6	70	130	1.69	20	

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Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.0531	mg/L	106.2	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0015	0.0015			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05331	mg/L	106.6	85	115			
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.1	.001	.1056	mg/L	104.6	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.1	.001	.1061	mg/L	105.1	70	130	0.47	20	

WG228946

WG228946ICV	ICV	07/25/07 10:35	MS070607-2	.05		.05089	mg/L	101.8	90	110			
WG228946ICB	ICB	07/25/07 10:41				.00064	mg/L		-0.0015	0.0015			
WG228946LFB	LFB	07/25/07 10:47	MS070712-3	.05		.0501	mg/L	100.2	85	115			
L63921-01AS	AS	07/25/07 10:59	MS070712-3	.1	.005	.1059	mg/L	100.9	70	130			
L63921-01ASD	ASD	07/25/07 11:06	MS070712-3	.1	.005	.1083	mg/L	103.3	70	130	2.24	20	
L63937-05AS	AS	07/25/07 12:26	MS070712-3	.05	.0137	.06594	mg/L	104.5	70	130			
L63937-05ASD	ASD	07/25/07 12:32	MS070712-3	.05	.0137	.06477	mg/L	102.1	70	130	1.79	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.9875	mg/L	99.4	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.009	0.009			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.4934	mg/L	98.7	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	.013	.521	mg/L	101.6	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	.013	.572	mg/L	111.8	85	115	9.33	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.04955	mg/L	99.1	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.0493	mg/L	98.6	85	115			
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.1	U	.09078	mg/L	90.8	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.1	U	.09504	mg/L	95	70	130	4.59	20	
WG228946													
WG228946ICV	ICV	07/25/07 10:35	MS070607-2	.05		.05007	mg/L	100.1	90	110			
WG228946ICB	ICB	07/25/07 10:41				U	mg/L		-0.0003	0.0003			
WG228946LFB	LFB	07/25/07 10:47	MS070712-3	.05		.04823	mg/L	96.5	85	115			
L63921-01AS	AS	07/25/07 10:59	MS070712-3	.1	U	.08728	mg/L	87.3	70	130			
L63921-01ASD	ASD	07/25/07 11:06	MS070712-3	.1	U	.08804	mg/L	88	70	130	0.87	20	
L63937-05AS	AS	07/25/07 12:26	MS070712-3	.05	U	.05279	mg/L	105.6	70	130			
L63937-05ASD	ASD	07/25/07 12:32	MS070712-3	.05	U	.05399	mg/L	108	70	130	2.25	20	

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Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05332	mg/L	106.6	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05234	mg/L	104.7	85	115			
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.1	.0002	.09622	mg/L	96	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.1	.0002	.09534	mg/L	95.1	70	130	0.92	20	

WG228946

WG228946ICV	ICV	07/25/07 10:35	MS070607-2	.05		.05077	mg/L	101.5	90	110			
WG228946ICB	ICB	07/25/07 10:41				U	mg/L		-0.0003	0.0003			
WG228946LFB	LFB	07/25/07 10:47	MS070712-3	.05		.04936	mg/L	98.7	85	115			
L63921-01AS	AS	07/25/07 10:59	MS070712-3	.1	.003	.09652	mg/L	93.5	70	130			
L63921-01ASD	ASD	07/25/07 11:06	MS070712-3	.1	.003	.09862	mg/L	95.6	70	130	2.15	20	
L63937-05AS	AS	07/25/07 12:26	MS070712-3	.05	.0002	.05123	mg/L	102.1	70	130			
L63937-05ASD	ASD	07/25/07 12:32	MS070712-3	.05	.0002	.05016	mg/L	99.9	70	130	2.11	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	100		100.82	mg/L	100.8	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.6	0.6			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	67.97008		71.83	mg/L	105.7	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	67.97008	11.6	84.26	mg/L	106.9	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	67.97008	11.6	82.42	mg/L	104.2	85	115	2.21	20	

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229173													
WG229173ICV	ICV	07/27/07 9:29	WI070314-1	55		54.7	mg/L	99.5	90	110			
WG229173ICB	ICB	07/27/07 9:30				U	mg/L		-3	3			
WG229173LFB1	LFB	07/27/07 9:31	WI070712-1	30		29.5	mg/L	98.3	90	110			
WG229173LFB2	LFB	07/27/07 9:59	WI070712-1	30		29.7	mg/L	99	90	110			
L63937-01AS	AS	07/27/07 10:15	WI070712-1	60	106	165.5	mg/L	99.2	90	110			
L63937-02DUP	DUP	07/27/07 10:19			167	169.1	mg/L				1.2	20	

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.996	mg/L	99.8	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.03	0.03			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.517	mg/L	103.4	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	U	.523	mg/L	104.6	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	U	.581	mg/L	116.2	85	115	10.51	20	MA

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Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.955	mg/L	97.8	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.03	0.03			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.506	mg/L	101.2	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	U	.506	mg/L	101.2	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	U	.555	mg/L	111	85	115	9.24	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW1	LCSW	07/23/07 15:32	PCN27303	1408.8		1493	µmhos/cm	106	90	110			
WG228851LCSW4	LCSW	07/23/07 19:02	PCN27303	1408.8		1502	µmhos/cm	106.6	90	110			
L63939-03DUP	DUP	07/23/07 20:24			1690	1691	µmhos/cm				0.1	20	
WG228851LCSW7	LCSW	07/23/07 21:14	PCN27303	1408.8		1492	µmhos/cm	105.9	90	110			
WG228851LCSW10	LCSW	07/24/07 0:03	PCN27303	1408.8		1492	µmhos/cm	105.9	90	110			
WG228851LCSW13	LCSW	07/24/07 2:52	PCN27303	1408.8		1484	µmhos/cm	105.3	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.934	mg/L	96.7	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.03	0.03			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.495	mg/L	99	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	U	.51	mg/L	102	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	U	.567	mg/L	113.4	85	115	10.58	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228939													
WG228939ICV	ICV	07/24/07 14:40	WI070714-6	.3		.3092	mg/L	103.1	90	110			
WG228939ICB	ICB	07/24/07 14:41				U	mg/L		-0.015	0.015			
WG228828LRB	LRB	07/24/07 14:43				U	mg/L		-0.015	0.015			
WG228828LFB	LFB	07/24/07 14:44	WI070714-2	.2		.2195	mg/L	109.8	90	110			
L63932-01DUP	DUP	07/24/07 14:45			U	U	mg/L				0	20	RA
L63932-02LFM	LFM	07/24/07 14:47	WI070714-2	.2	U	.2262	mg/L	113.1	90	110			M1
L63937-06DUP	DUP	07/24/07 14:57			U	U	mg/L				0	20	RA
L63937-07LFM	LFM	07/24/07 14:59	WI070714-2	.2	U	.2283	mg/L	114.2	90	110			M1

Phelps Dodge Sierrita

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Project ID:

Fluoride SM4500F-C													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229130													
WG229130ICV	ICV	07/26/07 15:39	WC070724-1	2		2.19	mg/L	109.5	90	110			
WG229130ICB	ICB	07/26/07 15:46				U	mg/L		-0.3	0.3			
WG229130LFB1	LFB	07/26/07 15:51	WC070504-3	5		4.96	mg/L	99.2	90	110			
WG229130LFB1-1	LFB	07/26/07 17:30	WC070504-3	5		5.06	mg/L	101.2	90	110			
WG229130LFB2	LFB	07/26/07 18:21	WC070504-3	5		4.87	mg/L	97.4	90	110			
L63814-01AS	AS	07/26/07 18:34	WC070504-3	5	5.7	9.89	mg/L	83.8	90	110			M2
L63814-01DUP	DUP	07/26/07 18:41			5.7	5.76	mg/L				1	20	
L63937-02AS	AS	07/26/07 19:42	WC070504-3	5	U	4.89	mg/L	97.8	90	110			
L63937-02DUP	DUP	07/26/07 19:44			U	.1	mg/L				0	20	RA
Iron, dissolved M200.7 ICP													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.999	mg/L	100	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.06	0.06			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	1		1.048	mg/L	104.8	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	1	.13	1.186	mg/L	105.6	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	1	.13	1.285	mg/L	115.5	85	115	8.01	20	MA
Lead, dissolved M200.8 ICP-MS													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05337	mg/L	106.7	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05261	mg/L	105.2	85	115			
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.1	.0007	.10838	mg/L	107.7	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.1	.0007	.10934	mg/L	108.6	70	130	0.88	20	
WG228946													
WG228946ICV	ICV	07/25/07 10:35	MS070607-2	.05		.05192	mg/L	103.8	90	110			
WG228946ICB	ICB	07/25/07 10:41				.00013	mg/L		-0.0003	0.0003			
WG228946LFB	LFB	07/25/07 10:47	MS070712-3	.05		.05007	mg/L	100.1	85	115			
L63921-01AS	AS	07/25/07 10:59	MS070712-3	.1	.0002	.10336	mg/L	103.2	70	130			
L63921-01ASD	ASD	07/25/07 11:06	MS070712-3	.1	.0002	.10528	mg/L	105.1	70	130	1.84	20	
L63937-05AS	AS	07/25/07 12:26	MS070712-3	.05	.0026	.05423	mg/L	103.3	70	130			
L63937-05ASD	ASD	07/25/07 12:32	MS070712-3	.05	.0026	.05367	mg/L	102.1	70	130	1.04	20	
Magnesium, dissolved M200.7 ICP													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	100		100.81	mg/L	100.8	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.6	0.6			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	54.96908		57.74	mg/L	105	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	54.96908	1	59.97	mg/L	107.3	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	54.96908	1	59.5	mg/L	106.4	85	115	0.79	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63937**

Project ID:

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.9772	mg/L	98.9	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.015	0.015			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.5383	mg/L	107.7	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	U	.5481	mg/L	109.6	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	U	.6046	mg/L	120.9	85	115	9.8	20	MA

Mercury, dissolved

M245.1 CVA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229120													
WG229120ICV	ICV	08/03/07 17:02	II070705-3	.00498		.00507	mg/L	101.8	95	105			
WG229120ICB	ICB	08/03/07 17:04				U	mg/L		-0.0002	0.0002			
WG229120LFB	LFB	08/03/07 17:09	II070720-2	.002		.00221	mg/L	110.5	85	115			
WG229120LRB	LRB	08/03/07 17:12				U	mg/L		-0.00044	0.00044			
L63921-04LFM	LFM	08/03/07 17:31	II070720-2	.002	U	.00218	mg/L	109	85	115			
L63921-04LFMD	LFMD	08/03/07 17:34	II070720-2	.002	U	.00228	mg/L	114	85	115	4.48	20	
WG229715													
WG229715ICV	ICV	08/07/07 11:10	II070803-1	.00498		.00486	mg/L	97.6	95	105			
WG229715ICB	ICB	08/07/07 11:12				U	mg/L		-0.0002	0.0002			
WG229211													
WG229211ICV	ICV	08/07/07 13:24	II070725-9	.005		.00483	mg/L	96.6	95	105			
WG229211ICB	ICB	08/07/07 13:26				U	mg/L		-0.0002	0.0002			
WG229211LRB	LRB	08/07/07 13:29				U	mg/L		-0.00044	0.00044			
WG229211LFB	LFB	08/07/07 13:31	II070720-2	.002		.00214	mg/L	107	85	115			
L63937-05LFM	LFM	08/07/07 13:35	II070720-2	.002	U	.00237	mg/L	118.5	85	115			M1
L63937-05LFMD	LFMD	08/07/07 13:37	II070720-2	.002	U	.00235	mg/L	117.5	85	115	0.85	20	M1

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		2.047	mg/L	102.4	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.03	0.03			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.52	mg/L	104	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	U	.564	mg/L	112.8	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	U	.557	mg/L	111.4	85	115	1.25	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63937**

Project ID:

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229465													
WG229465ICV	ICV	08/02/07 0:13	II070725-7	2		1.902	mg/L	95.1	95	105			
WG229465ICB	ICB	08/02/07 0:18				U	mg/L		-0.03	0.03			
WG229465LFB	LFB	08/02/07 0:31	II070725-3	.5		.488	mg/L	97.6	85	115			
L63937-04AS	AS	08/02/07 1:44	II070725-3	.5		.469	mg/L	93.8	85	115			
L63937-04ASD	ASD	08/02/07 1:47	II070725-3	.5		.526	mg/L	105.2	85	115	11.46	20	
WG229536													
WG229536ICV	ICV	08/02/07 17:48	II070725-7	2		1.917	mg/L	95.9	95	105			
WG229536ICB	ICB	08/02/07 17:52				U	mg/L		-0.03	0.03			
WG229536LFB	LFB	08/02/07 18:09	II070802-2	.5		.485	mg/L	97	85	115			
L63882-09AS	AS	08/02/07 19:17	II070802-2	.5	U	.504	mg/L	100.8	85	115			
L63882-09ASD	ASD	08/02/07 19:21	II070802-2	.5	U	.503	mg/L	100.6	85	115	0.2	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
WG229231													
WG229231ICV	ICV	07/27/07 18:01	WI070609-1	2.416		2.463	mg/L	101.9	90	110			
WG229231ICB	ICB	07/27/07 18:02				U	mg/L		-0.06	0.06			
WG229233													
WG229233ICV	ICV	07/27/07 19:04	WI070609-1	2.416		2.44	mg/L	101	90	110			
WG229233ICB	ICB	07/27/07 19:06				U	mg/L		-0.06	0.06			
WG229233LFB1	LFB	07/27/07 19:07	WI070307-9	2		2.1	mg/L	105	90	110			
L63783-01AS	AS	07/27/07 19:09	WI070307-9	2	.03	2.071	mg/L	102.1	90	110			
L63783-02DUP	DUP	07/27/07 19:12			.52	.52	mg/L				0	20	
L63937-02AS	AS	07/27/07 19:28	WI070307-9	2	1.2	3.247	mg/L	102.4	90	110			
L63937-03DUP	DUP	07/27/07 19:30			1.62	1.621	mg/L				0.1	20	
WG229233LFB2	LFB	07/27/07 19:45	WI070307-9	2		1.928	mg/L	96.4	90	110			

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW3	LCSW	07/23/07 15:44	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW6	LCSW	07/23/07 19:16	PCN26677	6		6.04	units	100.7	90	110			
L63939-03DUP	DUP	07/23/07 20:24			3.8	3.78	units				0.5	20	
WG228851LCSW9	LCSW	07/23/07 21:26	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW12	LCSW	07/24/07 0:15	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW15	LCSW	07/24/07 3:06	PCN26677	6		6.03	units	100.5	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	20		20.18	mg/L	100.9	95	105			
WG229376ICB	ICB	08/01/07 1:28				.33	mg/L		-0.9	0.9			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	99.76186		102.78	mg/L	103	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	99.76186	2.5	108.94	mg/L	106.7	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	99.76186	2.5	106.68	mg/L	104.4	85	115	2.1	20	

Phelps Dodge Sierrita
Project ID:

ACZ Project ID: **L63937**

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228936													
WG228936PBW	PBW	07/24/07 14:00				U	mg/L		-20	20			
WG228936LCSW	LCSW	07/24/07 14:01	PCN27690	260		294	mg/L	113.1	80	120			
L63937-07DUP	DUP	07/24/07 14:15			340	340	mg/L				0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05219	mg/L	104.4	90	110			
WG228886ICB	ICB	07/24/07 1:04				U	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05127	mg/L	102.5	85	115			
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.1	.0008	.09786	mg/L	97.1	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.1	.0008	.09728	mg/L	96.5	70	130	0.59	20	

WG229071

WG229071ICV	ICV	07/26/07 9:11	MS070607-2	.05		.05349	mg/L	107	90	110			
WG229071ICB	ICB	07/26/07 9:17				.00016	mg/L		-0.0003	0.0003			
WG229071LFB	LFB	07/26/07 9:23	MS070712-3	.05		.05262	mg/L	105.2	85	115			
L63921-01AS	AS	07/26/07 9:35	MS070712-3	.5	.005	.5259	mg/L	104.2	70	130			
L63921-01ASD	ASD	07/26/07 9:41	MS070712-3	.5	.005	.5258	mg/L	104.2	70	130	0.02	20	
L63937-07AS	AS	07/26/07 10:58	MS070712-3	.5	U	.5164	mg/L	103.3	70	130			
L63937-07ASD	ASD	07/26/07 11:04	MS070712-3	.5	U	.5294	mg/L	105.9	70	130	2.49	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	100		100.82	mg/L	100.8	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.9	0.9			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	98.21624		101.73	mg/L	103.6	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	98.21624	64.5	161.58	mg/L	98.8	85	115			
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	98.21624	64.5	160.16	mg/L	97.4	85	115	0.88	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229201													
WG229201PBW	PBW	07/27/07 13:30				U	mg/L		-30	30			
WG229201LCSW	LCSW	07/27/07 13:32	WC070705-2	100		97	mg/L	97	80	120			
L63945-05DUP	DUP	07/27/07 14:01			90	92	mg/L				2.2	20	RA
WG229462													
WG229462PBW	PBW	08/01/07 14:21				U	mg/L		-30	30			
WG229462LCSW	LCSW	08/01/07 14:24	WC070705-2	100		103	mg/L	103	80	120			
L63937-01DUP	DUP	08/01/07 15:08			1650	1622	mg/L				1.7	20	
L63974-06DUP	DUP	08/01/07 15:51			240	226	mg/L				6	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63937**

Project ID:

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228886													
WG228886ICV	ICV	07/24/07 0:58	MS070607-2	.05		.05452	mg/L	109	90	110			
WG228886ICB	ICB	07/24/07 1:04				.00012	mg/L		-0.0003	0.0003			
WG228886LFB	LFB	07/24/07 1:09	MS070712-3	.05		.05303	mg/L	106.1	85	115			
L63916-05AS	AS	07/24/07 2:40	MS070712-3	.1	U	.10958	mg/L	109.6	70	130			
L63916-05ASD	ASD	07/24/07 2:45	MS070712-3	.1	U	.10794	mg/L	107.9	70	130	1.51	20	

WG228946

WG228946ICV	ICV	07/25/07 10:35	MS070607-2	.05		.05439	mg/L	108.8	90	110			
WG228946ICB	ICB	07/25/07 10:41				U	mg/L		-0.0003	0.0003			
WG228946LFB	LFB	07/25/07 10:47	MS070712-3	.05		.0516	mg/L	103.2	85	115			
L63921-01AS	AS	07/25/07 10:59	MS070712-3	.1	.0005	.10788	mg/L	107.4	70	130			
L63921-01ASD	ASD	07/25/07 11:06	MS070712-3	.1	.0005	.11028	mg/L	109.8	70	130	2.2	20	
L63937-05AS	AS	07/25/07 12:26	MS070712-3	.05	U	.05391	mg/L	107.8	70	130			
L63937-05ASD	ASD	07/25/07 12:32	MS070712-3	.05	U	.05311	mg/L	106.2	70	130	1.5	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229376													
WG229376ICV	ICV	08/01/07 1:24	II070725-7	2		1.976	mg/L	98.8	95	105			
WG229376ICB	ICB	08/01/07 1:28				U	mg/L		-0.03	0.03			
WG229376LFB	LFB	08/01/07 1:42	II070725-3	.5		.533	mg/L	106.6	85	115			
L63937-04AS	AS	08/01/07 2:54	II070725-3	.5	U	.596	mg/L	119.2	85	115			MA
L63937-04ASD	ASD	08/01/07 2:58	II070725-3	.5	U	.561	mg/L	112.2	85	115	6.05	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63937**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63937-01	WG228886	Antimony, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
	WG229465	Nickel, dissolved	M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG229071	Selenium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
	WG229376	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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228851	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).
L63937-02	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
	WG229465	Nickel, dissolved	M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG229376	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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	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).
	WG228851	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).

Phelps Dodge SierritaACZ Project ID: **L63937**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63937-03	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
	WG229465	Nickel, dissolved	M200.7 ICP	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG229376	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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	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).
	WG228851	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).
L63937-04	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
		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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	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).
	WG228851	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63937**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63937-05	WG228886	Antimony, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229376	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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	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).
	WG228851	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).
L63937-06	WG228886	Antimony, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229376	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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	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).
	WG229201	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).
	WG228851	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).

Phelps Dodge SierritaACZ Project ID: **L63937**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63937-07	WG228886	Antimony, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			M200.8 ICP-MS	N1	See Case Narrative.
	WG229376	Chromium, 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.
		Iron, 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.
		Manganese, 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.
	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229376	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.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229130	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).
	WG229201	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).
	WG228851	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).
L63937-08	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L63937**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita

ACZ Project ID: L63937
Date Received: 7/19/2007
Received By:
Date Printed: 7/20/2007

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

Sample 2- 1/3 had headspace

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

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1633		4.2	15

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

Notes

Phelps Dodge Sierrita

ACZ Project ID: L63937
Date Received: 7/19/2007
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
L63937-01	MH-11		Y		Y							☐
L63937-02	MH-13A		Y		Y							☐
L63937-03	MH-13B		Y		Y							☐
L63937-04	MH-13C		Y		Y							☐
L63937-05	S-3		Y		Y							☐
L63937-06	S-1		Y		Y							☐
L63937-07	S-2		Y		Y							☐
L63937-08	TB061307-17									X		☐
L63937-09	TB061307-03									X		☐

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: _____

163937

ACZ Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Billy Dorris
 Company: Phelps Dodge Sierrita
 E-mail: Billy-Dorris@FME.com

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

Copy of Report to:

Name: Jim Norris
 Company: Hydro Geo Chem

E-mail: jimm@hginc.com
 Telephone: 520-293-1500 Ext 112

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 #:
 Reporting state for compliance testing:
 Sampler's Name:
 Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION	DATE:TIME	Matrix																		
MH-11	7-17-07/14:21	GW	8																	
MH-13A	7-17-07/12:32	GW	8																	
MH-13B	7-17-07/14:12	GW	8																	
MH-13C	7-17-07/11:55	GW	8																	
S-3	7-17-07/8:30	GW	8																	
S-1	7-18-07/9:45	GW	8																	
S-2	7-18-07/10:15	GW	8																	

Ambient Suite

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

REMARKS

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>7-18-07/15:00</u>	<u>KL</u>	<u>7-19-07/8:54</u>

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-623991

ACZ Sample ID: **L63940-02**

Date Sampled: 07/18/07 08:12

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	POI	Date	Analyst
Sulfate	300.0 - Ion Chromatography	121			mg/L	5	30	07/27/07 14:01	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-623982

ACZ Sample ID: **L63940-04**

Date Sampled: 07/18/07 08:35

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XC	Units	MDL	POL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	125			mg/L	5	30	07/27/07 14:37	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-623994

ACZ Sample ID: **L63940-06**

Date Sampled: 07/18/07 08:55

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	115			mg/L	5	30	07/27/07 15:13	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-624013

ACZ Sample ID: **L63940-08**

Date Sampled: 07/18/07 09:40

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	112			mg/L	3	10	07/27/07 20:11	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-624010

ACZ Sample ID: **L63940-10**

Date Sampled: 07/18/07 10:05

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	43			mg/L	3	10	07/27/07 21:24	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-624028

ACZ Sample ID: **L63940-12**

Date Sampled: 07/18/07 10:45

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XC	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	65			mg/L	3	10	07/27/07 22:00	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-624024

ACZ Sample ID: **L63940-14**

Date Sampled: 07/18/07 11:10

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XO	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	95			mg/L	3	10	07/27/07 22:54	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-624025

ACZ Sample ID: **L63940-16**

Date Sampled: 07/18/07 11:50

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	72			mg/L	5	30	07/27/07 23:49	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-624026

ACZ Sample ID: **L63940-18**

Date Sampled: 07/18/07 12:15

Date Received: 07/19/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	77			mg/L	3	10	07/28/07 1:01	jag

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: TB071807

ACZ Sample ID: **L63940-20**

Date Sampled: 07/18/07 00:00

Date Received: 07/19/07

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	07/30/07 18:25	jag

Arizona license number: AZ0102

ACZ Laboratories, Inc.

L63940

CHAIN of CUSTODY

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

Report to:

Name: Richard S. Walden
 Company: Farmers Investment Co.
 E-mail: RSW@greenvallypeacans.com

Address: P.O. Box 7
Sahuarita, AZ 85629
 Telephone: 520-879-4729

Copy of Report to:

Name: John (Jack) Miller
 Company: Farmers Investment Co.

E-mail:
 Telephone: 520-741-2852

Invoice to:

Name: Ned Hall
 Company: Phelps Dodge, Sierrita Inc
 E-mail: Nedhall@FMT.COM

Address: 6200 W. Duval Mine Rd.
P.O. Box 527, Green Valley AZ 85627
 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 #: Sierrita ShortProject/PO #: 070325Reporting state for compliance testing: AZSampler's Name: Mark Arneson / Johanna GutierrezAre any samples NRC licensable material? NO

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca, Mg, Na, K	Alk, TDS, SO ₄	Cl ⁻ , F ⁻ , NO ₃ , NO ₂	SO ₄	PH	EC	Temp
FGW-623991	07/18/07 8:12am		2	X	X			7.31	696	25.8
UGW-623991	07/18/07 8:12am		1				X	7.31	696	25.8
FGW-623982	07/18/07 8:35am		2	X	X			8.57	565	38.7
UGW-623982	07/18/07 8:35am		1				X	8.57	565	38.7
FGW-623994	07/18/07 8:55am		2	X	X			7.46	694	26.0
UGW-623994	07/18/07 8:55am		1				X	7.46	694	26.0
FGW-624013	07/18/07 9:40am		2	X	X			7.48	651	24.1
UGW-624013	07/18/07 9:40am		1				X	7.48	651	24.1
FGW-624010	07/18/07 10:05am		2	X	X			7.65	577	25.7
UGW-624010	07/18/07 10:05am		1				X	7.65	577	25.7

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

REMARKS

FGW = Filtered Groundwater Sample
 UGW = Unfilter Groundwater Sample
 EOB = Equipment blank
 TB = Trip Blank

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Johanna Gutierrez 2:00pm 07/18/07 2:00pm Amc 7/18/07 8:50

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Same as Page 1

Company:

E-mail:

Address:

Telephone:

Copy of Report to:

Name:

Company:

E-mail:

Telephone:

Invoice to:

Name:

Company:

E-mail:

Address:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☒

NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: Sierra Short

Project/PO #: 030325

Reporting state for compliance testing: AZ

Sampler's Name: Mark Arneson / Johanna Sch.

Are any samples NRC licensable material? NO

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca, Mg, Na, K	Al, Fe, Mn, Zn, Cu, Pb, Cd, Ni, Cr, Hg, As, Se, Mo, V, Co, Ni, NO ₃	SO ₄	PH	EC	Temp
F4W-605098	07-18-07 10:45am	2		X	X		7.30	816	23.2
U4W-605098	07-18-07 10:45am	1				X	7.30	816	23.2
F4W-624024	07-18-07 11:10am	2		X	X		7.56	623	23.7
U4W-624024	07-18-07 11:10am	1				X	7.56	623	23.7
F4W-624025	07-18-07 11:50am	2		X	X		7.50	604	20.9
U4W-624025	07-18-07 11:50am	1				X	7.50	604	20.9
F4W-624026	07-18-07 12:15	2		X	X		7.56	589	23.6
U4W-624026	07-18-07 12:15	1				X	7.56	589	23.6
EQB071807	07-18-07	2		X	X		—	—	—
TB071807	07-18-07	1				X	—	—	—

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

REMARKS

Same as Page 1.

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Johanna Schumacher 07/18/07 2:00 PM JHC 7-19-07 8:50

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

August 14, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L64027 - SHORT

Bill Dorris:

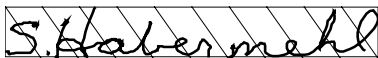
Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 24, 2007. This project was assigned to ACZ's project number, L64027. Please reference this number in all future inquiries.

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 11.0. The enclosed results relate only to the samples received under L64027. 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.





Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-12

ACZ Sample ID: **L64027-01**

Date Sampled: 07/20/07 13:45

Date Received: 07/24/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	374			mg/L	0.4	2	08/04/07 17:51	djt
Magnesium, dissolved	M200.7 ICP	75.7			mg/L	0.4	2	08/04/07 17:51	djt
Potassium, dissolved	M200.7 ICP	9.6			mg/L	0.6	3	08/06/07 14:49	msh
Sodium, dissolved	M200.7 ICP	83.1			mg/L	0.6	3	08/06/07 14:49	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		104			mg/L	2	20	07/26/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Total Alkalinity		104			mg/L	2	20	07/26/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.3			%			08/14/07 0:00	calc
Sum of Anions		28.6			meq/L	0.1	0.5	08/14/07 0:00	calc
Sum of Cations		28.8			meq/L	0.1	0.5	08/14/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	128		*	mg/L	2	10	07/30/07 16:26	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/02/07 14:35	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.92		*	mg/L	0.02	0.1	08/04/07 15:18	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2150			mg/L	10	20	07/26/07 17:19	kmc
Sulfate	SM4500 SO ₄ -D	1090			mg/L	10	50	08/06/07 12:45	jlf
TDS (calculated)	Calculation	1820			mg/L	10	50	08/14/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.18						08/14/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-25A

ACZ Sample ID: **L64027-02**

Date Sampled: 07/20/07 10:47

Date Received: 07/24/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	34.0			mg/L	0.2	1	08/06/07 14:52	msh
Magnesium, dissolved	M200.7 ICP	8.8			mg/L	0.2	1	08/06/07 14:52	msh
Potassium, dissolved	M200.7 ICP	2.4			mg/L	0.3	2	08/06/07 14:52	msh
Sodium, dissolved	M200.7 ICP	37.0			mg/L	0.3	2	08/06/07 14:52	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		161			mg/L	2	20	07/26/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Total Alkalinity		161			mg/L	2	20	07/26/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		9.3			%			08/14/07 0:00	calc
Sum of Anions		3.4			meq/L	0.1	0.5	08/14/07 0:00	calc
Sum of Cations		4.1			meq/L	0.1	0.5	08/14/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	9		*	mg/L	1	5	07/30/07 16:16	aml/jag
Fluoride	SM4500F-C	0.4	B	*	mg/L	0.1	0.5	08/02/07 14:37	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.28		*	mg/L	0.02	0.1	08/04/07 15:19	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	230			mg/L	10	20	07/26/07 17:20	kmc
Sulfate	SM4500 SO ₄ -D		U		mg/L	10	50	08/06/07 12:47	jlf
TDS (calculated)	Calculation	188			mg/L	10	50	08/14/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.22						08/14/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-25B

ACZ Sample ID: **L64027-03**

Date Sampled: 07/20/07 10:10

Date Received: 07/24/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	551			mg/L	0.4	2	08/06/07 14:56	msh
Magnesium, dissolved	M200.7 ICP	125			mg/L	0.4	2	08/06/07 14:56	msh
Potassium, dissolved	M200.7 ICP	11.3			mg/L	0.6	3	08/06/07 14:56	msh
Sodium, dissolved	M200.7 ICP	107			mg/L	0.6	3	08/06/07 14:56	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		93			mg/L	2	20	07/26/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Total Alkalinity		93			mg/L	2	20	07/26/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.7			%			08/14/07 0:00	calc
Sum of Anions		42.2			meq/L	0.1	0.5	08/14/07 0:00	calc
Sum of Cations		42.8			meq/L	0.1	0.5	08/14/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	121		*	mg/L	2	10	07/30/07 16:27	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/02/07 15:07	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.07			mg/L	0.04	0.2	08/04/07 16:05	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2910			mg/L	10	20	07/26/07 17:22	kmc
Sulfate	SM4500 SO ₄ -D	1760			mg/L	10	50	08/06/07 12:49	jlf
TDS (calculated)	Calculation	2730			mg/L	10	50	08/14/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						08/14/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-25C

ACZ Sample ID: **L64027-04**

Date Sampled: 07/20/07 09:38

Date Received: 07/24/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	420			mg/L	0.4	2	08/06/07 14:59	msh
Magnesium, dissolved	M200.7 ICP	97.4			mg/L	0.4	2	08/06/07 14:59	msh
Potassium, dissolved	M200.7 ICP	11.9			mg/L	0.6	3	08/06/07 14:59	msh
Sodium, dissolved	M200.7 ICP	103			mg/L	0.6	3	08/06/07 14:59	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		99			mg/L	2	20	07/26/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/26/07 0:00	lcp/jlf
Total Alkalinity		99			mg/L	2	20	07/26/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.8			%			08/14/07 0:00	calc
Sum of Anions		31.3			meq/L	0.1	0.5	08/14/07 0:00	calc
Sum of Cations		33.8			meq/L	0.1	0.5	08/14/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	117		*	mg/L	2	10	07/30/07 16:28	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/02/07 15:11	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.87			mg/L	0.02	0.1	08/04/07 15:23	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2300			mg/L	10	20	07/26/07 17:23	kmc
Sulfate	SM4500 SO ₄ -D	1240			mg/L	10	50	08/06/07 12:51	jlf
TDS (calculated)	Calculation	2050			mg/L	10	50	08/14/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						08/14/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64027**

Alkalinity as CaCO₃ SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229084													
WG229084PBW1	PBW	07/26/07 9:35				U	mg/L		-20	20			
WG229084LCSW2	LCSW	07/26/07 9:47	WC070723-9	820		820	mg/L	100	90	110			
WG229084PBW2	PBW	07/26/07 12:21				U	mg/L		-20	20			
WG229084LCSW5	LCSW	07/26/07 12:33	WC070723-9	820		826.9	mg/L	100.8	90	110			
WG229084PBW3	PBW	07/26/07 15:24				U	mg/L		-20	20			
WG229084LCSW8	LCSW	07/26/07 15:36	WC070723-9	820		827.7	mg/L	100.9	90	110			
L64036-01DUP	DUP	07/26/07 18:16			363	363	mg/L				0	20	
WG229084PBW4	PBW	07/26/07 18:21				U	mg/L		-20	20			
WG229084LCSW11	LCSW	07/26/07 18:34	WC070723-9	820		832.2	mg/L	101.5	90	110			
WG229084LCSW14	LCSW	07/26/07 21:34	WC070723-9	820		828.7	mg/L	101.1	90	110			

Aluminum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		2.032	mg/L	101.6	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.09	0.09			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	1		1.027	mg/L	102.7	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	1	1.4	2.49	mg/L	109	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	1	1.4	2.484	mg/L	108.4	85	115	0.24	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.02		.0191	mg/L	95.5	90	110			
WG229332ICB	ICB	07/31/07 8:40				U	mg/L		-0.0012	0.0012			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.01		.00978	mg/L	97.8	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.01	.0004	.00886	mg/L	84.6	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.01	.0004	.00918	mg/L	87.8	70	130	3.55	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.05		.05153	mg/L	103.1	90	110			
WG229332ICB	ICB	07/31/07 8:40				U	mg/L		-0.0015	0.0015			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.05		.04902	mg/L	98	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.05	.0008	.05241	mg/L	103.2	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.05	.0008	.05209	mg/L	102.6	70	130	0.61	20	

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Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		2.0778	mg/L	103.9	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.009	0.009			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	.5		.5313	mg/L	106.3	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	.5	.087	.5715	mg/L	96.9	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	.5	.087	.6221	mg/L	107	85	115	8.48	20	

WG229704

WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		2.0348	mg/L	101.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.009	0.009			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.4939	mg/L	98.8	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	.5	.086	.5884	mg/L	100.5	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	.5	.086	.6299	mg/L	108.8	85	115	6.81	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.05		.04904	mg/L	98.1	90	110			
WG229332ICB	ICB	07/31/07 8:40				U	mg/L		-0.0003	0.0003			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.05		.04643	mg/L	92.9	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.05	U	.04805	mg/L	96.1	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.05	U	.04827	mg/L	96.5	70	130	0.46	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.05		.05177	mg/L	103.5	90	110			
WG229332ICB	ICB	07/31/07 8:40				U	mg/L		-0.0003	0.0003			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.05		.04895	mg/L	97.9	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.05	U	.04916	mg/L	98.3	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.05	U	.04943	mg/L	98.9	70	130	0.55	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	100		98.79	mg/L	98.8	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.6	0.6			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	67.97008		77.86	mg/L	114.6	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	67.97008	23.9	95.51	mg/L	105.4	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	67.97008	23.9	96.81	mg/L	107.3	85	115	1.35	20	
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	100		100.65	mg/L	100.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.6	0.6			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	67.97008		72.64	mg/L	106.9	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	67.97008	24.9	99.31	mg/L	109.5	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	67.97008	24.9	98.82	mg/L	108.8	85	115	0.49	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L64027**

Chloride 325.2 / SM4500CI-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229271													
WG229271ICV	ICV	07/30/07 9:15	WI070314-1	55		54.7	mg/L	99.5	90	110			
WG229271ICB	ICB	07/30/07 9:16				U	mg/L		-3	3			
WG229312													
WG229312ICV	ICV	07/30/07 15:36	WI070314-1	55		59.8	mg/L	108.7	90	110			
WG229312ICB	ICB	07/30/07 15:36				U	mg/L		-3	3			
WG229312LFB1	LFB	07/30/07 15:37	WI070712-1	30		32	mg/L	106.7	90	110			
WG229312LFB2	LFB	07/30/07 16:06	WI070712-1	30		31.3	mg/L	104.3	90	110			
L64020-01AS	AS	07/30/07 16:08	WI070712-1	30	3	35.4	mg/L	108	90	110			
L64020-02DUP	DUP	07/30/07 16:10			4	3.5	mg/L				13.3	20	RA

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		1.972	mg/L	98.6	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.03	0.03			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	.5		.531	mg/L	106.2	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	.5	U	.479	mg/L	95.8	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	.5	U	.522	mg/L	104.4	85	115	8.59	20	
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.994	mg/L	99.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.513	mg/L	102.6	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	.5	U	.504	mg/L	100.8	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	.5	U	.544	mg/L	108.8	85	115	7.63	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		1.958	mg/L	97.9	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.03	0.03			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	.5		.516	mg/L	103.2	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	.5	.01	.485	mg/L	95	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	.5	.01	.527	mg/L	103.4	85	115	8.3	20	
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.947	mg/L	97.4	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.49	mg/L	98	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	.5	.01	.503	mg/L	98.6	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	.5	.01	.537	mg/L	105.4	85	115	6.54	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64027**

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229084													
WG229084LCSW1	LCSW	07/26/07 9:37	PCN27303	1408.8		1488	µmhos/cm	105.6	90	110			
WG229084LCSW4	LCSW	07/26/07 12:22	PCN27303	1408.8		1475	µmhos/cm	104.7	90	110			
WG229084LCSW7	LCSW	07/26/07 15:25	PCN27303	1408.8		1471	µmhos/cm	104.4	90	110			
L64036-01DUP	DUP	07/26/07 18:16			2040	2040	µmhos/cm				0	20	
WG229084LCSW10	LCSW	07/26/07 18:23	PCN27303	1408.8		1465	µmhos/cm	104	90	110			
WG229084LCSW13	LCSW	07/26/07 21:23	PCN27303	1408.8		1458	µmhos/cm	103.5	90	110			

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		1.979	mg/L	99	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.03	0.03			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	.5		.522	mg/L	104.4	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	.5	U	.483	mg/L	96.6	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	.5	U	.53	mg/L	106	85	115	9.28	20	

WG229704

WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.956	mg/L	97.8	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.498	mg/L	99.6	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	.5	U	.498	mg/L	99.6	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	.5	U	.536	mg/L	107.2	85	115	7.35	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229623													
WG229623ICV	ICV	08/03/07 13:17	WI070730-6	.3		.3061	mg/L	102	90	110			
WG229623ICB	ICB	08/03/07 13:18				U	mg/L		-0.015	0.015			
WG229543LRB	LRB	08/03/07 13:19				U	mg/L		-0.015	0.015			
WG229543LFB	LFB	08/03/07 13:20	WI070730-2	.2		.1824	mg/L	91.2	90	110			
L64026-01DUP	DUP	08/03/07 13:22			U	U	mg/L				0	20	RA
L64027-01LFM	LFM	08/03/07 14:00	WI070730-2	.2	U	.2271	mg/L	113.6	90	110			M1

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229512													
WG229512ICV	ICV	08/02/07 13:02	WC070724-1	2		2.15	mg/L	107.5	90	110			
WG229512ICB	ICB	08/02/07 13:09				U	mg/L		-0.3	0.3			
WG229512LFB1	LFB	08/02/07 13:15	WC070730-1	5		4.95	mg/L	99	90	110			
L64012-06AS	AS	08/02/07 14:20	WC070730-1	5	10.4	13.1	mg/L	54	90	110			M2
L64012-06DUP	DUP	08/02/07 14:25			10.4	8.99	mg/L				14.5	20	
WG229512LFB2	LFB	08/02/07 15:24	WC070730-1	5		4.91	mg/L	98.2	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64027**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		2.019	mg/L	101	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.06	0.06			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	1		1.108	mg/L	110.8	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	1	.03	1.006	mg/L	97.6	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	1	.03	1.103	mg/L	107.3	85	115	9.2	20	
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.94	mg/L	97	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.06	0.06			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	1		1	mg/L	100	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	1	.02	1.009	mg/L	98.9	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	1	.02	1.086	mg/L	106.6	85	115	7.35	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.05		.05199	mg/L	104	90	110			
WG229332ICB	ICB	07/31/07 8:40				U	mg/L		-0.0003	0.0003			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.05		.04916	mg/L	98.3	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.05	U	.04918	mg/L	98.4	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.05	U	.0497	mg/L	99.4	70	130	1.05	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	100		100.76	mg/L	100.8	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.6	0.6			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	54.96908		62.9	mg/L	114.4	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	54.96908	3.6	62.42	mg/L	107	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	54.96908	3.6	63.76	mg/L	109.4	85	115	2.12	20	
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	100		100.69	mg/L	100.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.6	0.6			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	54.96908		57.29	mg/L	104.2	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	54.96908	3.5	63.99	mg/L	110	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	54.96908	3.5	63.79	mg/L	109.7	85	115	0.31	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64027**

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		1.9473	mg/L	97.4	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.015	0.015			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	.5		.5587	mg/L	111.7	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	.5	.267	.7568	mg/L	98	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	.5	.267	.8047	mg/L	107.5	85	115	6.14	20	
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.9541	mg/L	97.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.015	0.015			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.5362	mg/L	107.2	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	.5	.269	.8003	mg/L	106.3	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	.5	.269	.8345	mg/L	113.1	85	115	4.18	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229284													
WG229284ICV	ICV	08/07/07 17:43	II070725-9	.005		.00498	mg/L	99.6	95	105			
WG229284ICB	ICB	08/07/07 17:45				U	mg/L		-0.0002	0.0002			
WG229461													
WG229461LRB	LRB	08/07/07 19:05				U	mg/L		-0.00044	0.00044			
WG229461LFB	LFB	08/07/07 19:07	II070801-2	.002		.00209	mg/L	104.5	85	115			
L64009-04LFM	LFM	08/07/07 19:46	II070801-2	.002	.0002	.00215	mg/L	97.5	85	115			
L64009-04LFMD	LFMD	08/07/07 19:48	II070801-2	.002	.0002	.00215	mg/L	97.5	85	115	0	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229790													
WG229790ICV	ICV	08/07/07 20:49	II070725-7	2		1.996	mg/L	99.8	95	105			
WG229790ICB	ICB	08/07/07 20:54				U	mg/L		-0.03	0.03			
WG229790LFB	LFB	08/07/07 21:11	II070802-2	.5		.499	mg/L	99.8	85	115			
L63976-01AS	AS	08/07/07 21:19	II070802-2	.5	U	.501	mg/L	100.2	85	115			
L63976-01ASD	ASD	08/07/07 21:23	II070802-2	.5	U	.506	mg/L	101.2	85	115	0.99	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229640													
WG229640ICV	ICV	08/04/07 17:09	II070725-7	2		1.948	mg/L	97.4	95	105			
WG229640ICB	ICB	08/04/07 17:13				U	mg/L		-0.03	0.03			
WG229640LFB	LFB	08/04/07 17:28	II070802-2	.5		.519	mg/L	103.8	85	115			
L64014-01AS	AS	08/04/07 17:36	II070802-2	.5	U	.485	mg/L	97	85	115			
L64014-01ASD	ASD	08/04/07 17:39	II070802-2	.5	U	.524	mg/L	104.8	85	115	7.73	20	
WG229790													
WG229790ICV	ICV	08/07/07 20:49	II070725-7	2		1.938	mg/L	96.9	95	105			
WG229790ICB	ICB	08/07/07 20:54				U	mg/L		-0.03	0.03			
WG229790LFB	LFB	08/07/07 21:11	II070802-2	.5		.519	mg/L	103.8	85	115			
L63976-01AS	AS	08/07/07 21:19	II070802-2	.5	.02	.513	mg/L	98.6	85	115			
L63976-01ASD	ASD	08/07/07 21:23	II070802-2	.5	.02	.51	mg/L	98	85	115	0.59	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64027**

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229667													
WG229667ICV	ICV	08/04/07 14:56	WI070609-1	2.416		2.492	mg/L	103.1	90	110			
WG229667ICB	ICB	08/04/07 14:57				U	mg/L		-0.06	0.06			
WG229667LFB1	LFB	08/04/07 15:01	WI070307-9	2		2.107	mg/L	105.4	90	110			
L63869-01AS	AS	08/04/07 15:03	WI070307-9	2	.39	2.316	mg/L	96.3	90	110			
L63869-02DUP	DUP	08/04/07 15:06			U	U	mg/L				0	20	RA
L64027-04DUP	DUP	08/04/07 15:24			1.87	1.887	mg/L				0.9	20	
WG229667LFB2	LFB	08/04/07 15:39	WI070307-9	2		2.165	mg/L	108.3	90	110			
L64027-03AS	AS	08/04/07 16:06	WI070307-9	4	2.07	6.347	mg/L	106.9	90	110			

pH (lab) M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229084													
WG229084LCSW3	LCSW	07/26/07 9:50	PCN26677	6		6.03	units	100.5	90	110			
WG229084LCSW6	LCSW	07/26/07 12:36	PCN26677	6		6.04	units	100.7	90	110			
WG229084LCSW9	LCSW	07/26/07 15:39	PCN26677	6		6.04	units	100.7	90	110			
L64036-01DUP	DUP	07/26/07 18:16			7.6	7.68	units				1	20	
WG229084LCSW12	LCSW	07/26/07 18:37	PCN26677	6		6.03	units	100.5	90	110			
WG229084LCSW15	LCSW	07/26/07 21:38	PCN26677	6		6.04	units	100.7	90	110			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	20		20.12	mg/L	100.6	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.9	0.9			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	99.76186		102.04	mg/L	102.3	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	99.76186	11.5	121.85	mg/L	110.6	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	99.76186	11.5	121.69	mg/L	110.5	85	115	0.13	20	

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229150													
WG229150PBW	PBW	07/26/07 17:00				U	mg/L		-20	20			
WG229150LCSW	LCSW	07/26/07 17:01	PCN27689	260		264	mg/L	101.5	80	120			
L64050-01DUP	DUP	07/26/07 17:29			680	680	mg/L				0	20	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.05		.0506	mg/L	101.2	90	110			
WG229332ICB	ICB	07/31/07 8:40				.0001	mg/L		-0.0003	0.0003			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.05		.04962	mg/L	99.2	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.05	.0004	.05634	mg/L	111.9	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.05	.0004	.05542	mg/L	110	70	130	1.65	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64027**

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	100		101.37	mg/L	101.4	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.9	0.9			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	98.21624		101.32	mg/L	103.2	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	98.21624	47.5	150.56	mg/L	104.9	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	98.21624	47.5	149.92	mg/L	104.3	85	115	0.43	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229706													
WG229706PBW	PBW	08/06/07 12:30				U	mg/L		-30	30			
WG229706LCSW	LCSW	08/06/07 12:32	WC070705-2	100		99	mg/L	99	80	120			
L64032-02DUP	DUP	08/06/07 12:56			1400	1383	mg/L				1.2	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229332													
WG229332ICV	ICV	07/31/07 8:35	MS070607-2	.05		.05449	mg/L	109	90	110			
WG229332ICB	ICB	07/31/07 8:40				U	mg/L		-0.0003	0.0003			
WG229332LFB	LFB	07/31/07 8:46	MS070712-3	.05		.05059	mg/L	101.2	85	115			
L64020-02AS	AS	07/31/07 10:18	MS070712-3	.05	.0001	.05065	mg/L	101.1	70	130			
L64020-02ASD	ASD	07/31/07 10:23	MS070712-3	.05	.0001	.05118	mg/L	102.2	70	130	1.04	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.974	mg/L	98.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.565	mg/L	113	85	115			
L64014-01AS	AS	08/06/07 14:36	II070802-2	.5	.16	.725	mg/L	113	85	115			
L64014-01ASD	ASD	08/06/07 14:39	II070802-2	.5	.16	.744	mg/L	116.8	85	115	2.59	20	MA

Phelps Dodge SierritaACZ Project ID: **L64027**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64027-01	WG229704	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.
	WG229312	Chloride	325.2 / 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).
	WG229623	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229512	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229667	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).
L64027-02	WG229704	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.
	WG229312	Chloride	325.2 / 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).
	WG229623	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229512	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229667	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).
L64027-03	WG229704	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.
	WG229312	Chloride	325.2 / 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).
	WG229623	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229512	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
L64027-04	WG229704	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.
	WG229312	Chloride	325.2 / 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).
	WG229623	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229512	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.

Phelps Dodge SierritaACZ Project ID: **L64027**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64027-05	WG229623	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L64027**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64027
Date Received: 7/24/2007
Received By:
Date Printed: 7/24/2007

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)
1804		4.0	14

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

Notes

Phelps Dodge Sierrita
 OJ03DL

ACZ Project ID: L64027
 Date Received: 7/24/2007
 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
L64027-01	MH-12		Y		Y							☐
L64027-02	MH-25A		Y		Y							☐
L64027-03	MH-25B		Y		Y							☐
L64027-04	MH-25C		Y		Y							☐
L64027-05	TB061307-25											☐
L64027-06	VOA TB 061307-12											☐

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: _____

LL64027



Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Bill Dorris
 Company: Phelps Dodge 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: Jim Norris
 Company: Hydro Geo Chem

E-mail: jimn@hginc.com
 Telephone: 520-293-1500 Ext 112

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 #: OJ03DL
 Reporting state for compliance testing:
 Sampler's Name:
 Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	#																		
MH-12	7-20-07/ 13:45	GW	8	} Ambient																	
MH-25A	7-20-07/ 10:47	GW	8																		
MH-25B	7-20-07/ 10:10	GW	8																		
MH-25C	7-20-07/ 9:38	GW	8																		

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

REMARKS

UPS Tracking # 1Z867 7E4 21 1000 0457

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Bill F. Dorris 7-23-07/ 15:00 JMC 7-24-07 10:20

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

August 16, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L63971 - SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2007. This project was assigned to ACZ's project number, L63971. 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 11.0. The enclosed results relate only to the samples received under L63971. 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.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: S-4

ACZ Sample ID: **L63971-01**

Date Sampled: 07/18/07 08:10

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	44.5			mg/L	0.2	1	08/01/07 0:28	djt
Magnesium, dissolved	M200.7 ICP	5.0			mg/L	0.2	1	08/01/07 0:28	djt
Potassium, dissolved	M200.7 ICP	3.1			mg/L	0.3	2	08/01/07 0:28	djt
Sodium, dissolved	M200.7 ICP	55.7			mg/L	0.3	2	08/01/07 0:28	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		150			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		150			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.0			%			08/16/07 0:00	calc
Sum of Anions		5.0			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		5.1			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	12		*	mg/L	1	5	07/27/07 15:04	aml/jag
Fluoride	SM4500F-C	0.7		*	mg/L	0.1	0.5	07/27/07 17:12	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.22			mg/L	0.02	0.1	07/27/07 19:40	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	360		*	mg/L	10	20	07/25/07 11:32	aeh
Sulfate	SM4500 SO ₄ -D	80		*	mg/L	10	50	07/27/07 15:19	kmc
TDS (calculated)	Calculation	291			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.24						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: S-5

ACZ Sample ID: **L63971-02**

Date Sampled: 07/18/07 08:50

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	52.4			mg/L	0.2	1	08/01/07 0:32	djt
Magnesium, dissolved	M200.7 ICP	6.6			mg/L	0.2	1	08/01/07 0:32	djt
Potassium, dissolved	M200.7 ICP	3.5			mg/L	0.3	2	08/01/07 0:32	djt
Sodium, dissolved	M200.7 ICP	59.2			mg/L	0.3	2	08/01/07 0:32	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		158			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		158			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		5.5			%			08/16/07 0:00	calc
Sum of Anions		5.2			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		5.8			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	12		*	mg/L	1	5	07/27/07 15:06	aml/jag
Fluoride	SM4500F-C	0.7		*	mg/L	0.1	0.5	07/27/07 17:15	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.16			mg/L	0.02	0.1	07/27/07 19:42	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	390		*	mg/L	10	20	07/25/07 11:33	aeh
Sulfate	SM4500 SO ₄ -D	80		*	mg/L	10	50	07/27/07 15:22	kmc
TDS (calculated)	Calculation	309			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.26						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: S-6

ACZ Sample ID: **L63971-03**

Date Sampled: 07/18/07 09:10

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	69.8			mg/L	0.2	1	08/01/07 0:36	djt
Magnesium, dissolved	M200.7 ICP	11.0			mg/L	0.2	1	08/01/07 0:36	djt
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	08/01/07 0:36	djt
Sodium, dissolved	M200.7 ICP	59.8			mg/L	0.3	2	08/01/07 0:36	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		184			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		184			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.2			%			08/16/07 0:00	calc
Sum of Anions		6.8			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		7.1			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	15		*	mg/L	1	5	07/27/07 15:07	aml/jag
Fluoride	SM4500F-C	1.0		*	mg/L	0.1	0.5	07/27/07 17:17	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.74			mg/L	0.02	0.1	07/27/07 19:43	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	480		*	mg/L	10	20	07/25/07 11:35	aeh
Sulfate	SM4500 SO ₄ -D	130		*	mg/L	10	50	07/27/07 15:26	kmc
TDS (calculated)	Calculation	400			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.20						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-4

ACZ Sample ID: **L63971-04**

Date Sampled: 07/18/07 12:40

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	512			mg/L	0.4	2	08/01/07 5:10	djt
Magnesium, dissolved	M200.7 ICP	88.7			mg/L	0.4	2	08/01/07 5:10	djt
Potassium, dissolved	M200.7 ICP	9			mg/L	2	8	08/02/07 22:53	wfg
Sodium, dissolved	M200.7 ICP	165			mg/L	0.6	3	08/01/07 5:10	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		148			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		148			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.1			%			08/16/07 0:00	calc
Sum of Anions		37.2			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		40.4			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	135		*	mg/L	2	10	07/27/07 15:42	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/27/07 17:20	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.84			mg/L	0.02	0.1	07/27/07 19:44	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2910		*	mg/L	10	20	07/25/07 11:36	aeh
Sulfate	SM4500 SO ₄ -D	1450		*	mg/L	10	50	07/27/07 15:29	kmc
TDS (calculated)	Calculation	2450			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.19						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-5

ACZ Sample ID: **L63971-05**

Date Sampled: 07/18/07 13:40

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	545			mg/L	0.4	2	08/01/07 5:14	djt
Magnesium, dissolved	M200.7 ICP	96.4			mg/L	0.4	2	08/01/07 5:14	djt
Potassium, dissolved	M200.7 ICP	8			mg/L	2	8	08/02/07 22:57	wfg
Sodium, dissolved	M200.7 ICP	179			mg/L	0.6	3	08/01/07 5:14	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		167			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		167			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.1			%			08/16/07 0:00	calc
Sum of Anions		41.4			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		43.2			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	151		*	mg/L	2	10	07/27/07 15:43	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/28/07 12:26	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.97			mg/L	0.02	0.1	07/27/07 19:46	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3140		*	mg/L	10	20	07/25/07 11:37	aeh
Sulfate	SM4500 SO ₄ -D	1610		*	mg/L	10	50	07/27/07 15:32	kmc
TDS (calculated)	Calculation	2690			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.17						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: ST-7

ACZ Sample ID: **L63971-06**

Date Sampled: 07/18/07 08:15

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	38.2			mg/L	0.2	1	08/01/07 5:17	djt
Magnesium, dissolved	M200.7 ICP	3.8			mg/L	0.2	1	08/01/07 5:17	djt
Potassium, dissolved	M200.7 ICP	3.6			mg/L	0.3	2	08/02/07 23:01	wfg
Sodium, dissolved	M200.7 ICP	43.7			mg/L	0.3	2	08/01/07 5:17	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		148			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		148			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.4			%			08/16/07 0:00	calc
Sum of Anions		4.0			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		4.2			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	7		*	mg/L	1	5	07/27/07 15:12	aml/jag
Fluoride	SM4500F-C	0.7		*	mg/L	0.1	0.5	07/28/07 12:36	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.41			mg/L	0.02	0.1	07/27/07 19:49	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	280		*	mg/L	10	20	07/25/07 11:39	aeh
Sulfate	SM4500 SO ₄ -D	40	B	*	mg/L	10	50	07/27/07 15:35	kmc
TDS (calculated)	Calculation	226			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.24						08/16/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851PBW1	PBW	07/23/07 15:30				U	mg/L		-20	20			
WG228851LCSW2	LCSW	07/23/07 15:42	WC070705-3	820		820.8	mg/L	100.1	90	110			
WG228851PBW2	PBW	07/23/07 19:00				U	mg/L		-20	20			
WG228851LCSW5	LCSW	07/23/07 19:13	WC070705-3	820		822.6	mg/L	100.3	90	110			
WG228851PBW3	PBW	07/23/07 21:12				U	mg/L		-20	20			
WG228851LCSW8	LCSW	07/23/07 21:23	WC070705-3	820		829.8	mg/L	101.2	90	110			
L63975-01DUP	DUP	07/23/07 23:55			96	97.2	mg/L				1.2	20	
WG228851PBW4	PBW	07/24/07 0:01				U	mg/L		-20	20			
WG228851LCSW11	LCSW	07/24/07 0:13	WC070705-3	820		828.2	mg/L	101	90	110			
WG228851LCSW14	LCSW	07/24/07 3:02	WC070705-3	820		829.6	mg/L	101.2	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.979	mg/L	99	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.09	0.09			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	1		1.051	mg/L	105.1	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	1	U	1.065	mg/L	106.5	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	1	U	1.068	mg/L	106.8	85	115	0.28	20	
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.027	mg/L	101.4	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.09	0.09			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	1		1.103	mg/L	110.3	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	1	U	1.126	mg/L	112.6	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	1	U	1.124	mg/L	112.4	85	115	0.18	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.02		.02079	mg/L	104	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0012	0.0012			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.01		.01135	mg/L	113.5	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.02	.001	.01976	mg/L	93.8	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.02	.001	.02004	mg/L	95.2	70	130	1.41	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.02	.0091	.02816	mg/L	95.3	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.02	.0091	.02792	mg/L	94.1	70	130	0.86	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05077	mg/L	101.5	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0015	0.0015			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.0513	mg/L	102.6	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	.002	.1117	mg/L	109.7	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	.002	.1098	mg/L	107.8	70	130	1.72	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.1	.001	.1071	mg/L	106.1	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.1	.001	.1055	mg/L	104.5	70	130	1.51	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		2.0989	mg/L	104.9	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.009	0.009			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.5143	mg/L	102.9	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	.03	.5544	mg/L	104.9	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	.03	.554	mg/L	104.8	85	115	0.07	20	

WG229537

WG229537ICV	ICV	08/02/07 20:41	II070725-7	2		2.1035	mg/L	105.2	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.009	0.009			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	.5		.518	mg/L	103.6	85	115			
L63968-05AS	AS	08/02/07 22:10	II070802-2	2.5	.06	2.7	mg/L	105.6	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	2.5	.06	2.72	mg/L	106.4	85	115	0.74	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.04806	mg/L	96.1	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.04797	mg/L	95.9	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	U	.09998	mg/L	100	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	U	.09874	mg/L	98.7	70	130	1.25	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.1	U	.09784	mg/L	97.8	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.1	U	.09632	mg/L	96.3	70	130	1.57	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05043	mg/L	100.9	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05046	mg/L	100.9	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	U	.10284	mg/L	102.8	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	U	.10156	mg/L	101.6	70	130	1.25	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.1	U	.1015	mg/L	101.5	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.1	U	.09962	mg/L	99.6	70	130	1.87	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	100		98.12	mg/L	98.1	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.6	0.6			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	67.97008		70.58	mg/L	103.8	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	67.97008	66.9	133.15	mg/L	97.5	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	67.97008	66.9	133.96	mg/L	98.7	85	115	0.61	20	

WG229388

WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		101.03	mg/L	101	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.6	0.6			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	67.97008		74.38	mg/L	109.4	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	67.97008	38.2	108.91	mg/L	104	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	67.97008	38.2	109.34	mg/L	104.7	85	115	0.39	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229173													
WG229173ICV	ICV	07/27/07 9:29	WI070314-1	55		54.7	mg/L	99.5	90	110			
WG229173ICB	ICB	07/27/07 9:30				U	mg/L		-3	3			
WG229217													
WG229217ICV	ICV	07/27/07 14:45	WI070314-1	55		51.1	mg/L	92.9	90	110			
WG229217ICB	ICB	07/27/07 14:46				U	mg/L		-3	3			
WG229217LFB1	LFB	07/27/07 14:47	WI070712-1	30		28	mg/L	93.3	90	110			
L63971-01DUP	DUP	07/27/07 15:05			12	11.7	mg/L				2.5	20	
WG229217LFB2	LFB	07/27/07 15:15	WI070712-1	30		28.3	mg/L	94.3	90	110			
L63970-05AS	AS	07/27/07 15:41	WI070712-1	60	119	158.1	mg/L	65.2	90	110			M2

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.935	mg/L	96.8	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.03	0.03			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.49	mg/L	98	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	U	.492	mg/L	98.4	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	U	.491	mg/L	98.2	85	115	0.2	20	
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		2.034	mg/L	101.7	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.525	mg/L	105	85	115			
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	U	2.537	mg/L	101.5	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	U	2.553	mg/L	102.1	85	115	0.63	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.93	mg/L	96.5	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.03	0.03			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.485	mg/L	97	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	U	.483	mg/L	96.6	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	U	.488	mg/L	97.6	85	115	1.03	20	

WG229388

WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.939	mg/L	97	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.514	mg/L	102.8	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	U	.502	mg/L	100.4	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	U	.519	mg/L	103.8	85	115	3.33	20	

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW1	LCSW	07/23/07 15:32	PCN27303	1408.8		1493	µmhos/crr	106	90	110			
WG228851LCSW4	LCSW	07/23/07 19:02	PCN27303	1408.8		1502	µmhos/crr	106.6	90	110			
WG228851LCSW7	LCSW	07/23/07 21:14	PCN27303	1408.8		1492	µmhos/crr	105.9	90	110			
L63975-01DUP	DUP	07/23/07 23:55			576	578	µmhos/crr				0.3	20	
WG228851LCSW10	LCSW	07/24/07 0:03	PCN27303	1408.8		1492	µmhos/crr	105.9	90	110			
WG228851LCSW13	LCSW	07/24/07 2:52	PCN27303	1408.8		1484	µmhos/crr	105.3	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.922	mg/L	96.1	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.03	0.03			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.489	mg/L	97.8	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	U	.494	mg/L	98.8	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	U	.494	mg/L	98.8	85	115	0	20	

WG229388

WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.944	mg/L	97.2	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.504	mg/L	100.8	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	U	.513	mg/L	102.6	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	U	.52	mg/L	104	85	115	1.36	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229243													
WG229243ICV	ICV	07/28/07 16:22	WI070714-6	.3		.3176	mg/L	105.9	90	110			
WG229243ICB	ICB	07/28/07 16:23				U	mg/L		-0.015	0.015			
WG229083LRB	LRB	07/28/07 16:24				U	mg/L		-0.015	0.015			
WG229083LFB	LFB	07/28/07 16:25	WI070714-2	.2		.1876	mg/L	93.8	90	110			
L63954-04DUP	DUP	07/28/07 16:26			U	U	mg/L				0	20	RA
L63968-04LFM	LFM	07/28/07 16:28	WI070714-2	.2	U	.1573	mg/L	78.7	90	110			M2
L63971-03DUP	DUP	07/28/07 16:39			U	U	mg/L				0	20	RA
L63971-04LFM	LFM	07/28/07 16:40	WI070714-2	.2	U	.1838	mg/L	91.9	90	110			
WG229246													
WG229246ICV	ICV	07/28/07 17:20	WI070714-6	.3		.3088	mg/L	102.9	90	110			
WG229246ICB	ICB	07/28/07 17:21				U	mg/L		-0.015	0.015			
WG229096LRB	LRB	07/28/07 17:22				U	mg/L		-0.015	0.015			
WG229096LFB	LFB	07/28/07 17:23	WI070714-2	.2		.1892	mg/L	94.6	90	110			
L63968-01DUP	DUP	07/28/07 17:25			.036	.039	mg/L				8	20	RA
L63968-02LFM	LFM	07/28/07 17:27	WI070714-2	.2	.067	.2596	mg/L	96.3	90	110			

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229194													
WG229194ICV	ICV	07/27/07 13:00	WC070724-1	2		2.06	mg/L	103	90	110			
WG229194ICB	ICB	07/27/07 13:07				U	mg/L		-0.3	0.3			
WG229194LFB1	LFB	07/27/07 13:12	WC070504-3	5		5.02	mg/L	100.4	90	110			
WG229194LFB2	LFB	07/27/07 15:30	WC070504-3	5		4.88	mg/L	97.6	90	110			
L63970-02AS	AS	07/27/07 16:58	WC070504-3	5	.2	4.95	mg/L	95	90	110			
L63970-02DUP	DUP	07/27/07 17:00			.2	.22	mg/L				9.5	20	RA
WG229238													
WG229238ICV	ICV	07/28/07 12:11	WC070724-1	2		2.05	mg/L	102.5	90	110			
WG229238ICB	ICB	07/28/07 12:18				U	mg/L		-0.3	0.3			
WG229238LFB1	LFB	07/28/07 12:23	WC070504-3	5		4.91	mg/L	98.2	90	110			
L63971-05AS	AS	07/28/07 12:30	WC070504-3	5	.2	4.18	mg/L	79.6	90	110			M2
L63971-05DUP	DUP	07/28/07 12:33			.2	.2	mg/L				0	20	RA
WG229238LFB2	LFB	07/28/07 14:07	WC070504-3	5		4.81	mg/L	96.2	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.964	mg/L	98.2	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.06	0.06			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	1		1.001	mg/L	100.1	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	1	U	1.003	mg/L	100.3	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	1	U	1.012	mg/L	101.2	85	115	0.89	20	
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.003	mg/L	100.2	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.06	0.06			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	1		1.068	mg/L	106.8	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	1	U	1.037	mg/L	103.7	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	1	U	1.052	mg/L	105.2	85	115	1.44	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05165	mg/L	103.3	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05068	mg/L	101.4	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	U	.10532	mg/L	105.3	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	U	.10216	mg/L	102.2	70	130	3.05	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.1	U	.1048	mg/L	104.8	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.1	U	.1027	mg/L	102.7	70	130	2.02	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	100		99.43	mg/L	99.4	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.6	0.6			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	54.96908		56.53	mg/L	102.8	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	54.96908	82.4	135.42	mg/L	96.5	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	54.96908	82.4	136.14	mg/L	97.8	85	115	0.53	20	
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		100.75	mg/L	100.8	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.6	0.6			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	54.96908		59.52	mg/L	108.3	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	54.96908	3.8	63.04	mg/L	107.8	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	54.96908	3.8	62.91	mg/L	107.5	85	115	0.21	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.9201	mg/L	96	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.015	0.015			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.5182	mg/L	103.6	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	U	.5145	mg/L	102.9	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	U	.5168	mg/L	103.4	85	115	0.45	20	

WG229388

WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.9713	mg/L	98.6	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.015	0.015			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.5568	mg/L	111.4	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	.011	.554	mg/L	108.6	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	.011	.5622	mg/L	110.2	85	115	1.47	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229211													
WG229211ICV	ICV	08/07/07 13:24	II070725-9	.005		.00483	mg/L	96.6	95	105			
WG229211ICB	ICB	08/07/07 13:26				U	mg/L		-0.0002	0.0002			
WG229211LRB	LRB	08/07/07 13:29				U	mg/L		-0.00044	0.00044			
WG229211LFB	LFB	08/07/07 13:31	II070720-2	.002		.00214	mg/L	107	85	115			
L63970-02LFM	LFM	08/07/07 14:06	II070720-2	.002	U	.0024	mg/L	120	85	115			MA
L63970-02LFMD	LFMD	08/07/07 14:08	II070720-2	.002	U	.00228	mg/L	114	85	115	5.13	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.978	mg/L	98.9	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.03	0.03			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.507	mg/L	101.4	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	.04	.528	mg/L	97.6	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	.04	.532	mg/L	98.4	85	115	0.75	20	
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		2.034	mg/L	101.7	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.528	mg/L	105.6	85	115			
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	.07	2.698	mg/L	105.1	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	.07	2.78	mg/L	108.4	85	115	2.99	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	2		1.912	mg/L	95.6	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.03	0.03			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	.5		.49	mg/L	98	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	.5	U	.491	mg/L	98.2	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	.5	U	.486	mg/L	97.2	85	115	1.02	20	

WG229537

WG229537ICV	ICV	08/02/07 20:41	II070725-7	2		1.915	mg/L	95.8	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.03	0.03			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	.5		.491	mg/L	98.2	85	115			
L63968-05AS	AS	08/02/07 22:10	II070802-2	2.5	U	2.45	mg/L	98	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	2.5	U	2.471	mg/L	98.8	85	115	0.85	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
WG229231													
WG229231ICV	ICV	07/27/07 18:01	WI070609-1	2.416		2.463	mg/L	101.9	90	110			
WG229231ICB	ICB	07/27/07 18:02				U	mg/L		-0.06	0.06			
WG229233													
WG229233ICV	ICV	07/27/07 19:04	WI070609-1	2.416		2.44	mg/L	101	90	110			
WG229233ICB	ICB	07/27/07 19:06				U	mg/L		-0.06	0.06			
WG229233LFB1	LFB	07/27/07 19:07	WI070307-9	2		2.1	mg/L	105	90	110			
L63937-02AS	AS	07/27/07 19:28	WI070307-9	2	1.2	3.247	mg/L	102.4	90	110			
L63937-03DUP	DUP	07/27/07 19:30			1.62	1.621	mg/L				0.1	20	
WG229233LFB2	LFB	07/27/07 19:45	WI070307-9	2		1.928	mg/L	96.4	90	110			
L63971-05AS	AS	07/27/07 19:48	WI070307-9	2	.97	2.896	mg/L	96.3	90	110			
L63971-06DUP	DUP	07/27/07 19:50			.41	.408	mg/L				0.5	20	

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW3	LCSW	07/23/07 15:44	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW6	LCSW	07/23/07 19:16	PCN26677	6		6.04	units	100.7	90	110			
WG228851LCSW9	LCSW	07/23/07 21:26	PCN26677	6		6.03	units	100.5	90	110			
L63975-01DUP	DUP	07/23/07 23:55			8.3	8.3	units				0	20	
WG228851LCSW12	LCSW	07/24/07 0:15	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW15	LCSW	07/24/07 3:06	PCN26677	6		6.03	units	100.5	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	20		20.33	mg/L	101.7	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.9	0.9			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	99.76186		104.22	mg/L	104.5	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	99.76186	1.9	112.64	mg/L	111	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	99.76186	1.9	114.15	mg/L	112.5	85	115	1.33	20	

WG229537

WG229537ICV	ICV	08/02/07 20:41	II070725-7	20		20.23	mg/L	101.2	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.9	0.9			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	99.76186		105.81	mg/L	106.1	85	115			
L63968-05AS	AS	08/02/07 22:10	II070802-2	498.8093	10	557.6	mg/L	109.8	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	498.8093	10	560.9	mg/L	110.4	85	115	0.59	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229020													
WG229020PBW	PBW	07/25/07 11:30				18	mg/L		-20	20			
WG229020LCSW	LCSW	07/25/07 11:31	PCN27690	260		306	mg/L	117.7	80	120			
L63974-04DUP	DUP	07/25/07 11:45			70	64	mg/L				9	20	RA

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05279	mg/L	105.6	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05212	mg/L	104.2	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	.0006	.1227	mg/L	122.1	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	.0006	.12224	mg/L	121.6	70	130	0.38	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.1	.0004	.11384	mg/L	113.4	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.1	.0004	.11436	mg/L	114	70	130	0.46	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229385													
WG229385ICV	ICV	07/31/07 23:21	II070725-7	100		100.57	mg/L	100.6	95	105			
WG229385ICB	ICB	07/31/07 23:25				U	mg/L		-0.9	0.9			
WG229385LFB	LFB	07/31/07 23:42	II070725-3	98.21624		101.88	mg/L	103.7	85	115			
L63815-01AS	AS	07/31/07 23:50	II070725-3	98.21624	304	387.18	mg/L	84.7	85	115			
L63815-01ASD	ASD	07/31/07 23:54	II070725-3	98.21624	304	389.68	mg/L	87.2	85	115	0.64	20	
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		101.48	mg/L	101.5	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.9	0.9			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	98.21624		105.16	mg/L	107.1	85	115			
L63971-06AS	AS	08/01/07 5:21	II070725-3	98.21624	43.7	145.66	mg/L	103.8	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	98.21624	43.7	146.47	mg/L	104.6	85	115	0.55	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

Project ID:

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229215													
WG229215PBW	PBW	07/27/07 15:00				U	mg/L		-30	30			
WG229215LCSW	LCSW	07/27/07 15:03	WC070705-2	100		95	mg/L	95	80	120			
L63971-06DUP	DUP	07/27/07 15:39			40	41	mg/L				2.5	20	RA

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05344	mg/L	106.9	90	110			
WG228954ICB	ICB	07/25/07 14:15				.00011	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05174	mg/L	103.5	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	.0002	.10784	mg/L	107.6	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	.0002	.10568	mg/L	105.5	70	130	2.02	20	
L63971-05AS	AS	07/25/07 15:54	MS070712-3	.1	U	.10776	mg/L	107.8	70	130			
L63971-05ASD	ASD	07/25/07 16:00	MS070712-3	.1	U	.10556	mg/L	105.6	70	130	2.06	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		1.986	mg/L	99.3	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.54	mg/L	108	85	115			
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	.88	3.7	mg/L	112.8	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	.88	3.714	mg/L	113.4	85	115	0.38	20	
WG229434													
WG229434ICV	ICV	08/02/07 2:42	II070725-7	2		1.972	mg/L	98.6	95	105			
WG229434ICB	ICB	08/02/07 2:46				U	mg/L		-0.03	0.03			
WG229434LFB	LFB	08/02/07 2:59	II070725-3	.5		.544	mg/L	108.8	85	115			
L63815-01AS	AS	08/02/07 3:07	II070725-3	.5	U	.544	mg/L	108.8	85	115			
L63815-01ASD	ASD	08/02/07 3:11	II070725-3	.5	U	.561	mg/L	112.2	85	115	3.08	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63971-01	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	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).
	WG229020	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229215	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).
L63971-02	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229246	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).
	WG229194	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).
	WG229020	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229215	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).
L63971-03	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	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).
	WG229194	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).
	WG229020	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229215	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63971-04	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	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).
	WG229194	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).
	WG229020	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229215	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).
L63971-05	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	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).
	WG229238	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229020	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L63971-06	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	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).
	WG229238	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229020	Residue, Filterable (TDS) @180C	160.1 / SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L63971-07	WG229215	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).
				RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L63971-07	WG229243	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63971**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63971
Date Received: 7/20/2007
Received By:
Date Printed: 7/20/2007

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

Sample 4 had headspace in 3/3 vials.

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

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1565		3.7	18

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

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63971
 Date Received: 7/20/2007
 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
L63971-01	S-4		Y		Y							☐
L63971-02	S-5		Y		Y							☐
L63971-03	S-6		Y		Y							☐
L63971-04	IW-4		Y		Y							☐
L63971-05	IW-5		Y		Y							☐
L63971-06	ST-7		Y		Y							☐
L63971-07	TB061307-30											☐
L63971-08	TB061307-06											☐

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: _____

CHAIN of CUSTODY

Report to:

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

Copy of Report to:

E-mail: jimn@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

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 #: OJ03DL
Reporting state for compliance testing:
Sampler's Name:
Are any samples NRC licensable material?

of Containers

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

S-4	7-18-07 / 8:10	GW	8
S-5	7-18-07 / 8:50	GW	8
S-6	7-18-07 / 9:10	GW	8
IW-4	7-18-07 / 12:40	GW	8
IW-5	7-18-07 / 13:40	GW	8
ST-7	7-19-07 / 8:15	GW	8

Ambient Suite

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

REMARKS

UPS Tracking # 1Z867 7E4 21 1000 0448

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	7-19-07 / 15:00	Jane 7-20-07	9:20

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

August 09, 2007

Cc: Jim Norris

Project ID: OJ03DL
ACZ Project ID: L63970 - SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2007. This project was assigned to ACZ's project number, L63970. 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 11.0. The enclosed results relate only to the samples received under L62112. 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.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-11

ACZ Sample ID: **L63970-01**

Date Sampled: 07/18/07 14:30

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	501			mg/L	0.4	2	08/01/07 4:44	djt
Magnesium, dissolved	M200.7 ICP	99.1			mg/L	0.4	2	08/01/07 4:44	djt
Potassium, dissolved	M200.7 ICP	9			mg/L	2	8	08/02/07 22:31	wfg
Sodium, dissolved	M200.7 ICP	199			mg/L	0.6	3	08/01/07 4:44	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		125			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		125			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.8			%			08/09/07 0:00	calc
Sum of Anions		42.9			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		42.2			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	114		*	mg/L	2	10	07/27/07 15:37	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/27/07 16:17	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.88			mg/L	0.02	0.1	07/27/07 23:23	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3010			mg/L	10	20	07/25/07 11:23	aeh
Sulfate	SM4500 SO ₄ -D	1770			mg/L	10	50	07/27/07 14:19	kmc
TDS (calculated)	Calculation	2770			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-22

ACZ Sample ID: **L63970-02**

Date Sampled: 07/18/07 14:10

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	532			mg/L	0.4	2	08/01/07 4:54	djt
Magnesium, dissolved	M200.7 ICP	87.8			mg/L	0.4	2	08/01/07 4:54	djt
Potassium, dissolved	M200.7 ICP	11			mg/L	2	8	08/02/07 22:36	wfg
Sodium, dissolved	M200.7 ICP	195			mg/L	0.6	3	08/01/07 4:54	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		137			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		137			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.6			%			08/09/07 0:00	calc
Sum of Anions		44.1			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		42.7			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	135		*	mg/L	2	10	07/27/07 15:38	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/27/07 16:55	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.86			mg/L	0.02	0.1	07/27/07 21:17	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3040			mg/L	10	20	07/25/07 11:25	aeh
Sulfate	SM4500 SO ₄ -D	1790			mg/L	10	50	07/27/07 14:22	kmc
TDS (calculated)	Calculation	2830			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-24

ACZ Sample ID: **L63970-03**

Date Sampled: 07/18/07 13:10

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	554			mg/L	0.4	2	08/01/07 4:58	djt
Magnesium, dissolved	M200.7 ICP	93.8			mg/L	0.4	2	08/01/07 4:58	djt
Potassium, dissolved	M200.7 ICP	7	B		mg/L	2	8	08/02/07 22:40	wfg
Sodium, dissolved	M200.7 ICP	171			mg/L	0.6	3	08/01/07 4:58	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		147			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		147			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.7			%			08/09/07 0:00	calc
Sum of Anions		44.6			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		43.1			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	144		*	mg/L	2	10	07/27/07 15:39	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/27/07 17:03	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.62			mg/L	0.02	0.1	07/27/07 21:18	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3040			mg/L	10	20	07/25/07 11:26	aeh
Sulfate	SM4500 SO ₄ -D	1790			mg/L	10	50	07/27/07 14:24	kmc
TDS (calculated)	Calculation	2850			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03DL
Sample ID: DUP071907AACZ Sample ID: **L63970-04**
Date Sampled: 07/19/07 00:00
Date Received: 07/20/07
Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	223			mg/L	0.2	1	08/01/07 5:02	djt
Magnesium, dissolved	M200.7 ICP	49.7			mg/L	0.2	1	08/01/07 5:02	djt
Potassium, dissolved	M200.7 ICP	10.6			mg/L	0.6	3	08/02/07 22:44	wfg
Sodium, dissolved	M200.7 ICP	99.2			mg/L	0.3	2	08/01/07 5:02	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		88			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		88			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.5			%			08/09/07 0:00	calc
Sum of Anions		19.3			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		19.9			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	71		*	mg/L	1	5	07/27/07 15:01	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/27/07 17:06	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.10			mg/L	0.02	0.1	07/27/07 23:29	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1410			mg/L	10	20	07/25/07 11:28	aeh
Sulfate	SM4500 SO ₄ -D	740			mg/L	10	50	07/27/07 14:27	kmc
TDS (calculated)	Calculation	1250			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/09/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge SierritaProject ID: OJ03DL
Sample ID: DUP071907BACZ Sample ID: **L63970-05**
Date Sampled: 07/19/07 00:00
Date Received: 07/20/07
Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	508			mg/L	0.4	2	08/01/07 5:06	djt
Magnesium, dissolved	M200.7 ICP	114			mg/L	0.4	2	08/01/07 5:06	djt
Potassium, dissolved	M200.7 ICP	11			mg/L	2	8	08/02/07 22:48	wfg
Sodium, dissolved	M200.7 ICP	95.5			mg/L	0.6	3	08/01/07 5:06	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		99			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		99			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.2			%			08/09/07 0:00	calc
Sum of Anions		38.3			meq/L	0.1	0.5	08/09/07 0:00	calc
Sum of Cations		39.2			meq/L	0.1	0.5	08/09/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	119		*	mg/L	2	10	07/27/07 15:40	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/27/07 17:09	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	3.27			mg/L	0.02	0.1	07/27/07 21:19	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2810			mg/L	10	20	07/26/07 14:40	lcp
Sulfate	SM4500 SO ₄ -D	1570		*	mg/L	10	50	07/27/07 15:16	kmc
TDS (calculated)	Calculation	2480			mg/L	10	50	08/09/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/09/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63970**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851PBW1	PBW	07/23/07 15:30				U	mg/L		-20	20			
WG228851LCSW2	LCSW	07/23/07 15:42	WC070705-3	820		820.8	mg/L	100.1	90	110			
WG228851PBW2	PBW	07/23/07 19:00				U	mg/L		-20	20			
WG228851LCSW5	LCSW	07/23/07 19:13	WC070705-3	820		822.6	mg/L	100.3	90	110			
WG228851PBW3	PBW	07/23/07 21:12				U	mg/L		-20	20			
WG228851LCSW8	LCSW	07/23/07 21:23	WC070705-3	820		829.8	mg/L	101.2	90	110			
L63970-02DUP	DUP	07/23/07 22:28			137	136.8	mg/L				0.1	20	
L63975-01DUP	DUP	07/23/07 23:55			96	97.2	mg/L				1.2	20	
WG228851PBW4	PBW	07/24/07 0:01				U	mg/L		-20	20			
WG228851LCSW11	LCSW	07/24/07 0:13	WC070705-3	820		828.2	mg/L	101	90	110			
WG228851LCSW14	LCSW	07/24/07 3:02	WC070705-3	820		829.6	mg/L	101.2	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.027	mg/L	101.4	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.09	0.09			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	1		1.103	mg/L	110.3	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	1	U	1.14	mg/L	114	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	1	U	1.131	mg/L	113.1	85	115	0.79	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	1	U	1.126	mg/L	112.6	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	1	U	1.124	mg/L	112.4	85	115	0.18	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.02		.02007	mg/L	100.4	90	110			
WG228887ICB	ICB	07/24/07 4:51				U	mg/L		-0.0012	0.0012			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.01		.01112	mg/L	111.2	85	115			
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.01	U	.00956	mg/L	95.6	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.01	U	.00996	mg/L	99.6	70	130	4.1	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.05		.05291	mg/L	105.8	90	110			
WG228887ICB	ICB	07/24/07 4:51				U	mg/L		-0.0015	0.0015			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.05		.05228	mg/L	104.6	85	115			
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.05	U	.05593	mg/L	111.9	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.05	U	.0565	mg/L	113	70	130	1.01	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L63970**

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.0014	mg/L	100.1	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.009	0.009			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.5065	mg/L	101.3	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	.017	.5303	mg/L	102.7	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	.017	.5225	mg/L	101.1	85	115	1.48	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	.029	.5294	mg/L	100.1	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	.029	.5418	mg/L	102.6	85	115	2.32	20	

WG229537

WG229537ICV	ICV	08/02/07 20:41	II070725-7	2		2.1035	mg/L	105.2	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.009	0.009			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	.5		.518	mg/L	103.6	85	115			
L63968-05AS	AS	08/02/07 22:10	II070802-2	2.5	.06	2.7	mg/L	105.6	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	2.5	.06	2.72	mg/L	106.4	85	115	0.74	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.05		.04852	mg/L	97	90	110			
WG228887ICB	ICB	07/24/07 4:51				U	mg/L		-0.0003	0.0003			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.05		.04813	mg/L	96.3	85	115			
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.05	U	.04595	mg/L	91.9	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.05	U	.04644	mg/L	92.9	70	130	1.06	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.05		.05385	mg/L	107.7	90	110			
WG228887ICB	ICB	07/24/07 4:51				U	mg/L		-0.0003	0.0003			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.05		.05301	mg/L	106	85	115			
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.05	.0016	.05335	mg/L	103.5	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.05	.0016	.05412	mg/L	105	70	130	1.43	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		101.03	mg/L	101	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.6	0.6			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	67.97008		74.38	mg/L	109.4	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	67.97008	33.8	106.35	mg/L	106.7	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	67.97008	33.8	106.05	mg/L	106.3	85	115	0.28	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	67.97008	38.2	108.91	mg/L	104	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	67.97008	38.2	109.34	mg/L	104.7	85	115	0.39	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L63970**

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229173													
WG229173ICV	ICV	07/27/07 9:29	WI070314-1	55		54.7	mg/L	99.5	90	110			
WG229173ICB	ICB	07/27/07 9:30				U	mg/L		-3	3			
WG229217													
WG229217ICV	ICV	07/27/07 14:45	WI070314-1	55		51.1	mg/L	92.9	90	110			
WG229217ICB	ICB	07/27/07 14:46				U	mg/L		-3	3			
WG229217LFB1	LFB	07/27/07 14:47	WI070712-1	30		28	mg/L	93.3	90	110			
L63971-01DUP	DUP	07/27/07 15:05			12	11.7	mg/L				2.5	20	
WG229217LFB2	LFB	07/27/07 15:15	WI070712-1	30		28.3	mg/L	94.3	90	110			
L63968-01AS	AS	07/27/07 15:31	WI070712-1	60	113	162.5	mg/L	82.5	90	110			M2
L63968-02DUP	DUP	07/27/07 15:35			115	121.5	mg/L				5.5	20	
L63970-05AS	AS	07/27/07 15:41	WI070712-1	60	119	158.1	mg/L	65.2	90	110			M2

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		2.034	mg/L	101.7	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.525	mg/L	105	85	115			
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	U	2.537	mg/L	101.5	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	U	2.553	mg/L	102.1	85	115	0.63	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.939	mg/L	97	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.514	mg/L	102.8	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.518	mg/L	103.6	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.517	mg/L	103.4	85	115	0.19	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	U	.502	mg/L	100.4	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	U	.519	mg/L	103.8	85	115	3.33	20	

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW1	LCSW	07/23/07 15:32	PCN27303	1408.8		1493	µmhos/cm	106	90	110			
WG228851LCSW4	LCSW	07/23/07 19:02	PCN27303	1408.8		1502	µmhos/cm	106.6	90	110			
WG228851LCSW7	LCSW	07/23/07 21:14	PCN27303	1408.8		1492	µmhos/cm	105.9	90	110			
L63970-02DUP	DUP	07/23/07 22:28			3330	3340	µmhos/cm				0.3	20	
L63975-01DUP	DUP	07/23/07 23:55			576	578	µmhos/cm				0.3	20	
WG228851LCSW10	LCSW	07/24/07 0:03	PCN27303	1408.8		1492	µmhos/cm	105.9	90	110			
WG228851LCSW13	LCSW	07/24/07 2:52	PCN27303	1408.8		1484	µmhos/cm	105.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63970**

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.944	mg/L	97.2	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.504	mg/L	100.8	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.521	mg/L	104.2	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.512	mg/L	102.4	85	115	1.74	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	U	.513	mg/L	102.6	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	U	.52	mg/L	104	85	115	1.36	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228939													
WG228939ICV	ICV	07/24/07 14:40	WI070714-6	.3		.3092	mg/L	103.1	90	110			
WG228939ICB	ICB	07/24/07 14:41				U	mg/L		-0.015	0.015			
WG228828LRB	LRB	07/24/07 14:43				U	mg/L		-0.015	0.015			
WG228828LFB	LFB	07/24/07 14:44	WI070714-2	.2		.2195	mg/L	109.8	90	110			
L63937-06DUP	DUP	07/24/07 14:57			U	U	mg/L				0	20	RA
L63937-07LFM	LFM	07/24/07 14:59	WI070714-2	.2	U	.2283	mg/L	114.2	90	110			M1
WG229243													
WG229243ICV	ICV	07/28/07 16:22	WI070714-6	.3		.3176	mg/L	105.9	90	110			
WG229243ICB	ICB	07/28/07 16:23				U	mg/L		-0.015	0.015			
WG229083LRB	LRB	07/28/07 16:24				U	mg/L		-0.015	0.015			
WG229083LFB	LFB	07/28/07 16:25	WI070714-2	.2		.1876	mg/L	93.8	90	110			
L63954-04DUP	DUP	07/28/07 16:26			U	U	mg/L				0	20	RA
L63968-04LFM	LFM	07/28/07 16:28	WI070714-2	.2	U	.1573	mg/L	78.7	90	110			M2
L63971-03DUP	DUP	07/28/07 16:39			U	U	mg/L				0	20	RA
L63971-04LFM	LFM	07/28/07 16:40	WI070714-2	.2	U	.1838	mg/L	91.9	90	110			

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229194													
WG229194ICV	ICV	07/27/07 13:00	WC070724-1	2		2.06	mg/L	103	90	110			
WG229194ICB	ICB	07/27/07 13:07				U	mg/L		-0.3	0.3			
WG229194LFB1	LFB	07/27/07 13:12	WC070504-3	5		5.02	mg/L	100.4	90	110			
WG229194LFB2	LFB	07/27/07 15:30	WC070504-3	5		4.88	mg/L	97.6	90	110			
L63815-04AS	AS	07/27/07 15:36	WC070504-3	5	.7	4.46	mg/L	75.2	90	110			M2
L63815-04DUP	DUP	07/27/07 15:39			.7	.72	mg/L				2.8	20	RA
L63970-02AS	AS	07/27/07 16:58	WC070504-3	5	.2	4.95	mg/L	95	90	110			
L63970-02DUP	DUP	07/27/07 17:00			.2	.22	mg/L				9.5	20	RA

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L63970**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.003	mg/L	100.2	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.06	0.06			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	1		1.068	mg/L	106.8	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	1	U	1.057	mg/L	105.7	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	1	U	1.065	mg/L	106.5	85	115	0.75	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	1	U	1.037	mg/L	103.7	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	1	U	1.052	mg/L	105.2	85	115	1.44	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.05		.05402	mg/L	108	90	110			
WG228887ICB	ICB	07/24/07 4:51				U	mg/L		-0.0003	0.0003			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.05		.05338	mg/L	106.8	85	115			E6
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.05	.0001	.05279	mg/L	105.4	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.05	.0001	.05344	mg/L	106.7	70	130	1.22	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		100.75	mg/L	100.8	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.6	0.6			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	54.96908		59.52	mg/L	108.3	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	54.96908	8.1	67.92	mg/L	108.8	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	54.96908	8.1	67.96	mg/L	108.9	85	115	0.06	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	54.96908	3.8	63.04	mg/L	107.8	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	54.96908	3.8	62.91	mg/L	107.5	85	115	0.21	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.9713	mg/L	98.6	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.015	0.015			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.5568	mg/L	111.4	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.5601	mg/L	112	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.5579	mg/L	111.6	85	115	0.39	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	.5	.011	.554	mg/L	108.6	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	.5	.011	.5622	mg/L	110.2	85	115	1.47	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63970**

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229211													
WG229211ICV	ICV	08/07/07 13:24	II070725-9	.005		.00483	mg/L	96.6	95	105			
WG229211ICB	ICB	08/07/07 13:26				U	mg/L		-0.0002	0.0002			
WG229211LRB	LRB	08/07/07 13:29				U	mg/L		-0.00044	0.00044			
WG229211LFB	LFB	08/07/07 13:31	II070720-2	.002		.00214	mg/L	107	85	115			
L63937-05LFM	LFM	08/07/07 13:35	II070720-2	.002	U	.00237	mg/L	118.5	85	115			M1
L63937-05LFMD	LFMD	08/07/07 13:37	II070720-2	.002	U	.00235	mg/L	117.5	85	115	0.85	20	M1
L63970-02LFM	LFM	08/07/07 14:06	II070720-2	.002	U	.0024	mg/L	120	85	115			MA
L63970-02LFMD	LFMD	08/07/07 14:08	II070720-2	.002	U	.00228	mg/L	114	85	115	5.13	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		2.034	mg/L	101.7	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.528	mg/L	105.6	85	115			
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	.07	2.698	mg/L	105.1	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	.07	2.78	mg/L	108.4	85	115	2.99	20	

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229537													
WG229537ICV	ICV	08/02/07 20:41	II070725-7	2		1.915	mg/L	95.8	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.03	0.03			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	.5		.491	mg/L	98.2	85	115			
L63968-05AS	AS	08/02/07 22:10	II070802-2	2.5	U	2.45	mg/L	98	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	2.5	U	2.471	mg/L	98.8	85	115	0.85	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
WG229231													
WG229231ICV	ICV	07/27/07 18:01	WI070609-1	2.416		2.463	mg/L	101.9	90	110			
WG229231ICB	ICB	07/27/07 18:02				U	mg/L		-0.06	0.06			
WG229234													
WG229234ICV	ICV	07/27/07 21:06	WI070609-1	2.416		2.384	mg/L	98.7	90	110			
WG229234ICB	ICB	07/27/07 21:07				U	mg/L		-0.06	0.06			
WG229234LFB1	LFB	07/27/07 21:08	WI070307-9	2		1.996	mg/L	99.8	90	110			
L63807-01AS	AS	07/27/07 21:10	WI070307-9	2	U	2.081	mg/L	104.1	90	110			
L63811-01DUP	DUP	07/27/07 21:13			.27	.268	mg/L				0.7	20	
WG229234LFB2	LFB	07/27/07 21:46	WI070307-9	2		1.99	mg/L	99.5	90	110			
WG229236													
WG229236ICV	ICV	07/27/07 22:15	WI070609-1	2.416		2.314	mg/L	95.8	90	110			
WG229236ICB	ICB	07/27/07 22:16				U	mg/L		-0.06	0.06			
WG229236LFB1	LFB	07/27/07 22:17	WI070307-9	2		1.951	mg/L	97.6	90	110			
WG229236LFB2	LFB	07/27/07 23:19	WI070307-9	2		1.995	mg/L	99.8	90	110			
L63968-06AS	AS	07/27/07 23:22	WI070307-9	4	2.21	6.392	mg/L	104.6	90	110			
L63970-01DUP	DUP	07/27/07 23:24			.88	.857	mg/L				2.6	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63970**

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW3	LCSW	07/23/07 15:44	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW6	LCSW	07/23/07 19:16	PCN26677	6		6.04	units	100.7	90	110			
WG228851LCSW9	LCSW	07/23/07 21:26	PCN26677	6		6.03	units	100.5	90	110			
L63970-02DUP	DUP	07/23/07 22:28			7.9	7.88	units				0.3	20	
L63975-01DUP	DUP	07/23/07 23:55			8.3	8.3	units				0	20	
WG228851LCSW12	LCSW	07/24/07 0:15	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW15	LCSW	07/24/07 3:06	PCN26677	6		6.03	units	100.5	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229537													
WG229537ICV	ICV	08/02/07 20:41	II070725-7	20		20.23	mg/L	101.2	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.9	0.9			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	99.76186		105.81	mg/L	106.1	85	115			
L63968-05AS	AS	08/02/07 22:10	II070802-2	498.8093	10	557.6	mg/L	109.8	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	498.8093	10	560.9	mg/L	110.4	85	115	0.59	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229019													
WG229019PBW	PBW	07/25/07 10:55				18	mg/L		-20	20			
WG229019LCSW	LCSW	07/25/07 10:56	PCN27690	260		288	mg/L	110.8	80	120			
L63970-04DUP	DUP	07/25/07 11:29			1410	1402	mg/L				0.6	20	
WG229123													
WG229123PBW	PBW	07/26/07 14:15				U	mg/L		-20	20			
WG229123LCSW	LCSW	07/26/07 14:16	PCN27690	260		304	mg/L	116.9	80	120			
L63988-04DUP	DUP	07/26/07 14:49			9740	9596	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
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.05		.05342	mg/L	106.8	90	110			
WG228887ICB	ICB	07/24/07 4:51				U	mg/L		-0.0003	0.0003			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.05		.05295	mg/L	105.9	85	115			
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.05	.0019	.0661	mg/L	128.4	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.05	.0019	.06485	mg/L	125.9	70	130	1.91	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L63970**

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		101.48	mg/L	101.5	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.9	0.9			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	98.21624		105.16	mg/L	107.1	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	98.21624	34	138.05	mg/L	105.9	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	98.21624	34	136.16	mg/L	104	85	115	1.38	20	
L63971-06AS	AS	08/01/07 5:21	II070725-3	98.21624	43.7	145.66	mg/L	103.8	85	115			
L63971-06ASD	ASD	08/01/07 5:25	II070725-3	98.21624	43.7	146.47	mg/L	104.6	85	115	0.55	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229201													
WG229201PBW	PBW	07/27/07 13:30				U	mg/L		-30	30			
WG229201LCSW	LCSW	07/27/07 13:32	WC070705-2	100		97	mg/L	97	80	120			
L63970-04DUP	DUP	07/27/07 14:30			740	614	mg/L				18.6	20	
WG229215													
WG229215PBW	PBW	07/27/07 15:00				U	mg/L		-30	30			
WG229215LCSW	LCSW	07/27/07 15:03	WC070705-2	100		95	mg/L	95	80	120			
L63971-06DUP	DUP	07/27/07 15:39			40	41	mg/L				2.5	20	RA

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228887													
WG228887ICV	ICV	07/24/07 4:45	MS070607-2	.05		.05455	mg/L	109.1	90	110			
WG228887ICB	ICB	07/24/07 4:51				.00011	mg/L		-0.0003	0.0003			
WG228887LFB	LFB	07/24/07 4:57	MS070712-3	.05		.05374	mg/L	107.5	85	115			E6
L63945-02AS	AS	07/24/07 6:29	MS070712-3	.05	.0008	.05415	mg/L	106.7	70	130			
L63945-02ASD	ASD	07/24/07 6:35	MS070712-3	.05	.0008	.05445	mg/L	107.3	70	130	0.55	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.93	mg/L	96.5	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.556	mg/L	111.2	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.508	mg/L	101.6	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.548	mg/L	109.6	85	115	7.58	20	
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		1.986	mg/L	99.3	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.54	mg/L	108	85	115			
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	.88	3.7	mg/L	112.8	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	.88	3.714	mg/L	113.4	85	115	0.38	20	

Phelps Dodge SierritaACZ Project ID: **L63970**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63970-01	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG228939	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
L63970-02	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	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).
L63970-03	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	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).
L63970-04	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	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).

Phelps Dodge SierritaACZ Project ID: **L63970**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63970-05	WG229211	Mercury, dissolved	M245.1 CVAA	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG229217	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	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).
	WG229215	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63970**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63970
Date Received: 7/20/2007
Received By:
Date Printed: 7/20/2007

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)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1585		2.3	15

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

Notes

Phelps Dodge Sierrita
 OJ03DL

ACZ Project ID: L63970
 Date Received: 7/20/2007
 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
L63970-01	IW-11		Y		Y							☐
L63970-02	IW-22		Y		Y							☐
L63970-03	IW-24		Y		Y							☐
L63970-04	DUP071907A		Y		Y							☐
L63970-05	DUP071907B		Y		Y							☐

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

CHAIN of CUSTODY

Report to:

Name: <i>Bill Dorris</i>	Address: <i>6200 W Duval Mine Rd</i>
Company: <i>Pheps Dodge Sierrita</i>	<i>Green Valley, AZ. 85614</i>
E-mail: <i>Billy-Dorris@FME.com</i>	Telephone: <i>520-648-8873</i>

Copy of Report to:

Name: Jim Norris	E-mail: jimn@hginc.com
Company: Hydro Geo Chem	Telephone: 520-293-1500 Ext 112

Invoice to:

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

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES	
NO	

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:		# of Containers								
Project/PO #: OJ03 DL										
Reporting state for compliance testing:										
Sampler's Name:										
Are any samples NRC licensable material?										

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
IW-11	7-18-07 / 14:30	GW 8
IW-22	7-18-07 / 14:10	GW 8
IW-24	7-18-07 / 13:10	GW 8
DUP071907A	7-19-07	GW 8
DUP071907B	7-19-07	GW 8

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

REMARKS

UPS Tracking # 1Z 867 7E4 21 1000 0420

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	7-19-07 / 15:00	KW	7-20-07 9!

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

August 16, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L63968 - SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2007. This project was assigned to ACZ's project number, L63968. 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 11.0. The enclosed results relate only to the samples received under L63968. 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.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-8

ACZ Sample ID: **L63968-01**

Date Sampled: 07/18/07 11:40

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	522			mg/L	0.4	2	08/01/07 4:13	djt
Magnesium, dissolved	M200.7 ICP	120			mg/L	0.4	2	08/01/07 4:13	djt
Potassium, dissolved	M200.7 ICP	12			mg/L	2	8	08/02/07 21:49	wfg
Sodium, dissolved	M200.7 ICP	180			mg/L	0.6	3	08/01/07 4:13	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		122			mg/L	2	20	07/23/07 0:00	cas
Carbonate as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	07/23/07 0:00	cas
Total Alkalinity		122			mg/L	2	20	07/23/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.8			%			08/16/07 0:00	calc
Sum of Anions		44.9			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		44.2			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	113		*	mg/L	2	10	07/27/07 15:30	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/27/07 15:58	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.83		*	mg/L	0.02	0.1	07/27/07 23:13	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3130			mg/L	10	20	07/25/07 11:14	aeh
Sulfate	SM4500 SO ₄ -D	1870			mg/L	10	50	07/27/07 14:04	kmc
TDS (calculated)	Calculation	2890			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.08						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-9

ACZ Sample ID: **L63968-02**

Date Sampled: 07/18/07 12:15

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	515			mg/L	0.4	2	08/01/07 4:17	djt
Magnesium, dissolved	M200.7 ICP	103			mg/L	0.4	2	08/01/07 4:17	djt
Potassium, dissolved	M200.7 ICP	12			mg/L	2	8	08/02/07 21:53	wfg
Sodium, dissolved	M200.7 ICP	185			mg/L	0.6	3	08/01/07 4:17	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		122			mg/L	2	20	07/24/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Total Alkalinity		122		*	mg/L	2	20	07/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.3			%			08/16/07 0:00	calc
Sum of Anions		43.7			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		42.6			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	115		*	mg/L	2	10	07/27/07 15:34	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/27/07 16:01	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.89		*	mg/L	0.02	0.1	07/27/07 23:14	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3050			mg/L	10	20	07/25/07 11:16	aeh
Sulfate	SM4500 SO ₄ -D	1810			mg/L	10	50	07/27/07 14:06	kmc
TDS (calculated)	Calculation	2810			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-10

ACZ Sample ID: **L63968-03**

Date Sampled: 07/18/07 13:55

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	541			mg/L	0.4	2	08/01/07 4:21	djt
Magnesium, dissolved	M200.7 ICP	99.8			mg/L	0.4	2	08/01/07 4:21	djt
Potassium, dissolved	M200.7 ICP	11			mg/L	2	8	08/02/07 21:57	wfg
Sodium, dissolved	M200.7 ICP	170			mg/L	0.6	3	08/01/07 4:21	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		151			mg/L	2	20	07/24/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Total Alkalinity		151		*	mg/L	2	20	07/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.3			%			08/16/07 0:00	calc
Sum of Anions		44.1			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		43.0			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	139		*	mg/L	2	10	07/27/07 15:36	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/27/07 16:04	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.01		*	mg/L	0.02	0.1	07/27/07 23:16	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3060			mg/L	10	20	07/25/07 11:17	aeh
Sulfate	SM4500 SO ₄ -D	1770			mg/L	10	50	07/27/07 14:09	kmc
TDS (calculated)	Calculation	2820			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-26A

ACZ Sample ID: **L63968-04**

Date Sampled: 07/19/07 11:28

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	33.8			mg/L	0.2	1	08/01/07 4:24	djt
Magnesium, dissolved	M200.7 ICP	8.1			mg/L	0.2	1	08/01/07 4:24	djt
Potassium, dissolved	M200.7 ICP	3.6			mg/L	0.3	2	08/02/07 22:02	wfg
Sodium, dissolved	M200.7 ICP	34.0			mg/L	0.3	2	08/01/07 4:24	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		160			mg/L	2	20	07/24/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Total Alkalinity		160		*	mg/L	2	20	07/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.3			%			08/16/07 0:00	calc
Sum of Anions		3.8			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		3.9			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	8		*	mg/L	1	5	07/27/07 14:53	aml/jag
Fluoride	SM4500F-C	0.5		*	mg/L	0.1	0.5	07/27/07 16:07	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.18		*	mg/L	0.02	0.1	07/27/07 23:17	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	260			mg/L	10	20	07/25/07 11:19	aeh
Sulfate	SM4500 SO ₄ -D	20	B		mg/L	10	50	07/27/07 14:11	kmc
TDS (calculated)	Calculation	204			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.27						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-26B

ACZ Sample ID: **L63968-05**

Date Sampled: 07/19/07 12:00

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	510			mg/L	0.4	2	08/01/07 4:36	djt
Magnesium, dissolved	M200.7 ICP	115			mg/L	0.4	2	08/01/07 4:36	djt
Potassium, dissolved	M200.7 ICP	10			mg/L	2	8	08/02/07 22:06	wfg
Sodium, dissolved	M200.7 ICP	96.5			mg/L	0.6	3	08/01/07 4:36	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		100			mg/L	2	20	07/24/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Total Alkalinity		100		*	mg/L	2	20	07/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.7			%			08/16/07 0:00	calc
Sum of Anions		38.1			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		39.4			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	98		*	mg/L	1	5	07/27/07 14:54	aml/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	07/27/07 16:11	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.14		*	mg/L	0.02	0.1	07/27/07 23:18	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2800			mg/L	10	20	07/25/07 11:20	aeh
Sulfate	SM4500 SO ₄ -D	1590			mg/L	10	50	07/27/07 14:14	kmc
TDS (calculated)	Calculation	2480			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/16/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: MH-26C

ACZ Sample ID: **L63968-06**

Date Sampled: 07/19/07 11:17

Date Received: 07/20/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	227			mg/L	0.2	1	08/01/07 4:40	djt
Magnesium, dissolved	M200.7 ICP	51.0			mg/L	0.2	1	08/01/07 4:40	djt
Potassium, dissolved	M200.7 ICP	10.8			mg/L	0.6	3	08/02/07 22:19	wfg
Sodium, dissolved	M200.7 ICP	99.7			mg/L	0.3	2	08/01/07 4:40	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		90			mg/L	2	20	07/24/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/24/07 0:00	aeh/jlf
Total Alkalinity		90		*	mg/L	2	20	07/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.8			%			08/16/07 0:00	calc
Sum of Anions		19.1			meq/L	0.1	0.5	08/16/07 0:00	calc
Sum of Cations		20.2			meq/L	0.1	0.5	08/16/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	70		*	mg/L	1	5	07/27/07 14:55	aml/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	07/27/07 16:14	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.21			mg/L	0.04	0.2	07/27/07 23:20	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1390			mg/L	10	20	07/25/07 11:22	aeh
Sulfate	SM4500 SO ₄ -D	730			mg/L	10	50	07/27/07 14:17	kmc
TDS (calculated)	Calculation	1240			mg/L	10	50	08/16/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						08/16/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita

ACZ Project ID: **L63968**

Project ID: OJ03DL

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851PBW1	PBW	07/23/07 15:30				U	mg/L		-20	20			
WG228851LCSW2	LCSW	07/23/07 15:42	WC070705-3	820		820.8	mg/L	100.1	90	110			
WG228851PBW2	PBW	07/23/07 19:00				U	mg/L		-20	20			
WG228851LCSW5	LCSW	07/23/07 19:13	WC070705-3	820		822.6	mg/L	100.3	90	110			
WG228851PBW3	PBW	07/23/07 21:12				U	mg/L		-20	20			
WG228851LCSW8	LCSW	07/23/07 21:23	WC070705-3	820		829.8	mg/L	101.2	90	110			
L63970-02DUP	DUP	07/23/07 22:28			137	136.8	mg/L				0.1	20	
WG228851PBW4	PBW	07/24/07 0:01				U	mg/L		-20	20			
WG228851LCSW11	LCSW	07/24/07 0:13	WC070705-3	820		828.2	mg/L	101	90	110			
WG228851LCSW14	LCSW	07/24/07 3:02	WC070705-3	820		829.6	mg/L	101.2	90	110			
WG228898													
WG228898PBW1	PBW	07/24/07 10:37				U	mg/L		-20	20			
WG228898LCSW2	LCSW	07/24/07 10:50	WC070723-9	820		822.5	mg/L	100.3	90	110			
WG228898PBW2	PBW	07/24/07 14:17				U	mg/L		-20	20			
WG228898LCSW5	LCSW	07/24/07 14:30	WC070723-9	820		843.2	mg/L	102.8	90	110			
L63974-05DUP	DUP	07/24/07 17:21			U	U	mg/L				0	20	RA
WG228898PBW3	PBW	07/24/07 17:27				U	mg/L		-20	20			
WG228898LCSW8	LCSW	07/24/07 17:39	WC070723-9	820		832.9	mg/L	101.6	90	110			
WG228898PBW4	PBW	07/24/07 20:30				U	mg/L		-20	20			
WG228898LCSW11	LCSW	07/24/07 20:41	WC070723-9	820		834.1	mg/L	101.7	90	110			
WG228898LCSW14	LCSW	07/24/07 23:46	WC070723-9	820		834.8	mg/L	101.8	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.027	mg/L	101.4	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.09	0.09			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	1		1.103	mg/L	110.3	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	1	U	1.14	mg/L	114	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	1	U	1.131	mg/L	113.1	85	115	0.79	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.02		.02079	mg/L	104	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0012	0.0012			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.01		.01135	mg/L	113.5	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.02	.001	.01976	mg/L	93.8	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.02	.001	.02004	mg/L	95.2	70	130	1.41	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L63968**

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05077	mg/L	101.5	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0015	0.0015			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.0513	mg/L	102.6	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	.002	.1117	mg/L	109.7	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	.002	.1098	mg/L	107.8	70	130	1.72	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.0014	mg/L	100.1	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.009	0.009			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.5065	mg/L	101.3	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	.017	.5303	mg/L	102.7	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	.017	.5225	mg/L	101.1	85	115	1.48	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.04806	mg/L	96.1	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.04797	mg/L	95.9	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	U	.09998	mg/L	100	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	U	.09874	mg/L	98.7	70	130	1.25	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05043	mg/L	100.9	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05046	mg/L	100.9	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	U	.10284	mg/L	102.8	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	U	.10156	mg/L	101.6	70	130	1.25	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		101.03	mg/L	101	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.6	0.6			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	67.97008		74.38	mg/L	109.4	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	67.97008	33.8	106.35	mg/L	106.7	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	67.97008	33.8	106.05	mg/L	106.3	85	115	0.28	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63968**

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229173													
WG229173ICV	ICV	07/27/07 9:29	WI070314-1	55		54.7	mg/L	99.5	90	110			
WG229173ICB	ICB	07/27/07 9:30				U	mg/L		-3	3			
WG229217													
WG229217ICV	ICV	07/27/07 14:45	WI070314-1	55		51.1	mg/L	92.9	90	110			
WG229217ICB	ICB	07/27/07 14:46				U	mg/L		-3	3			
WG229217LFB1	LFB	07/27/07 14:47	WI070712-1	30		28	mg/L	93.3	90	110			
WG229217LFB2	LFB	07/27/07 15:15	WI070712-1	30		28.3	mg/L	94.3	90	110			
L63968-01AS	AS	07/27/07 15:31	WI070712-1	60	113	162.5	mg/L	82.5	90	110			M2
L63968-02DUP	DUP	07/27/07 15:35			115	121.5	mg/L				5.5	20	

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		2.034	mg/L	101.7	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.525	mg/L	105	85	115			
L63748-01AS	AS	08/01/07 22:11	II070725-3	.5	U	.532	mg/L	106.4	85	115			
L63748-01ASD	ASD	08/01/07 22:15	II070725-3	.5	U	.534	mg/L	106.8	85	115	0.38	20	
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	U	2.537	mg/L	101.5	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	U	2.553	mg/L	102.1	85	115	0.63	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.939	mg/L	97	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.514	mg/L	102.8	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.518	mg/L	103.6	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.517	mg/L	103.4	85	115	0.19	20	

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW1	LCSW	07/23/07 15:32	PCN27303	1408.8		1493	µmhos/crr	106	90	110			
WG228851LCSW4	LCSW	07/23/07 19:02	PCN27303	1408.8		1502	µmhos/crr	106.6	90	110			
WG228851LCSW7	LCSW	07/23/07 21:14	PCN27303	1408.8		1492	µmhos/crr	105.9	90	110			
L63970-02DUP	DUP	07/23/07 22:28			3330	3340	µmhos/crr				0.3	20	
WG228851LCSW10	LCSW	07/24/07 0:03	PCN27303	1408.8		1492	µmhos/crr	105.9	90	110			
WG228851LCSW13	LCSW	07/24/07 2:52	PCN27303	1408.8		1484	µmhos/crr	105.3	90	110			
WG228898													
WG228898LCSW1	LCSW	07/24/07 10:38	PCN27303	1408.8		1498	µmhos/crr	106.3	90	110			
WG228898LCSW4	LCSW	07/24/07 14:18	PCN27303	1408.8		1506	µmhos/crr	106.9	90	110			
L63974-05DUP	DUP	07/24/07 17:21			11	11.1	µmhos/crr				0.9	20	
WG228898LCSW7	LCSW	07/24/07 17:28	PCN27303	1408.8		1499	µmhos/crr	106.4	90	110			
WG228898LCSW10	LCSW	07/24/07 20:31	PCN27303	1408.8		1498	µmhos/crr	106.3	90	110			
WG228898LCSW13	LCSW	07/24/07 23:34	PCN27303	1408.8		1490	µmhos/crr	105.8	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63968**

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.944	mg/L	97.2	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.504	mg/L	100.8	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.521	mg/L	104.2	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.512	mg/L	102.4	85	115	1.74	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229243													
WG229243ICV	ICV	07/28/07 16:22	WI070714-6	.3		.3176	mg/L	105.9	90	110			
WG229243ICB	ICB	07/28/07 16:23				U	mg/L		-0.015	0.015			
WG229083LRB	LRB	07/28/07 16:24				U	mg/L		-0.015	0.015			
WG229083LFB	LFB	07/28/07 16:25	WI070714-2	.2		.1876	mg/L	93.8	90	110			
L63954-04DUP	DUP	07/28/07 16:26			U	U	mg/L				0	20	RA
L63968-04LFM	LFM	07/28/07 16:28	WI070714-2	.2	U	.1573	mg/L	78.7	90	110			M2

WG229246

WG229246ICV	ICV	07/28/07 17:20	WI070714-6	.3		.3088	mg/L	102.9	90	110			
WG229246ICB	ICB	07/28/07 17:21				U	mg/L		-0.015	0.015			
WG229096LRB	LRB	07/28/07 17:22				U	mg/L		-0.015	0.015			
WG229096LFB	LFB	07/28/07 17:23	WI070714-2	.2		.1892	mg/L	94.6	90	110			
L63968-01DUP	DUP	07/28/07 17:25			.036	.039	mg/L				8	20	RA
L63968-02LFM	LFM	07/28/07 17:27	WI070714-2	.2	.067	.2596	mg/L	96.3	90	110			

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229194													
WG229194ICV	ICV	07/27/07 13:00	WC070724-1	2		2.06	mg/L	103	90	110			
WG229194ICB	ICB	07/27/07 13:07				U	mg/L		-0.3	0.3			
WG229194LFB1	LFB	07/27/07 13:12	WC070504-3	5		5.02	mg/L	100.4	90	110			
WG229194LFB2	LFB	07/27/07 15:30	WC070504-3	5		4.88	mg/L	97.6	90	110			
L63815-04AS	AS	07/27/07 15:36	WC070504-3	5	.7	4.46	mg/L	75.2	90	110			M2
L63815-04DUP	DUP	07/27/07 15:39			.7	.72	mg/L				2.8	20	RA

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		2.003	mg/L	100.2	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.06	0.06			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	1		1.068	mg/L	106.8	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	1	U	1.057	mg/L	105.7	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	1	U	1.065	mg/L	106.5	85	115	0.75	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63968**

Project ID: OJ03DL

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05165	mg/L	103.3	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05068	mg/L	101.4	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	U	.10532	mg/L	105.3	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	U	.10216	mg/L	102.2	70	130	3.05	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		100.75	mg/L	100.8	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.6	0.6			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	54.96908		59.52	mg/L	108.3	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	54.96908	8.1	67.92	mg/L	108.8	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	54.96908	8.1	67.96	mg/L	108.9	85	115	0.06	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.9713	mg/L	98.6	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.015	0.015			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.5568	mg/L	111.4	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.5601	mg/L	112	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.5579	mg/L	111.6	85	115	0.39	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229211													
WG229211ICV	ICV	08/07/07 13:24	II070725-9	.005		.00483	mg/L	96.6	95	105			
WG229211ICB	ICB	08/07/07 13:26				U	mg/L		-0.0002	0.0002			
WG229211LRB	LRB	08/07/07 13:29				U	mg/L		-0.00044	0.00044			
WG229211LFB	LFB	08/07/07 13:31	II070720-2	.002		.00214	mg/L	107	85	115			
L63937-05LFM	LFM	08/07/07 13:35	II070720-2	.002	U	.00237	mg/L	118.5	85	115			M1
L63937-05LFMD	LFMD	08/07/07 13:37	II070720-2	.002	U	.00235	mg/L	117.5	85	115	0.85	20	M1

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229468													
WG229468ICV	ICV	08/01/07 21:45	II070725-7	2		2.034	mg/L	101.7	95	105			
WG229468ICB	ICB	08/01/07 21:49				U	mg/L		-0.03	0.03			
WG229468LFB	LFB	08/01/07 22:03	II070725-3	.5		.528	mg/L	105.6	85	115			
L63748-01AS	AS	08/01/07 22:11	II070725-3	.5	.02	.539	mg/L	103.8	85	115			
L63748-01ASD	ASD	08/01/07 22:15	II070725-3	.5	.02	.531	mg/L	102.2	85	115	1.5	20	
L63968-05AS	AS	08/01/07 23:04	II070725-3	2.5	.07	2.698	mg/L	105.1	85	115			
L63968-05ASD	ASD	08/01/07 23:08	II070725-3	2.5	.07	2.78	mg/L	108.4	85	115	2.99	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63968**

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229537													
WG229537ICV	ICV	08/02/07 20:41	II070725-7	2		1.915	mg/L	95.8	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.03	0.03			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	.5		.491	mg/L	98.2	85	115			
L63956-01AS	AS	08/02/07 21:11	II070802-2	.5	U	.498	mg/L	99.6	85	115			
L63956-01ASD	ASD	08/02/07 21:15	II070802-2	.5	U	.5	mg/L	100	85	115	0.4	20	
L63968-05AS	AS	08/02/07 22:10	II070802-2	2.5	U	2.45	mg/L	98	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	2.5	U	2.471	mg/L	98.8	85	115	0.85	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
WG229231													
WG229231ICV	ICV	07/27/07 18:01	WI070609-1	2.416		2.463	mg/L	101.9	90	110			
WG229231ICB	ICB	07/27/07 18:02				U	mg/L		-0.06	0.06			
WG229236													
WG229236ICV	ICV	07/27/07 22:15	WI070609-1	2.416		2.314	mg/L	95.8	90	110			
WG229236ICB	ICB	07/27/07 22:16				U	mg/L		-0.06	0.06			
WG229236LFB1	LFB	07/27/07 22:17	WI070307-9	2		1.951	mg/L	97.6	90	110			
L63820-04DUP	DUP	07/27/07 22:41			.1	.084	mg/L				17.4	20	RA
WG229236LFB2	LFB	07/27/07 23:19	WI070307-9	2		1.995	mg/L	99.8	90	110			
L63968-06AS	AS	07/27/07 23:22	WI070307-9	4	2.21	6.392	mg/L	104.6	90	110			
L63970-01DUP	DUP	07/27/07 23:24			.88	.857	mg/L				2.6	20	
L63820-02AS	AS	07/27/07 23:35	WI070307-9	10	4	15.06	mg/L	110.6	90	110			M1

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228851													
WG228851LCSW3	LCSW	07/23/07 15:44	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW6	LCSW	07/23/07 19:16	PCN26677	6		6.04	units	100.7	90	110			
WG228851LCSW9	LCSW	07/23/07 21:26	PCN26677	6		6.03	units	100.5	90	110			
L63970-02DUP	DUP	07/23/07 22:28			7.9	7.88	units				0.3	20	
WG228851LCSW12	LCSW	07/24/07 0:15	PCN26677	6		6.03	units	100.5	90	110			
WG228851LCSW15	LCSW	07/24/07 3:06	PCN26677	6		6.03	units	100.5	90	110			
WG228898													
WG228898LCSW3	LCSW	07/24/07 10:52	PCN26677	6		6.03	units	100.5	90	110			
WG228898LCSW6	LCSW	07/24/07 14:32	PCN26677	6		6.03	units	100.5	90	110			
L63974-05DUP	DUP	07/24/07 17:21			5.7	5.53	units				3	20	
WG228898LCSW9	LCSW	07/24/07 17:41	PCN26677	6		6.03	units	100.5	90	110			
WG228898LCSW12	LCSW	07/24/07 20:44	PCN26677	6		6.03	units	100.5	90	110			
WG228898LCSW15	LCSW	07/24/07 23:48	PCN26677	6		6.02	units	100.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63968**

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229537													
WG229537ICV	ICV	08/02/07 20:41	II070725-7	20		20.23	mg/L	101.2	95	105			
WG229537ICB	ICB	08/02/07 20:45				U	mg/L		-0.9	0.9			
WG229537LFB	LFB	08/02/07 21:02	II070802-2	99.76186		105.81	mg/L	106.1	85	115			
L63956-01AS	AS	08/02/07 21:11	II070802-2	99.76186	.9	110.41	mg/L	109.8	85	115			
L63956-01ASD	ASD	08/02/07 21:15	II070802-2	99.76186	.9	111.18	mg/L	110.5	85	115	0.69	20	
L63968-05AS	AS	08/02/07 22:10	II070802-2	498.8093	10	557.6	mg/L	109.8	85	115			
L63968-05ASD	ASD	08/02/07 22:14	II070802-2	498.8093	10	560.9	mg/L	110.4	85	115	0.59	20	

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229019													
WG229019PBW	PBW	07/25/07 10:55				18	mg/L		-20	20			
WG229019LCSW	LCSW	07/25/07 10:56	PCN27690	260		288	mg/L	110.8	80	120			
L63970-04DUP	DUP	07/25/07 11:29			1410	1402	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
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05279	mg/L	105.6	90	110			
WG228954ICB	ICB	07/25/07 14:15				U	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05212	mg/L	104.2	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	.0006	.1227	mg/L	122.1	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	.0006	.12224	mg/L	121.6	70	130	0.38	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	100		101.48	mg/L	101.5	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.9	0.9			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	98.21624		105.16	mg/L	107.1	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	98.21624	34	138.05	mg/L	105.9	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	98.21624	34	136.16	mg/L	104	85	115	1.38	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229201													
WG229201PBW	PBW	07/27/07 13:30				U	mg/L		-30	30			
WG229201LCSW	LCSW	07/27/07 13:32	WC070705-2	100		97	mg/L	97	80	120			
L63970-04DUP	DUP	07/27/07 14:30			740	614	mg/L				18.6	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L63968**

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG228954													
WG228954ICV	ICV	07/25/07 14:10	MS070607-2	.05		.05344	mg/L	106.9	90	110			
WG228954ICB	ICB	07/25/07 14:15				.00011	mg/L		-0.0003	0.0003			
WG228954LFB	LFB	07/25/07 14:21	MS070712-3	.05		.05174	mg/L	103.5	85	115			
L63968-01AS	AS	07/25/07 14:33	MS070712-3	.1	.0002	.10784	mg/L	107.6	70	130			
L63968-01ASD	ASD	07/25/07 14:38	MS070712-3	.1	.0002	.10568	mg/L	105.5	70	130	2.02	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229388													
WG229388ICV	ICV	08/01/07 3:51	II070725-7	2		1.93	mg/L	96.5	95	105			
WG229388ICB	ICB	08/01/07 3:56				U	mg/L		-0.03	0.03			
WG229388LFB	LFB	08/01/07 4:09	II070725-3	.5		.556	mg/L	111.2	85	115			
L63968-04AS	AS	08/01/07 4:28	II070725-3	.5	U	.508	mg/L	101.6	85	115			
L63968-04ASD	ASD	08/01/07 4:32	II070725-3	.5	U	.548	mg/L	109.6	85	115	7.58	20	

Phelps Dodge Sierrita

ACZ Project ID: **L63968**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63968-01	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229246	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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229236	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
L63968-02	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229246	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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229236	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228898	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).
L63968-03	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229246	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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229236	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228898	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).

Phelps Dodge Sierrita

ACZ Project ID: **L63968**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63968-04	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229236	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228898	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).
L63968-05	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG229236	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG228898	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).
L63968-06	WG229211	Mercury, dissolved	M245.1 CVAA	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229217	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).
	WG229194	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the method control sample recovery 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).
	WG228898	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).

Phelps Dodge SierritaACZ Project ID: **L63968**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63968-07	WG229243	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L63968**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63968
Date Received: 7/20/2007
Received By:
Date Printed: 7/24/2007

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

Sample 3 and 4 have headspace in 1/3 vials. The trip blank contains headspace.

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

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1931		2.9	16

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

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L63968
 Date Received: 7/20/2007
 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
L63968-01	IW-8		Y		Y							☐
L63968-02	IW-9		Y		Y							☐
L63968-03	IW-10		Y		Y							☐
L63968-04	MH-26A		Y		Y							☐
L63968-05	MH-26B		Y		Y							☐
L63968-06	MH-26C		Y		Y							☐
L63968-07	TB031307-18											☐
L63968-08	TB061307-07											☐

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: _____

CHAIN of CUSTODY

Report to:

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

Copy of Report to:

E-mail: jimmn@hginc.com
Telephone: 520-293-1500 Ext 112

Invoice to:

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)

of Containers

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

IW-8	7-18-07 / 11:40	GW	8
IW-9	7-18-07 / 12:15	GW	8
IW-10	7-18-07 / 13:55	GW	8
MH-26 A	7-19-07 / 11:28	GW	8
MH-26 B	7-19-07 / 12:00	GW	8
MH-26 C	7-19-07 / 11:17	GW	8

Ambient Suite

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

REMARKS

UPS Tracking # 1Z 867 7E4 21 1000 0439

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	7-19-07 / 1500	KL	7-20-07 911

August 13, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L64105

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 26, 2007. This project has been assigned to ACZ's project number, L64105. 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 L64105. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 13, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: FGW-550533

ACZ Sample ID: **L64105-01**
Date Sampled: 07/25/07 08:52
Date Received: 07/26/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	818			mS/cm			07/25/07 8:52	ma
pH (Field)	Field Measurement	7.7			units			07/25/07 8:52	ma
Temperature (Field)	Field Measurement	29.8			C			07/25/07 8:52	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	82.6			mg/L	0.2	1	08/07/07 15:11	msh
Magnesium, dissolved	M200.7 ICP	20.6			mg/L	0.2	1	08/07/07 15:11	msh
Potassium, dissolved	M200.7 ICP	4.7			mg/L	0.3	2	08/08/07 23:13	wfg
Sodium, dissolved	M200.7 ICP	47.0			mg/L	0.3	2	08/07/07 15:11	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		122			mg/L	2	20	08/03/07 0:00	aeH/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeH/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeH/jlf
Total Alkalinity		122		*	mg/L	2	20	08/03/07 0:00	aeH/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.6			%			08/13/07 0:00	calc
Sum of Anions		7.6			meq/L	0.1	0.5	08/13/07 0:00	calc
Sum of Cations		8.0			meq/L	0.1	0.5	08/13/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	21.3			mg/L	0.5	3	08/03/07 21:04	jag
Fluoride	M300.0 - Ion Chromatography	0.4	B	*	mg/L	0.1	0.5	08/03/07 21:04	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.91			mg/L	0.02	0.1	08/13/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.91			mg/L	0.02	0.1	07/26/07 19:15	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U		mg/L	0.01	0.05	07/26/07 19:15	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	570			mg/L	10	20	08/01/07 11:39	ear/jlf
Sulfate	300.0 - Ion Chromatography	213			mg/L	5	30	08/08/07 19:53	jag
TDS (calculated)	Calculation	471			mg/L	10	50	08/13/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.21						08/13/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-550533

ACZ Sample ID: **L64105-02**

Date Sampled: 07/25/07 08:52

Date Received: 07/26/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	818			mS/cm			07/25/07 8:52	ma
pH (Field)	Field Measurement	7.7			units			07/25/07 8:52	ma
Temperature (Field)	Field Measurement	29.8			C			07/25/07 8:52	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	214			mg/L	5	30	08/08/07 20:11	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64105**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229639													
WG229639PBW1	PBW	08/03/07 15:45				U	mg/L		-20	20			
WG229639LCSW2	LCSW	08/03/07 15:57	WC070723-9	820		819.9	mg/L	100	90	110			
WG229639PBW2	PBW	08/03/07 18:52				U	mg/L		-20	20			
WG229639LCSW5	LCSW	08/03/07 19:04	WC070723-9	820		843.5	mg/L	102.9	90	110			
L64113-03DUP	DUP	08/03/07 19:16			13	13.2	mg/L				1.5	20	RA
WG229639PBW3	PBW	08/03/07 22:09				U	mg/L		-20	20			
WG229639LCSW8	LCSW	08/03/07 22:21	WC070723-9	820		825	mg/L	100.6	90	110			
WG229639PBW4	PBW	08/04/07 0:45				U	mg/L		-20	20			
WG229639LCSW11	LCSW	08/04/07 0:57	WC070723-9	820		826.7	mg/L	100.8	90	110			
WG229639LCSW14	LCSW	08/04/07 3:02	WC070723-9	820		828.5	mg/L	101	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229652													
WG229652ICV	ICV	08/07/07 14:06	II070725-7	100		100.06	mg/L	100.1	95	105			
WG229652ICB	ICB	08/07/07 14:10				U	mg/L		-0.6	0.6			
WG229652LFB	LFB	08/07/07 14:22	II070802-2	67.97008		69.5	mg/L	102.3	85	115			
L64105-01AS	AS	08/07/07 15:15	II070802-2	67.97008	82.6	145.85	mg/L	93.1	85	115			
L64105-01ASD	ASD	08/07/07 15:18	II070802-2	67.97008	82.6	145.02	mg/L	91.8	85	115	0.57	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	20		20.22	mg/L	101.1	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-1.5	1.5			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	30		31.38	mg/L	104.6	90	110			
L63999-07DUP	DUP	08/03/07 19:51			27.8	27.75	mg/L				0.2	20	
L64014-01AS	AS	08/03/07 20:28	WI070727-1	30	66	95.08	mg/L	96.9	90	110			
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	20		20.11	mg/L	100.6	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-1.5	1.5			
L64014-01AS	AS	08/08/07 19:35	WI070727-1	300	62	356.8	mg/L	98.3	90	110			

Phelps Dodge Sierrita
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ACZ Project ID: **L64105**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	3.984		4.14	mg/L	103.9	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-0.3	0.3			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	1.5		1.61	mg/L	107.3	90	110			
L63999-07DUP	DUP	08/03/07 19:51			U	U	mg/L				0	20	RA
L64014-01AS	AS	08/03/07 20:28	WI070727-1	1.5	.2	1.92	mg/L	114.7	90	110			M1
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	3.984		4.09	mg/L	102.7	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229652													
WG229652ICV	ICV	08/07/07 14:06	II070725-7	100		99.3	mg/L	99.3	95	105			
WG229652ICB	ICB	08/07/07 14:10				U	mg/L		-0.6	0.6			
WG229652LFB	LFB	08/07/07 14:22	II070802-2	54.96908		55.61	mg/L	101.2	85	115			
L64105-01AS	AS	08/07/07 15:15	II070802-2	54.96908	20.6	74.59	mg/L	98.2	85	115			
L64105-01ASD	ASD	08/07/07 15:18	II070802-2	54.96908	20.6	74	mg/L	97.1	85	115	0.79	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229157													
WG229157ICV	ICV	07/26/07 18:12	WI070609-1	2.416		2.452	mg/L	101.5	90	110			
WG229157ICB	ICB	07/26/07 18:13				U	mg/L		-0.06	0.06			
WG229157LFB1	LFB	07/26/07 18:18	WI070307-9	2		2.103	mg/L	105.2	90	110			
WG229157LFB2	LFB	07/26/07 18:54	WI070307-9	2		2.185	mg/L	109.3	90	110			
L64096-01AS	AS	07/26/07 19:00	WI070307-9	2	.21	2.289	mg/L	104	90	110			
L64096-02DUP	DUP	07/26/07 19:20			15.9	16.17	mg/L				1.7	20	

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229157													
WG229157ICV	ICV	07/26/07 18:12	WI070609-1	.609		.638	mg/L	104.8	90	110			
WG229157ICB	ICB	07/26/07 18:13				U	mg/L		-0.03	0.03			
WG229157LFB1	LFB	07/26/07 18:18	WI070307-9	1		1.042	mg/L	104.2	90	110			
WG229157LFB2	LFB	07/26/07 18:54	WI070307-9	1		1.04	mg/L	104	90	110			
L64096-01AS	AS	07/26/07 19:00	WI070307-9	1	U	1.015	mg/L	101.5	90	110			
L64096-02DUP	DUP	07/26/07 19:02			.19	.194	mg/L				2.1	20	

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ACZ Project ID: **L64105**

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Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229903													
WG229903ICV	ICV	08/08/07 22:35	II070725-7	20		20.22	mg/L	101.1	95	105			
WG229903ICB	ICB	08/08/07 22:39				U	mg/L		-0.9	0.9			
WG229903LFB	LFB	08/08/07 22:56	II070802-2	99.76186		103.26	mg/L	103.5	85	115			
L64105-01AS	AS	08/08/07 23:18	II070802-2	99.76186	4.7	112.54	mg/L	108.1	85	115			
L64105-01ASD	ASD	08/08/07 23:22	II070802-2	99.76186	4.7	113.75	mg/L	109.3	85	115	1.07	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229444													
WG229444PBW	PBW	08/01/07 10:50				U	mg/L		-20	20			
WG229444LCSW	LCSW	08/01/07 10:52	PCN27688	260		256	mg/L	98.5	80	120			
L64112-03DUP	DUP	08/01/07 11:50			180	168	mg/L				6.9	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229652													
WG229652ICV	ICV	08/07/07 14:06	II070725-7	100		100.94	mg/L	100.9	95	105			
WG229652ICB	ICB	08/07/07 14:10				U	mg/L		-0.9	0.9			
WG229652LFB	LFB	08/07/07 14:22	II070802-2	98.21624		98.04	mg/L	99.8	85	115			
L64105-01AS	AS	08/07/07 15:15	II070802-2	98.21624	47	139.8	mg/L	94.5	85	115			
L64105-01ASD	ASD	08/07/07 15:18	II070802-2	98.21624	47	141.8	mg/L	96.5	85	115	1.42	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	50.15		51.03	mg/L	101.8	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-1.5	1.5			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	30		32.91	mg/L	109.7	90	110			
L63999-07DUP	DUP	08/03/07 19:51			41.5	41.5	mg/L				0	20	
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	50.15		50.57	mg/L	100.8	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-1.5	1.5			
L64014-01AS	AS	08/08/07 19:35	WI070727-1	300	68	357.6	mg/L	96.5	90	110			

Phelps Dodge SierritaACZ Project ID: **L64105**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64105-01	WG229613	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229639	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L64105**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64105
Date Received: 7/26/2007
Received By:
Date Printed: 7/26/2007

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)
NA4038		2.7	15

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64105
Date Received: 7/26/2007
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
L64105-01	FGW-550533		Y									☐
L64105-02	UGW-550533									X		☐

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: _____

CHAIN of CUSTODY

L64105

Address: 51 W. Wetmore Rd
Tucson AZ 85705
Telephone: 520 293-1500 x123

E-mail: Jimn@hgcine.com, billydennis@fmi.com
Telephone: 520 293-1200x112 520 648-8873

Address: 6200 W. Duval Mine Rd
PO Box 527 Green Valley AZ 85622
Telephone: 520 648-8857

YES	☒
NO	☐

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

ANALYSES REQUESTED (attach list or use quote number)

of Containers

$$\text{Ca}^{2+}, \text{Mg}^{2+}, \text{Na}^+, \text{K}^+, \text{Al}^{3+}, \text{Fe}^{3+}, \text{NO}_3^-, \text{NO}_2^-, \text{NH}_4^+$$

504

pH	EC	Temp
----	----	------

[illegible]

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

FGW = Filtered Ground Water sample
UGW = UnFiltered Ground Water sample

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

RELINQUISHED BY: _____ DATE:TIME _____ RECEIVED BY: _____ DATE:TIME _____

Ward, Wren	7/25/07; 1005	LMC 7-26-07	9:00

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

September 06, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L64302 – SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 08, 2007. This project was assigned to ACZ's project number, L64302. 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 L64302. 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.



Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: TMM-1

ACZ Sample ID: **L64302-01**

Date Sampled: 08/06/07 17:00

Date Received: 08/08/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	33.9			mg/L	0.2	1	08/17/07 0:07	djt
Magnesium, dissolved	M200.7 ICP	6.7			mg/L	0.2	1	08/17/07 0:07	djt
Potassium, dissolved	M200.7 ICP	3.3			mg/L	0.3	2	08/20/07 11:55	djt
Sodium, dissolved	M200.7 ICP	30.8			mg/L	0.3	2	08/20/07 11:55	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		152			mg/L	2	20	08/14/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/14/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/14/07 0:00	lcp/jlf
Total Alkalinity		152			mg/L	2	20	08/14/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		5.9			%			09/06/07 0:00	calc
Sum of Anions		3.2			meq/L	0.1	0.5	09/06/07 0:00	calc
Sum of Cations		3.6			meq/L	0.1	0.5	09/06/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	8			mg/L	1	5	08/14/07 13:13	mls/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/11/07 16:52	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	3.54		*	mg/L	0.06	0.3	08/21/07 22:15	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	200			mg/L	10	20	08/13/07 10:43	ear
Sulfate	SM4500 SO ₄ -D		U		mg/L	10	50	08/17/07 9:19	aeh
TDS (calculated)	Calculation	174			mg/L	10	50	09/06/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.15						09/06/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230251													
WG230251PBW1	PBW	08/14/07 10:08				U	mg/L		-20	20			
WG230251LCSW2	LCSW	08/14/07 10:20	WC070809-7	820		797.4	mg/L	97.2	90	110			
L64302-01DUP	DUP	08/14/07 14:23			152	147.3	mg/L				3.1	20	
WG230251PBW2	PBW	08/14/07 14:29				U	mg/L		-20	20			
WG230251LCSW5	LCSW	08/14/07 14:41	WC070809-7	820		807.9	mg/L	98.5	90	110			
WG230251PBW3	PBW	08/14/07 17:30				U	mg/L		-20	20			
WG230251LCSW8	LCSW	08/14/07 17:41	WC070809-7	820		809	mg/L	98.7	90	110			
WG230251PBW4	PBW	08/14/07 20:36				U	mg/L		-20	20			
WG230251LCSW11	LCSW	08/14/07 20:47	WC070809-7	820		808.9	mg/L	98.6	90	110			
WG230251LCSW14	LCSW	08/14/07 23:46	WC070809-7	820		810.1	mg/L	98.8	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.969	mg/L	98.5	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.09	0.09			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	1		1.148	mg/L	114.8	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	1	U	1.047	mg/L	104.7	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	1	U	1.007	mg/L	100.7	85	115	3.89	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230009													
WG230009ICV	ICV	08/10/07 7:10	MS070731-2	.02		.01835	mg/L	91.8	90	110			
WG230009ICB	ICB	08/10/07 7:16				U	mg/L		-0.0012	0.0012			
WG230009LFB	LFB	08/10/07 7:22	MS070712-3	.01		.00912	mg/L	91.2	85	115			
L64248-01AS	AS	08/10/07 8:56	MS070712-3	.01	U	.00818	mg/L	81.8	70	130			
L64248-01ASD	ASD	08/10/07 9:02	MS070712-3	.01	U	.00831	mg/L	83.1	70	130	1.58	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229926													
WG229926ICV	ICV	08/09/07 4:47	MS070731-2	.05		.05051	mg/L	101	90	110			
WG229926ICB	ICB	08/09/07 4:52				U	mg/L		-0.0015	0.0015			
WG229926LFB	LFB	08/09/07 4:58	MS070712-3	.05		.05018	mg/L	100.4	85	115			
L64293-08AS	AS	08/09/07 6:32	MS070712-3	.05	.0012	.05138	mg/L	100.4	70	130			
L64293-08ASD	ASD	08/09/07 6:38	MS070712-3	.05	.0012	.05194	mg/L	101.5	70	130	1.08	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		2.0404	mg/L	102	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.009	0.009			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.5099	mg/L	102	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	.052	.6178	mg/L	113.2	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	.052	.5604	mg/L	101.7	85	115	9.74	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229926													
WG229926ICV	ICV	08/09/07 4:47	MS070731-2	.05		.04878	mg/L	97.6	90	110			
WG229926ICB	ICB	08/09/07 4:52				U	mg/L		-0.0003	0.0003			
WG229926LFB	LFB	08/09/07 4:58	MS070712-3	.05		.04869	mg/L	97.4	85	115			
L64293-08AS	AS	08/09/07 6:32	MS070712-3	.05	U	.04896	mg/L	97.9	70	130			
L64293-08ASD	ASD	08/09/07 6:38	MS070712-3	.05	U	.04934	mg/L	98.7	70	130	0.77	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229926													
WG229926ICV	ICV	08/09/07 4:47	MS070731-2	.05		.05097	mg/L	101.9	90	110			
WG229926ICB	ICB	08/09/07 4:52				U	mg/L		-0.0003	0.0003			
WG229926LFB	LFB	08/09/07 4:58	MS070712-3	.05		.05021	mg/L	100.4	85	115			
L64293-08AS	AS	08/09/07 6:32	MS070712-3	.05	U	.0501	mg/L	100.2	70	130			
L64293-08ASD	ASD	08/09/07 6:38	MS070712-3	.05	U	.05009	mg/L	100.2	70	130	0.02	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	100		96.58	mg/L	96.6	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.6	0.6			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	67.97008		77.03	mg/L	113.3	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	67.97008	114	181.05	mg/L	98.6	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	67.97008	114	175.16	mg/L	90	85	115	3.31	20	

Chloride

325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230283													
WG230283ICB	ICB	08/14/07 9:53				U	mg/L		-3	3			
WG230283ICV	ICV	08/14/07 9:53	WI070314-1	55		57	mg/L	103.6	90	110			
WG230283LFB1	LFB	08/14/07 13:09	WI070712-1	30		31.1	mg/L	103.7	90	110			
L64291-03AS	AS	08/14/07 13:11	WI070712-1	30	15	44.7	mg/L	99	90	110			
L64299-03DUP	DUP	08/14/07 13:11			24	23.5	mg/L				2.1	20	
WG230283LFB2	LFB	08/14/07 13:13	WI070712-1	30		31	mg/L	103.3	90	110			
WG230283LFB3	LFB	08/14/07 13:27	WI070712-1	30		31	mg/L	103.3	90	110			

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.936	mg/L	96.8	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.03	0.03			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.488	mg/L	97.6	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	U	.555	mg/L	111	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	U	.502	mg/L	100.4	85	115	10.03	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.94	mg/L	97	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.03	0.03			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.495	mg/L	99	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	U	.55	mg/L	110	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	U	.502	mg/L	100.4	85	115	9.13	20	

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230116													
WG230116LCSW1	LCSW	08/11/07 15:36	PCN27303	1408.8		1428	µmhos/cm	101.4	90	110			
WG230116LCSW4	LCSW	08/11/07 18:44	PCN27303	1408.8		1434	µmhos/cm	101.8	90	110			
WG230116LCSW7	LCSW	08/11/07 21:57	PCN27303	1408.8		1439	µmhos/cm	102.1	90	110			
WG230116LCSW10	LCSW	08/12/07 2:09	PCN27303	1408.8		1431	µmhos/cm	101.6	90	110			
L64298-17DUP	DUP	08/12/07 5:46			4200	4220	µmhos/cm				0.5	20	
WG230116LCSW13	LCSW	08/12/07 10:19	PCN27303	1408.8		1425	µmhos/cm	101.1	90	110			

Copper, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.955	mg/L	97.8	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.03	0.03			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.5	mg/L	100	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	U	.564	mg/L	112.8	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	U	.511	mg/L	102.2	85	115	9.86	20	

Cyanide, total M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231102													
WG231102ICV	ICV	08/27/07 15:04	WI070825-6	.3		.311	mg/L	103.7	90	110			
WG231102ICB	ICB	08/27/07 15:05				U	mg/L		-0.015	0.015			
WG231124													
WG231124ICV	ICV	08/27/07 16:05	WI070825-6	.3		.3192	mg/L	106.4	90	110			
WG231124ICB	ICB	08/27/07 16:06				U	mg/L		-0.015	0.015			
WG230886LRB	LRB	08/27/07 16:07				U	mg/L		-0.015	0.015			
WG230886LFB	LFB	08/27/07 16:08	WI070813-4	.2		U	mg/L	0	90	110			N1
L64269-02DUP	DUP	08/27/07 16:09			U	U	mg/L				0	20	RA
L64269-07LFM	LFM	08/27/07 16:11	5XCEN	1	U	1.102	mg/L	110.2	90	110			
L64304-01DUP	DUP	08/27/07 16:21			U	U	mg/L				0	20	RA
L64304-02LFM	LFM	08/27/07 16:23	WI070813-4	.2	.099	.3075	mg/L	104.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230114													
WG230114ICV	ICV	08/11/07 12:39	WC070802-2	2		2.07	mg/L	103.5	90	110			
WG230114ICB	ICB	08/11/07 12:46				U	mg/L		-0.3	0.3			
WG230114LFB1	LFB	08/11/07 12:53	WC070730-1	5		4.98	mg/L	99.6	90	110			
WG230114LFB2	LFB	08/11/07 15:01	WC070730-1	5		4.88	mg/L	97.6	90	110			
L64290-03AS	AS	08/11/07 16:31	WC070730-1	5	.1	4.86	mg/L	95.2	90	110			
L64290-03DUP	DUP	08/11/07 16:38			.1	.11	mg/L				9.5	20	RA

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.972	mg/L	98.6	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.06	0.06			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	1		1.025	mg/L	102.5	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	1	.2	1.315	mg/L	111.5	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	1	.2	1.205	mg/L	100.5	85	115	8.73	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229926													
WG229926ICV	ICV	08/09/07 4:47	MS070731-2	.05		.04996	mg/L	99.9	90	110			
WG229926ICB	ICB	08/09/07 4:52				U	mg/L		-0.0003	0.0003			
WG229926LFB	LFB	08/09/07 4:58	MS070712-3	.05		.04899	mg/L	98	85	115			
L64293-08AS	AS	08/09/07 6:32	MS070712-3	.05	U	.04793	mg/L	95.9	70	130			
L64293-08ASD	ASD	08/09/07 6:38	MS070712-3	.05	U	.04783	mg/L	95.7	70	130	0.21	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	100		98.52	mg/L	98.5	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.6	0.6			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	54.96908		61.93	mg/L	112.7	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	54.96908	149	204.06	mg/L	100.2	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	54.96908	149	198.18	mg/L	89.5	85	115	2.92	20	

Manganese, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.9177	mg/L	95.9	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.015	0.015			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.5303	mg/L	106.1	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	.01	.5848	mg/L	115	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	.01	.5344	mg/L	104.9	85	115	9.01	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230399													
WG230399ICV	ICV	08/17/07 9:46	II070815-3	.00498		.00502	mg/L	100.8	95	105			
WG230399ICB	ICB	08/17/07 9:48				U	mg/L		-0.0002	0.0002			
WG230398													
WG230398LRB	LRB	08/17/07 15:48				U	mg/L		-0.00044	0.00044			
WG230398LFB	LFB	08/17/07 15:50	II070815-2	.002		.00211	mg/L	105.5	85	115			
L64290-02LFM	LFM	08/17/07 16:27	II070815-2	.002	U	.00192	mg/L	96	85	115			
L64290-02LFMD	LFMD	08/17/07 16:29	II070815-2	.002	U	.00203	mg/L	101.5	85	115	5.57	20	

Molybdenum, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.988	mg/L	99.4	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.03	0.03			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.542	mg/L	108.4	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	U	.492	mg/L	98.4	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	U	.49	mg/L	98	85	115	0.41	20	

Nickel, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.92	mg/L	96	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.03	0.03			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.493	mg/L	98.6	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	.02	.559	mg/L	107.8	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	.02	.509	mg/L	97.8	85	115	9.36	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
WG230763													
WG230763ICV	ICV	08/21/07 21:34	WI070609-1	2.416		2.224	mg/L	92.1	90	110			
WG230763ICB	ICB	08/21/07 21:36				U	mg/L		-0.06	0.06			
WG230763LFB	LFB	08/21/07 21:37	WI070307-9	2		1.884	mg/L	94.2	90	110			
L64392-13DUP	DUP	08/21/07 22:00			.17	.152	mg/L				11.2	20	RA
L64302-01AS	AS	08/21/07 22:17	WI070307-9	6	3.54	9.454	mg/L	98.6	90	110			

pH (lab) M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230116													
WG230116LCSW3	LCSW	08/11/07 15:50	PCN26677	6		6.03	units	100.5	90	110			
WG230116LCSW6	LCSW	08/11/07 18:58	PCN26677	6		6.04	units	100.7	90	110			
WG230116LCSW9	LCSW	08/11/07 22:09	PCN26677	6		6.04	units	100.7	90	110			
WG230116LCSW12	LCSW	08/12/07 2:23	PCN26677	6		6.03	units	100.5	90	110			
L64298-17DUP	DUP	08/12/07 5:46			8.6	8.57	units				0.3	20	
WG230116LCSW15	LCSW	08/12/07 10:45	PCN26677	6		6.03	units	100.5	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230564													
WG230564ICV	ICV	08/20/07 11:20	II070815-5	20		20.13	mg/L	100.7	95	105			
WG230564ICB	ICB	08/20/07 11:24				U	mg/L		-0.9	0.9			
WG230564LFB	LFB	08/20/07 11:37	II070814-4	99.76186		99.18	mg/L	99.4	85	115			
L64299-03AS	AS	08/20/07 11:44	II070814-4	99.76186	14.7	123.88	mg/L	109.4	85	115			
L64299-03ASD	ASD	08/20/07 11:48	II070814-4	99.76186	14.7	122.62	mg/L	108.2	85	115	1.02	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230159													
WG230159PBW	PBW	08/13/07 10:30				U	mg/L		-20	20			
WG230159LCSW	LCSW	08/13/07 10:32	PCN27692	260		300	mg/L	115.4	80	120			
L64303-06DUP	DUP	08/13/07 11:01			2260	2248	mg/L				0.5	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229926													
WG229926ICV	ICV	08/09/07 4:47	MS070731-2	.05		.05094	mg/L	101.9	90	110			
WG229926ICB	ICB	08/09/07 4:52				.00011	mg/L		-0.0003	0.0003			
WG229926LFB	LFB	08/09/07 4:58	MS070712-3	.05		.05022	mg/L	100.4	85	115			
L64293-08AS	AS	08/09/07 6:32	MS070712-3	.05	.0002	.05006	mg/L	99.7	70	130			
L64293-08ASD	ASD	08/09/07 6:38	MS070712-3	.05	.0002	.04838	mg/L	96.4	70	130	3.41	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230564													
WG230564ICV	ICV	08/20/07 11:20	II070815-5	100		100.4	mg/L	100.4	95	105			
WG230564ICV	ICV	08/20/07 11:20	II070815-5	100		101.72	mg/L	101.7	95	105			
WG230564ICB	ICB	08/20/07 11:24				U	mg/L		-6	6			
WG230564ICB	ICB	08/20/07 11:24				U	mg/L		-0.9	0.9			
WG230564LFB	LFB	08/20/07 11:37	II070814-4	98.21624		97	mg/L	98.8	85	115			
WG230564LFB	LFB	08/20/07 11:37	II070814-4	98.21624		98.15	mg/L	99.9	85	115			
L64299-03AS	AS	08/20/07 11:44	II070814-4	98.21624	66.8	170.84	mg/L	105.9	85	115			
L64299-03ASD	ASD	08/20/07 11:48	II070814-4	98.21624	66.8	170.07	mg/L	105.1	85	115	0.45	20	

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230513													
WG230513PBW	PBW	08/17/07 8:28				U	mg/L		-30	30			
WG230513LCSW	LCSW	08/17/07 8:30	WC070705-2	100		91	mg/L	91	80	120			
L64303-04DUP	DUP	08/17/07 9:33			2130	2124	mg/L				0.3	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64302**

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229926													
WG229926ICV	ICV	08/09/07 4:47	MS070731-2	.05		.05293	mg/L	105.9	90	110			
WG229926ICB	ICB	08/09/07 4:52				U	mg/L		-0.0003	0.0003			
WG229926LFB	LFB	08/09/07 4:58	MS070712-3	.05		.05119	mg/L	102.4	85	115			
L64293-08AS	AS	08/09/07 6:32	MS070712-3	.05	U	.05017	mg/L	100.3	70	130			
L64293-08ASD	ASD	08/09/07 6:38	MS070712-3	.05	U	.04988	mg/L	99.8	70	130	0.58	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230479													
WG230479ICV	ICV	08/16/07 23:09	II070815-5	2		1.926	mg/L	96.3	95	105			
WG230479ICB	ICB	08/16/07 23:14				U	mg/L		-0.03	0.03			
WG230479LFB	LFB	08/16/07 23:30	II070814-4	.5		.563	mg/L	112.6	85	115			
L64299-01AS	AS	08/16/07 23:38	II070814-4	.5	.03	.572	mg/L	108.4	85	115			
L64299-01ASD	ASD	08/16/07 23:42	II070814-4	.5	.03	.529	mg/L	99.8	85	115	7.81	20	

Phelps Dodge SierritaACZ Project ID: **L64302**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64302-01	WG230886	Cyanide, total	M335.4 - Manual Distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG231124		M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	N1	See Case Narrative.
			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).
	WG230114	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).
	WG230763	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).

Phelps Dodge Sierrita

ACZ Project ID: **L64302**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64302
Date Received: 8/8/2007
Received By:
Date Printed: 8/8/2007

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)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1936		3.5	16

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

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64302
 Date Received: 8/8/2007
 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
L64302-01	TMM-1		Y			Y						☐

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

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

August 20, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Rick Zimmerman, Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L64254

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 03, 2007. This project has been assigned to ACZ's project number, L64254. 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 L64254. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 20, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-1B-FGW

ACZ Sample ID: **L64254-01**

Date Sampled: 08/02/07 14:45

Date Received: 08/03/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	321			mS/cm			08/02/07 14:45	ma
pH (Field)	Field Measurement	7.4			units			08/02/07 14:45	ma
Temperature (Field)	Field Measurement	30.7			C			08/02/07 14:45	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	32.4			mg/L	0.2	1	08/16/07 21:26	djt
Magnesium, dissolved	M200.7 ICP	4.3			mg/L	0.2	1	08/16/07 21:26	djt
Potassium, dissolved	M200.7 ICP	3.2			mg/L	0.3	2	08/16/07 21:26	djt
Sodium, dissolved	M200.7 ICP	40.5			mg/L	0.3	2	08/16/07 21:26	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		140			mg/L	2	20	08/08/07 0:00	jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/08/07 0:00	jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/08/07 0:00	jlf
Total Alkalinity		140		*	mg/L	2	20	08/08/07 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.7			%			08/17/07 16:14	calc
Sum of Anions		3.6			meq/L	0.1	0.5	08/17/07 16:14	calc
Sum of Cations		3.8			meq/L	0.1	0.5	08/17/07 16:14	calc
Chloride	M300.0 - Ion Chromatography	12.4		*	mg/L	0.5	3	08/10/07 15:31	jag
Fluoride	M300.0 - Ion Chromatography	0.6		*	mg/L	0.1	0.5	08/10/07 15:31	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.71			mg/L	0.02	0.1	08/17/07 16:14	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.71	H	*	mg/L	0.02	0.1	08/07/07 18:36	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	08/07/07 18:36	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	220			mg/L	10	20	08/09/07 13:33	aeh
Sulfate	300.0 - Ion Chromatography	18.9			mg/L	0.5	3	08/10/07 15:31	jag
TDS (calculated)	Calculation	199			mg/L	10	50	08/17/07 16:14	calc
TDS (ratio - measured/calculated)	Calculation	1.11						08/17/07 16:14	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-1B-UGW

ACZ Sample ID: **L64254-02**

Date Sampled: 08/02/07 14:45

Date Received: 08/03/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	321			mS/cm			08/02/07 14:45	ma
pH (Field)	Field Measurement	7.4			units			08/02/07 14:45	ma
Temperature (Field)	Field Measurement	30.7			C			08/02/07 14:45	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	18.9			mg/L	0.5	3	08/10/07 15:49	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64254**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229895													
WG229895PBW1	PBW	08/08/07 17:01				U	mg/L		-20	20			
WG229895LCSW2	LCSW	08/08/07 17:13	WC070723-9	820		800.6	mg/L	97.6	90	110			
WG229895PBW2	PBW	08/08/07 20:01				U	mg/L		-20	20			
WG229895LCSW5	LCSW	08/08/07 20:13	WC070723-9	820		800	mg/L	97.6	90	110			
L64255-02DUP	DUP	08/08/07 22:57			318	314.4	mg/L				1.1	20	
WG229895PBW3	PBW	08/08/07 23:20				U	mg/L		-20	20			
WG229895LCSW8	LCSW	08/08/07 23:30	WC070723-9	820		801.1	mg/L	97.7	90	110			
WG229895PBW4	PBW	08/09/07 2:17				U	mg/L		-20	20			
WG229895LCSW11	LCSW	08/09/07 2:29	WC070723-9	820		804.1	mg/L	98.1	90	110			
WG229895LCSW14	LCSW	08/09/07 5:38	WC070723-9	820		805	mg/L	98.2	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230464													
WG230464ICV	ICV	08/16/07 20:19	II070815-5	100		96.81	mg/L	96.8	95	105			
WG230464ICB	ICB	08/16/07 20:24				U	mg/L		-0.6	0.6			
WG230464LFB	LFB	08/16/07 20:40	II070814-4	67.97008		69.34	mg/L	102	85	115			
L64131-03AS	AS	08/16/07 20:48	II070814-4	67.97008	36.6	102.42	mg/L	96.8	85	115			
L64131-03ASD	ASD	08/16/07 20:52	II070814-4	67.97008	36.6	103.76	mg/L	98.8	85	115	1.3	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230073													
WG230073ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG230073ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG230073ICV1	ICV	08/10/07 14:37	IC070710-1	20		20.11	mg/L	100.6	90	110			
WG230073ICB1	ICB	08/10/07 14:55				U	mg/L		-1.5	1.5			
WG230073LFB	LFB	08/10/07 15:13	WI070727-1	30		29.43	mg/L	98.1	90	110			
L64277-01DUP	DUP	08/10/07 16:26			1	1.04	mg/L				3.9	20	RA
L64277-02AS	AS	08/10/07 17:02	WI070727-1	30	1	30.81	mg/L	99.4	90	110			

Phelps Dodge Sierrita

ACZ Project ID: **L64254**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG230073													
WG230073ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG230073ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG230073ICV1	ICV	08/10/07 14:37	IC070710-1	3.984		4.11	mg/L	103.2	90	110			
WG230073ICB1	ICB	08/10/07 14:55				.15	mg/L		-0.3	0.3			
WG230073LFB	LFB	08/10/07 15:13	WI070727-1	1.5		1.5	mg/L	100	90	110			
L64277-01DUP	DUP	08/10/07 16:26			.1	.11	mg/L				9.5	20	RA
L64277-02AS	AS	08/10/07 17:02	WI070727-1	1.5	U	1.54	mg/L	102.7	90	110			

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230464													
WG230464ICV	ICV	08/16/07 20:19	II070815-5	100		98.8	mg/L	98.8	95	105			
WG230464ICB	ICB	08/16/07 20:24				U	mg/L		-0.6	0.6			
WG230464LFB	LFB	08/16/07 20:40	II070814-4	54.96908		56.95	mg/L	103.6	85	115			
L64131-03AS	AS	08/16/07 20:48	II070814-4	54.96908	38.9	92.36	mg/L	97.3	85	115			
L64131-03ASD	ASD	08/16/07 20:52	II070814-4	54.96908	38.9	93.44	mg/L	99.2	85	115	1.16	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229813													
WG229813ICV	ICV	08/07/07 18:09	WI070609-1	2.416		2.4	mg/L	99.3	90	110			
WG229813ICB	ICB	08/07/07 18:11				U	mg/L		-0.06	0.06			
WG229818													
WG229818ICV	ICV	08/07/07 18:32	WI070609-1	2.416		2.283	mg/L	94.5	90	110			
WG229818ICB	ICB	08/07/07 18:33				U	mg/L		-0.06	0.06			
WG229818LFB	LFB	08/07/07 18:34	WI070307-9	2		1.965	mg/L	98.3	90	110			
L64254-01AS	AS	08/07/07 18:37	WI070307-9	2	.71	2.013	mg/L	65.2	90	110			M2
L64274-01DUP	DUP	08/07/07 18:39			.04	.041	mg/L				2.5	20	RA

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229813													
WG229813ICV	ICV	08/07/07 18:09	WI070609-1	.609		.624	mg/L	102.5	90	110			
WG229813ICB	ICB	08/07/07 18:11				U	mg/L		-0.03	0.03			
WG229818													
WG229818ICV	ICV	08/07/07 18:32	WI070609-1	.609		.631	mg/L	103.6	90	110			
WG229818ICB	ICB	08/07/07 18:33				U	mg/L		-0.03	0.03			
WG229818LFB	LFB	08/07/07 18:34	WI070307-9	1		1.02	mg/L	102	90	110			
L64254-01AS	AS	08/07/07 18:37	WI070307-9	1	U	1.05	mg/L	105	90	110			
L64274-01DUP	DUP	08/07/07 18:39			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64254**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230464													
WG230464ICV	ICV	08/16/07 20:19	II070815-5	20		20.67	mg/L	103.4	95	105			
WG230464ICB	ICB	08/16/07 20:24				U	mg/L		-0.9	0.9			
WG230464LFB	LFB	08/16/07 20:40	II070814-4	99.76186		107.73	mg/L	108	85	115			
L64131-03AS	AS	08/16/07 20:48	II070814-4	99.76186	4.4	113.89	mg/L	109.8	85	115			
L64131-03ASD	ASD	08/16/07 20:52	II070814-4	99.76186	4.4	115.5	mg/L	111.4	85	115	1.4	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229962													
WG229962PBW	PBW	08/09/07 13:20				U	mg/L		-20	20			
WG229962LCSW	LCSW	08/09/07 13:21	PCN27688	260		268	mg/L	103.1	80	120			
L64255-02DUP	DUP	08/09/07 13:38			470	474	mg/L				0.8	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230464													
WG230464ICV	ICV	08/16/07 20:19	II070815-5	100		103.53	mg/L	103.5	95	105			
WG230464ICB	ICB	08/16/07 20:24				U	mg/L		-0.9	0.9			
WG230464LFB	LFB	08/16/07 20:40	II070814-4	98.21624		106.12	mg/L	108	85	115			
L64131-03AS	AS	08/16/07 20:48	II070814-4	98.21624	276	361.73	mg/L	87.3	85	115			
L64131-03ASD	ASD	08/16/07 20:52	II070814-4	98.21624	276	364.24	mg/L	89.8	85	115	0.69	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230073													
WG230073ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG230073ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG230073ICV1	ICV	08/10/07 14:37	IC070710-1	50.15		50.61	mg/L	100.9	90	110			
WG230073ICB1	ICB	08/10/07 14:55				U	mg/L		-1.5	1.5			
WG230073LFB	LFB	08/10/07 15:13	WI070727-1	30		30.61	mg/L	102	90	110			
L64277-01DUP	DUP	08/10/07 16:26			6.6	6.61	mg/L				0.2	20	
L64277-02AS	AS	08/10/07 17:02	WI070727-1	30	1.5	31.05	mg/L	98.5	90	110			

Phelps Dodge SierritaACZ Project ID: **L64254**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64254-01	WG230073	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229818	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample analysis performed past holding time.
			M353.2 - Automated Cadmium Reduction	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample analysis performed past holding time.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229895	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L64254**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64254
Date Received: 8/3/2007
Received By:
Date Printed: 8/3/2007

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)
NA4016		3.7	15

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64254
Date Received: 8/3/2007
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
L64254-01	MO-2007-1B-FGW		Y									☐
L64254-02	MO-2007-1B-UGW									X		☐

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

3-L64254

Report to:

Name: Rick Zimmerman
Company: Hydro Gas Chem Inc.
E-mail: rickz@hgcinc.com

Address: 51 W. Weymore Rd
Lucas AZ 85705
Telephone: 520 293-1550 x131

Copy of Report to:

Name: Ned Hall/Bill Dorris/Jim Norris
Company: PDSI/HGC

E-mail: Jimn@hgcinc.com/billy-dorris@cmi.com
Telephone: 520)293-1500x112, 520)648-8873

Invoice to:

Name: Ned Hall
Company: PDST
E-mail: ned-hall@fmi.com

Address: 6200 W. Durval Mine Rd.
PO Box 527 Green Valley, AZ 85622
Telephone: 520-648-8857

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 #: Sierra Short
Project/PO #: OJQ 325
Reporting state for compliance testing: AZ
Sampler's Name: Mark Aineson
Are any samples NRC licensable material? No

# of Containers	
	$MgNaK$
	$1K TDS S_{O_4}^{2-}$
	$F^- NO_3^- NO_2^-$
	PO_4^{3-}

[illegible]

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

REMARKS

FGW = Filtered Groundwater Sample
UGW = Unfiltered Groundwater Sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>[Signature]</i>	1500: 8/2/07 1500	<i>[Signature]</i>	8-3 07 9:11

August 13, 2007

Report to:

Ned Hall
Phelps Dodge Sierrita
P.O. Box 527 6200 W. Duval Mine Rd.
Green Valley, AZ 85622-0527

Bill to:

Accounts Payable
Phelps Dodge Sierrita
P.O. Box 2671
Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L64202

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 01, 2007. This project has been assigned to ACZ's project number, L64202. 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 L64202. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 13, 2007. 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.



Phelps Dodge Sierrita

August 13, 2007

Project ID: OJ03Z5

ACZ Project ID: L64202

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from Phelps Dodge Sierrita on August 1, 2007. 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 L64202. 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.

Phelps Dodge Sierrita

Project ID: OJ03Z5
Sample ID: MO-2007-IC-F

ACZ Sample ID: **L64202-01**
Date Sampled: 07/31/07 15:20
Date Received: 08/01/07
Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	523			mS/cm			07/31/07 15:20	kg
pH (Field)	Field Measurement	7.4			units			07/31/07 15:20	kg
Temperature (Field)	Field Measurement	27.9			C			07/31/07 15:20	kg

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	57.5			mg/L	0.2	1	08/09/07 3:47	djt
Magnesium, dissolved	M200.7 ICP	9.3			mg/L	0.2	1	08/09/07 3:47	djt
Potassium, dissolved	M200.7 ICP	4.8			mg/L	0.3	2	08/09/07 3:47	djt
Sodium, dissolved	M200.7 ICP	49.3			mg/L	0.3	2	08/09/07 3:47	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		124		*	mg/L	2	20	08/06/07 0:00	lcp/jlf
Carbonate as CaCO3			U	*	mg/L	2	20	08/06/07 0:00	lcp/jlf
Hydroxide as CaCO3			U	*	mg/L	2	20	08/06/07 0:00	lcp/jlf
Total Alkalinity		124		*	mg/L	2	20	08/06/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.5			%			08/13/07 0:00	calc
Sum of Anions		5.5			meq/L	0.1	0.5	08/13/07 0:00	calc
Sum of Cations		5.9			meq/L	0.1	0.5	08/13/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	22.4			mg/L	0.5	3	08/03/07 22:52	jag
Fluoride	M300.0 - Ion Chromatography	0.5		*	mg/L	0.1	0.5	08/03/07 22:52	jag
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.82			mg/L	0.02	0.1	08/13/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.82		*	mg/L	0.02	0.1	08/01/07 18:08	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/01/07 18:08	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	380			mg/L	10	20	08/07/07 9:18	aeh
Sulfate	300.0 - Ion Chromatography	112			mg/L	5	30	08/08/07 20:47	jag
TDS (calculated)	Calculation	334			mg/L	10	50	08/13/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						08/13/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: MO-2007-IC-U

ACZ Sample ID: **L64202-02**

Date Sampled: 07/31/07 15:20

Date Received: 08/01/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	114			mg/L	5	30	08/08/07 21:42	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L64202**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229683													
WG229683PBW1	PBW	08/06/07 11:12				U	mg/L		-20	20			
WG229683LCSW2	LCSW	08/06/07 11:23	WC070723-9	820		816.7	mg/L	99.6	90	110			
WG229683PBW2	PBW	08/06/07 14:13				U	mg/L		-20	20			
WG229683LCSW5	LCSW	08/06/07 14:26	WC070723-9	820		823.2	mg/L	100.4	90	110			
WG229683PBW3	PBW	08/06/07 17:41				U	mg/L		-20	20			
WG229683LCSW8	LCSW	08/06/07 17:54	WC070723-9	820		822.9	mg/L	100.4	90	110			
L64210-01DUP	DUP	08/06/07 20:48			99	99.1	mg/L				0.1	20	
WG229683PBW4	PBW	08/06/07 20:54				U	mg/L		-20	20			
WG229683LCSW11	LCSW	08/06/07 21:06	WC070723-9	820		824.7	mg/L	100.6	90	110			
WG229683LCSW14	LCSW	08/06/07 23:51	WC070723-9	820		825.4	mg/L	100.7	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229899													
WG229899ICV	ICV	08/09/07 1:29	II070725-7	100		97.05	mg/L	97.1	95	105			
WG229899ICB	ICB	08/09/07 1:33				U	mg/L		-0.6	0.6			
WG229899LFB	LFB	08/09/07 1:50	II070806-9	67.97008		68.56	mg/L	100.9	85	115			
L64189-10AS	AS	08/09/07 2:57	II070806-9	67.97008	113	179.72	mg/L	98.2	85	115			
L64189-10ASD	ASD	08/09/07 3:01	II070806-9	67.97008	113	175.95	mg/L	92.6	85	115	2.12	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	20		20.22	mg/L	101.1	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-1.5	1.5			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	30		31.38	mg/L	104.6	90	110			
L63999-07DUP	DUP	08/03/07 19:51			27.8	27.75	mg/L				0.2	20	
L64014-01AS	AS	08/03/07 20:28	WI070727-1	30	66	95.08	mg/L	96.9	90	110			
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	20		20.11	mg/L	100.6	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-1.5	1.5			
L64014-01AS	AS	08/08/07 19:35	WI070727-1	300	62	356.8	mg/L	98.3	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64202**

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	3.984		4.14	mg/L	103.9	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-0.3	0.3			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	1.5		1.61	mg/L	107.3	90	110			
L63999-07DUP	DUP	08/03/07 19:51			U	U	mg/L				0	20	RA
L64014-01AS	AS	08/03/07 20:28	WI070727-1	1.5	.2	1.92	mg/L	114.7	90	110			M1
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	3.984		4.09	mg/L	102.7	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-0.3	0.3			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229899													
WG229899ICV	ICV	08/09/07 1:29	II070725-7	100		98.49	mg/L	98.5	95	105			
WG229899ICB	ICB	08/09/07 1:33				U	mg/L		-0.6	0.6			
WG229899LFB	LFB	08/09/07 1:50	II070806-9	54.96908		55.4	mg/L	100.8	85	115			
L64189-10AS	AS	08/09/07 2:57	II070806-9	54.96908	22.1	78.74	mg/L	103	85	115			
L64189-10ASD	ASD	08/09/07 3:01	II070806-9	54.96908	22.1	77.24	mg/L	100.3	85	115	1.92	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229490													
WG229490ICV	ICV	08/01/07 17:47	WI070609-1	2.416		2.47	mg/L	102.2	90	110			
WG229490ICB	ICB	08/01/07 17:48				U	mg/L		-0.06	0.06			
WG229490LFB	LFB	08/01/07 17:53	WI070307-9	2		2.168	mg/L	108.4	90	110			
L64185-01AS	AS	08/01/07 17:56	WI070307-9	2	U	2.155	mg/L	107.8	90	110			
L64185-02DUP	DUP	08/01/07 17:58			U	.022	mg/L				200	20	RA

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229490													
WG229490ICV	ICV	08/01/07 17:47	WI070609-1	.609		.647	mg/L	106.2	90	110			
WG229490ICB	ICB	08/01/07 17:48				U	mg/L		-0.03	0.03			
WG229490LFB	LFB	08/01/07 17:53	WI070307-9	1		1.078	mg/L	107.8	90	110			
L64185-01AS	AS	08/01/07 17:56	WI070307-9	1	.03	1.102	mg/L	107.2	90	110			
L64185-02DUP	DUP	08/01/07 17:58			.09	.091	mg/L				1.1	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64202**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229899													
WG229899ICV	ICV	08/09/07 1:29	II070725-7	20		20.13	mg/L	100.7	95	105			
WG229899ICB	ICB	08/09/07 1:33				U	mg/L		-0.9	0.9			
WG229899LFB	LFB	08/09/07 1:50	II070806-9	99.76186		102.4	mg/L	102.6	85	115			
L64189-10AS	AS	08/09/07 2:57	II070806-9	99.76186	16.8	127.68	mg/L	111.1	85	115			
L64189-10ASD	ASD	08/09/07 3:01	II070806-9	99.76186	16.8	124.13	mg/L	107.6	85	115	2.82	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229752													
WG229752PBW	PBW	08/07/07 9:00				U	mg/L		-20	20			
WG229752LCSW	LCSW	08/07/07 9:01	PCN27688	260		306	mg/L	117.7	80	120			
L64217-04DUP	DUP	08/07/07 9:29			6820	6780	mg/L				0.6	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229899													
WG229899ICV	ICV	08/09/07 1:29	II070725-7	100		100.25	mg/L	100.3	95	105			
WG229899ICB	ICB	08/09/07 1:33				U	mg/L		-0.9	0.9			
WG229899LFB	LFB	08/09/07 1:50	II070806-9	98.21624		100.45	mg/L	102.3	85	115			
L64189-10AS	AS	08/09/07 2:57	II070806-9	98.21624	116	216.52	mg/L	102.3	85	115			
L64189-10ASD	ASD	08/09/07 3:01	II070806-9	98.21624	116	212.59	mg/L	98.3	85	115	1.83	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG229613													
WG229613ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG229613ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG229613ICV1	ICV	08/03/07 14:25	IC070710-1	50.15		51.03	mg/L	101.8	90	110			
WG229613ICB1	ICB	08/03/07 14:44				U	mg/L		-1.5	1.5			
WG229613LFB	LFB	08/03/07 15:02	WI070727-1	30		32.91	mg/L	109.7	90	110			
L63999-07DUP	DUP	08/03/07 19:51			41.5	41.5	mg/L				0	20	
WG229613ICV1	ICV	08/08/07 17:28	IC070710-1	50.15		50.57	mg/L	100.8	90	110			
WG229613ICB1	ICB	08/08/07 17:46				U	mg/L		-1.5	1.5			
L64014-01AS	AS	08/08/07 19:35	WI070727-1	300	68	357.6	mg/L	96.5	90	110			

Phelps Dodge SierritaACZ Project ID: **L64202**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64202-01	WG229683	Bicarbonate as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Carbonate as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG229613	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229683	Hydroxide as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG229490	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229683	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L64202**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64202
Date Received: 8/1/2007
Received By:
Date Printed: 8/1/2007

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)
NA4088		14.8	14

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64202
Date Received: 8/1/2007
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
L64202-01	MO-2007-IC-F		Y									☐
L64202-02	MO-2007-IC-U									X		☐

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

September 06, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L64119 – SHORT REVISED

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 27, 2007. This project was assigned to ACZ's project number, L64119. 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 L64070. 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.



Phelps Dodge Sierrita

September 06, 2007

Project ID: OJ03DL

ACZ Project ID: L64119

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 13 ground water samples from Phelps Dodge Sierrita on July 27, 2007. 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 L64119. 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, organic 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 re-analyze the Sulfate on sample L64119-07.

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-6A

ACZ Sample ID: **L64119-01**

Date Sampled: 07/25/07 09:40

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	512			mg/L	0.4	2	08/08/07 5:56	djt
Magnesium, dissolved	M200.7 ICP	89.7			mg/L	0.4	2	08/08/07 5:56	djt
Potassium, dissolved	M200.7 ICP	8.0		*	mg/L	0.6	3	08/08/07 5:56	djt
Sodium, dissolved	M200.7 ICP	231			mg/L	0.6	3	08/08/07 5:56	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		108			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		108			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-2.8			%			08/17/07 0:00	calc
Sum of Anions		45.8			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		43.3			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	110		*	mg/L	10	50	08/06/07 16:37	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:02	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.76		*	mg/L	0.02	0.1	08/10/07 20:36	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3180			mg/L	10	20	08/01/07 14:47	lcp
Sulfate	SM4500 SO ₄ -D	1930			mg/L	10	50	08/08/07 15:27	ear
TDS (calculated)	Calculation	2950			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.08						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW12

ACZ Sample ID: **L64119-02**

Date Sampled: 07/25/07 09:10

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	474			mg/L	0.4	2	08/08/07 6:09	djt
Magnesium, dissolved	M200.7 ICP	95.7			mg/L	0.4	2	08/08/07 6:09	djt
Potassium, dissolved	M200.7 ICP	7.8		*	mg/L	0.6	3	08/08/07 6:09	djt
Sodium, dissolved	M200.7 ICP	174			mg/L	0.6	3	08/08/07 6:09	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		112			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		112			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-2.0			%			08/17/07 0:00	calc
Sum of Anions		41.0			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		39.4			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	110		*	mg/L	10	50	08/06/07 16:37	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:12	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.19			mg/L	0.02	0.1	08/04/07 17:15	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2900			mg/L	10	20	08/01/07 14:48	lcp
Sulfate	SM4500 SO ₄ -D	1700			mg/L	10	50	08/08/07 15:30	ear
TDS (calculated)	Calculation	2630			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.10						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW13

ACZ Sample ID: **L64119-03**

Date Sampled: 07/25/07 09:00

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	508			mg/L	0.4	2	08/08/07 6:13	djt
Magnesium, dissolved	M200.7 ICP	99.2			mg/L	0.4	2	08/08/07 6:13	djt
Potassium, dissolved	M200.7 ICP	7.2		*	mg/L	0.6	3	08/08/07 6:13	djt
Sodium, dissolved	M200.7 ICP	219			mg/L	0.6	3	08/08/07 6:13	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		114			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		114			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.0			%			08/17/07 0:00	calc
Sum of Anions		46.1			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		43.4			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	110			mg/L	10	50	08/06/07 16:46	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:15	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.50			mg/L	0.02	0.1	08/04/07 17:16	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3210			mg/L	10	20	08/01/07 14:50	lcp
Sulfate	SM4500 SO ₄ -D	1940			mg/L	10	50	08/08/07 15:34	ear
TDS (calculated)	Calculation	2950			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW14

ACZ Sample ID: **L64119-04**

Date Sampled: 07/25/07 08:50

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	532			mg/L	0.4	2	08/08/07 6:17	djt
Magnesium, dissolved	M200.7 ICP	115			mg/L	0.4	2	08/08/07 6:17	djt
Potassium, dissolved	M200.7 ICP	7.9		*	mg/L	0.6	3	08/08/07 6:17	djt
Sodium, dissolved	M200.7 ICP	158			mg/L	0.6	3	08/08/07 6:17	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		125			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		125			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.1			%			08/17/07 0:00	calc
Sum of Anions		46.0			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		43.2			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	120			mg/L	10	50	08/06/07 16:46	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:18	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.42			mg/L	0.02	0.1	08/04/07 17:17	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3170			mg/L	10	20	08/01/07 14:51	lcp
Sulfate	SM4500 SO ₄ -D	1910			mg/L	10	50	08/08/07 15:37	ear
TDS (calculated)	Calculation	2920			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW15

ACZ Sample ID: **L64119-05**

Date Sampled: 07/25/07 08:40

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	542			mg/L	0.4	2	08/08/07 6:30	djt
Magnesium, dissolved	M200.7 ICP	105			mg/L	0.4	2	08/08/07 6:30	djt
Potassium, dissolved	M200.7 ICP	7.1		*	mg/L	0.6	3	08/08/07 6:30	djt
Sodium, dissolved	M200.7 ICP	132			mg/L	0.6	3	08/08/07 6:30	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		127			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		127			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.4			%			08/17/07 0:00	calc
Sum of Anions		42.9			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		41.7			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	120			mg/L	10	50	08/06/07 16:48	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:21	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.05			mg/L	0.04	0.2	08/04/07 17:39	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3100			mg/L	10	20	08/01/07 14:52	lcp
Sulfate	SM4500 SO ₄ -D	1760			mg/L	10	50	08/08/07 15:40	ear
TDS (calculated)	Calculation	2740			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW16

ACZ Sample ID: **L64119-06**

Date Sampled: 07/25/07 08:30

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	542			mg/L	0.4	2	08/08/07 6:34	djt
Magnesium, dissolved	M200.7 ICP	127			mg/L	0.4	2	08/08/07 6:34	djt
Potassium, dissolved	M200.7 ICP	7.0		*	mg/L	0.6	3	08/08/07 6:34	djt
Sodium, dissolved	M200.7 ICP	116			mg/L	0.6	3	08/08/07 6:34	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		125			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		125			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.6			%			08/17/07 0:00	calc
Sum of Anions		44.2			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		42.8			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	140			mg/L	10	50	08/06/07 16:48	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:24	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.22			mg/L	0.02	0.1	08/04/07 17:22	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3190			mg/L	10	20	08/01/07 14:54	lcp
Sulfate	SM4500 SO ₄ -D	1800			mg/L	10	50	08/08/07 15:43	ear
TDS (calculated)	Calculation	2810			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW17

ACZ Sample ID: **L64119-07**

Date Sampled: 07/25/07 08:20

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	504			mg/L	0.4	2	08/08/07 6:38	djt
Magnesium, dissolved	M200.7 ICP	124			mg/L	0.4	2	08/08/07 6:38	djt
Potassium, dissolved	M200.7 ICP	7.6		*	mg/L	0.6	3	08/08/07 6:38	djt
Sodium, dissolved	M200.7 ICP	122			mg/L	0.6	3	08/08/07 6:38	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		128			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		128			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.9			%			09/06/07 0:00	calc
Sum of Anions		42.5			meq/L	0.1	0.5	09/06/07 0:00	calc
Sum of Cations		40.9			meq/L	0.1	0.5	09/06/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	130			mg/L	10	50	08/06/07 16:48	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:28	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.30			mg/L	0.02	0.1	08/04/07 17:28	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3050			mg/L	10	20	08/01/07 14:55	lcp
Sulfate	SM4500 SO ₄ -D	1730	H	*	mg/L	10	50	08/29/07 9:58	lcp
TDS (calculated)	Calculation	2690			mg/L	10	50	09/06/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						09/06/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW18

ACZ Sample ID: **L64119-08**

Date Sampled: 07/25/07 08:10

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	524			mg/L	0.4	2	08/08/07 6:43	djt
Magnesium, dissolved	M200.7 ICP	112			mg/L	0.4	2	08/08/07 6:43	djt
Potassium, dissolved	M200.7 ICP	7.2		*	mg/L	0.6	3	08/08/07 6:43	djt
Sodium, dissolved	M200.7 ICP	106			mg/L	0.6	3	08/08/07 6:43	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		129			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		129			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.6			%			08/17/07 0:00	calc
Sum of Anions		43.2			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		40.2			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	130			mg/L	10	50	08/06/07 16:48	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/06/07 14:31	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.09			mg/L	0.02	0.1	08/04/07 17:29	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3030			mg/L	10	20	08/01/07 14:56	lcp
Sulfate	SM4500 SO ₄ -D	1760			mg/L	10	50	08/08/07 15:50	ear
TDS (calculated)	Calculation	2720			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.11						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW19

ACZ Sample ID: **L64119-09**

Date Sampled: 07/25/07 07:50

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	486			mg/L	0.4	2	08/08/07 6:47	djt
Magnesium, dissolved	M200.7 ICP	121			mg/L	0.4	2	08/08/07 6:47	djt
Potassium, dissolved	M200.7 ICP	7.8		*	mg/L	0.6	3	08/08/07 6:47	djt
Sodium, dissolved	M200.7 ICP	122			mg/L	0.6	3	08/08/07 6:47	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		145			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		145			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.7			%			08/17/07 0:00	calc
Sum of Anions		41.2			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		39.8			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	130			mg/L	10	50	08/06/07 16:48	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/07/07 11:37	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.04			mg/L	0.02	0.1	08/04/07 17:31	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2930			mg/L	10	20	08/01/07 14:58	lcp
Sulfate	SM4500 SO ₄ -D	1650			mg/L	10	50	08/08/07 15:53	ear
TDS (calculated)	Calculation	2600			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW23

ACZ Sample ID: **L64119-10**

Date Sampled: 07/25/07 10:00

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	525			mg/L	0.4	2	08/08/07 6:51	djt
Magnesium, dissolved	M200.7 ICP	98.7			mg/L	0.4	2	08/08/07 6:51	djt
Potassium, dissolved	M200.7 ICP	9.3		*	mg/L	0.6	3	08/08/07 6:51	djt
Sodium, dissolved	M200.7 ICP	169			mg/L	0.6	3	08/08/07 6:51	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		151			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		151			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.4			%			08/17/07 0:00	calc
Sum of Anions		42.3			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		42.0			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	150			mg/L	10	50	08/06/07 16:49	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/07/07 11:47	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.07			mg/L	0.02	0.1	08/04/07 17:32	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3070			mg/L	10	20	08/01/07 14:59	lcp
Sulfate	SM4500 SO ₄ -D	1670			mg/L	10	50	08/08/07 15:56	ear
TDS (calculated)	Calculation	2710			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/17/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: DUP072507A

ACZ Sample ID: **L64119-13**

Date Sampled: 07/25/07 00:00

Date Received: 07/27/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	501		*	mg/L	0.4	2	08/08/07 6:55	djt
Magnesium, dissolved	M200.7 ICP	98.0		*	mg/L	0.4	2	08/08/07 6:55	djt
Potassium, dissolved	M200.7 ICP	7.0		*	mg/L	0.6	3	08/08/07 6:55	djt
Sodium, dissolved	M200.7 ICP	216		*	mg/L	0.6	3	08/08/07 6:55	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		115			mg/L	2	20	08/03/07 0:00	aeh/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/03/07 0:00	aeh/jlf
Total Alkalinity		115			mg/L	2	20	08/03/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			08/17/07 0:00	calc
Sum of Anions		42.8			meq/L	0.1	0.5	08/17/07 0:00	calc
Sum of Cations		42.8			meq/L	0.1	0.5	08/17/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	110			mg/L	10	50	08/06/07 16:50	mls/jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/07/07 11:50	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.47			mg/L	0.02	0.1	08/04/07 17:33	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	3180			mg/L	10	20	08/01/07 15:01	lcp
Sulfate	SM4500 SO ₄ -D	1780			mg/L	10	50	08/09/07 10:36	ear
TDS (calculated)	Calculation	2780			mg/L	10	50	08/17/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						08/17/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229639													
WG229639PBW1	PBW	08/03/07 15:45				U	mg/L		-20	20			
WG229639LCSW2	LCSW	08/03/07 15:57	WC070723-9	820		819.9	mg/L	100	90	110			
WG229639PBW2	PBW	08/03/07 18:52				U	mg/L		-20	20			
WG229639LCSW5	LCSW	08/03/07 19:04	WC070723-9	820		843.5	mg/L	102.9	90	110			
L64119-07DUP	DUP	08/03/07 22:03			128	128.1	mg/L				0.1	20	
WG229639PBW3	PBW	08/03/07 22:09				U	mg/L		-20	20			
WG229639LCSW8	LCSW	08/03/07 22:21	WC070723-9	820		825	mg/L	100.6	90	110			
L64130-01DUP	DUP	08/03/07 23:45			151	150.3	mg/L				0.5	20	
WG229639PBW4	PBW	08/04/07 0:45				U	mg/L		-20	20			
WG229639LCSW11	LCSW	08/04/07 0:57	WC070723-9	820		826.7	mg/L	100.8	90	110			
WG229639LCSW14	LCSW	08/04/07 3:02	WC070723-9	820		828.5	mg/L	101	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		2.006	mg/L	100.3	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.09	0.09			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	1		1.063	mg/L	106.3	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	2	U	2.417	mg/L	120.9	85	115			MA
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	2	U	2.268	mg/L	113.4	85	115	6.36	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	1	.1	1.169	mg/L	106.9	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	1	.1	1.291	mg/L	119.1	85	115	9.92	20	MA

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.02		.02163	mg/L	108.2	90	110			
WG229583ICB	ICB	08/03/07 4:24				U	mg/L		-0.0012	0.0012			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.01		.01068	mg/L	106.8	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.01	.0009	.011	mg/L	101	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.01	.0009	.01085	mg/L	99.5	70	130	1.37	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.02	U	.02396	mg/L	119.8	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.02	U	.02456	mg/L	122.8	70	130	2.47	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.05		.05112	mg/L	102.2	90	110			
WG229583ICB	ICB	08/03/07 4:24				U	mg/L		-0.0015	0.0015			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.05		.05137	mg/L	102.7	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.05	.0127	.06619	mg/L	107	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.05	.0127	.0653	mg/L	105.2	70	130	1.35	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.1	.003	.1117	mg/L	108.7	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.1	.003	.1147	mg/L	111.7	70	130	2.65	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		2.0999	mg/L	105	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.009	0.009			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.5459	mg/L	109.2	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	.041	1.1016	mg/L	106.1	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	.041	1.1118	mg/L	107.1	85	115	0.92	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	.022	.5702	mg/L	109.6	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	.022	.5479	mg/L	105.2	85	115	3.99	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.05		.04848	mg/L	97	90	110			
WG229583ICB	ICB	08/03/07 4:24				U	mg/L		-0.0003	0.0003			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.05		.05026	mg/L	100.5	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.05	U	.04759	mg/L	95.2	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.05	U	.04758	mg/L	95.2	70	130	0.02	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.1	U	.09326	mg/L	93.3	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.1	U	.09568	mg/L	95.7	70	130	2.56	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.05		.05104	mg/L	102.1	90	110			
WG229583ICB	ICB	08/03/07 4:24				U	mg/L		-0.0003	0.0003			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.05		.05156	mg/L	103.1	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.05	U	.05057	mg/L	101.1	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.05	U	.04972	mg/L	99.4	70	130	1.7	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.1	U	.09542	mg/L	95.4	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.1	U	.09878	mg/L	98.8	70	130	3.46	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	100		98.31	mg/L	98.3	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.6	0.6			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	67.97008		71.36	mg/L	105	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	135.94016	512	660.52	mg/L	109.3	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	135.94016	512	648.49	mg/L	100.4	85	115	1.84	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	67.97008	12.2	84	mg/L	105.6	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	67.97008	12.2	91.74	mg/L	117	85	115	8.81	20	MA

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229735													
WG229735ICB	ICB	08/06/07 13:30				U	mg/L		-3	3			
WG229735ICV	ICV	08/06/07 13:30	WI070314-1	55		57.2	mg/L	104	90	110			
WG229735LFB1	LFB	08/06/07 16:19	WI070712-1	30		30.9	mg/L	103	90	110			
L64118-06AS	AS	08/06/07 16:27	WI070712-1	30	69	92.5	mg/L	78.3	90	110			M2
L64118-07DUP	DUP	08/06/07 16:27			49	49.4	mg/L				0.8	20	
WG229735LFB2	LFB	08/06/07 16:28	WI070712-1	30		30.9	mg/L	103	90	110			
L64119-03AS	AS	08/06/07 16:46	10XCL	30	110	141	mg/L	103.3	90	110			
L64119-04DUP	DUP	08/06/07 16:46			120	123	mg/L				2.5	20	

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.936	mg/L	96.8	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.03	0.03			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.517	mg/L	103.4	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	U	.987	mg/L	98.7	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	U	.986	mg/L	98.6	85	115	0.1	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	U	.525	mg/L	105	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	U	.498	mg/L	99.6	85	115	5.28	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.922	mg/L	96.1	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.03	0.03			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.517	mg/L	103.4	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	U	.975	mg/L	97.5	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	U	.984	mg/L	98.4	85	115	0.92	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	U	.517	mg/L	103.4	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	U	.502	mg/L	100.4	85	115	2.94	20	

Conductivity @25C 120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229285													
WG229285LCSW1	LCSW	07/30/07 11:31	PCN27303	1408.8		1529	µmhos/crr	108.5	90	110			
WG229285LCSW4	LCSW	07/30/07 13:57	PCN27303	1408.8		1513	µmhos/crr	107.4	90	110			
WG229285LCSW7	LCSW	07/30/07 16:56	PCN27303	1408.8		1507	µmhos/crr	107	90	110			
L64119-07DUP	DUP	07/30/07 19:47			3210	3210	µmhos/crr				0	20	
WG229285LCSW10	LCSW	07/30/07 19:54	PCN27303	1408.8		1505	µmhos/crr	106.8	90	110			
L64125-06DUP	DUP	07/30/07 21:18			1740	1727	µmhos/crr				0.7	20	
WG229285LCSW13	LCSW	07/30/07 22:18	PCN27303	1408.8		1494	µmhos/crr	106	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.93	mg/L	96.5	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.03	0.03			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.515	mg/L	103	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	U	1.003	mg/L	100.3	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	U	1.004	mg/L	100.4	85	115	0.1	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	U	.524	mg/L	104.8	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	U	.503	mg/L	100.6	85	115	4.09	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229825													
WG229825ICV	ICV	08/07/07 20:16	WI070730-6	.3		.3056	mg/L	101.9	90	110			
WG229825ICB	ICB	08/07/07 20:17				U	mg/L		-0.015	0.015			
WG229751LRB	LRB	08/07/07 20:18				.0068	mg/L		-0.015	0.015			
WG229751LFB	LFB	08/07/07 20:19	WI070730-2	.2		.1884	mg/L	94.2	90	110			
L64114-01DUP	DUP	08/07/07 20:21			.284	.2778	mg/L				2.2	20	
L64115-01LFM	LFM	08/07/07 20:23	WI070730-2	.2	U	.1959	mg/L	98	90	110			
L64188-02DUP	DUP	08/07/07 20:33			U	.0078	mg/L				200	20	RA
L64188-03LFM	LFM	08/07/07 20:35	WI070730-2	.2	U	.2055	mg/L	102.8	90	110			
WG229827													
WG229827ICV	ICV	08/07/07 20:52	WI070730-6	.3		.3154	mg/L	105.1	90	110			
WG229827ICB	ICB	08/07/07 20:53				U	mg/L		-0.015	0.015			
WG229770LRB	LRB	08/07/07 20:54				U	mg/L		-0.015	0.015			
WG229770LFB	LFB	08/07/07 20:55	WI070730-2	.2		.2046	mg/L	102.3	90	110			
L64119-05DUP	DUP	08/07/07 20:57			.039	.0355	mg/L				9.4	20	RA
L64119-06LFM	LFM	08/07/07 20:59	WI070730-2	.2	.042	.2649	mg/L	111.5	90	110			M1
L64139-02DUP	DUP	08/07/07 21:09			U	U	mg/L				0	20	RA
L64188-05LFM	LFM	08/07/07 21:11	WI070730-2	.2	U	.214	mg/L	107	90	110			

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229691													
WG229691ICV	ICV	08/06/07 10:25	WC070802-2	2		2.1	mg/L	105	90	110			
WG229691ICB	ICB	08/06/07 10:32				U	mg/L		-0.3	0.3			
WG229691LFB2	LFB	08/06/07 12:52	WC070730-1	5		5.13	mg/L	102.6	90	110			
L64119-01AS	AS	08/06/07 14:05	WC070730-1	5	.2	5.18	mg/L	99.6	90	110			
L64119-01DUP	DUP	08/06/07 14:08			.2	.19	mg/L				5.1	20	RA
WG229766													
WG229766ICV	ICV	08/07/07 11:16	WC070802-2	2		2.1	mg/L	105	90	110			
WG229766ICB	ICB	08/07/07 11:23				U	mg/L		-0.3	0.3			
WG229766LFB1-1	LFB	08/07/07 11:34	WC070730-1	5		5.32	mg/L	106.4	90	110			
L64119-09AS	AS	08/07/07 11:40	WC070730-1	5	.2	5.48	mg/L	105.6	90	110			
L64119-09DUP	DUP	08/07/07 11:43			.2	.23	mg/L				14	20	RA
WG229766LFB2	LFB	08/07/07 13:40	WC070730-1	5		5.05	mg/L	101	90	110			

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.978	mg/L	98.9	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.06	0.06			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	1		1.07	mg/L	107	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	2	U	2.068	mg/L	103.4	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	2	U	2.048	mg/L	102.4	85	115	0.97	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	1	.08	1.153	mg/L	107.3	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	1	.08	1.111	mg/L	103.1	85	115	3.71	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.05		.05146	mg/L	102.9	90	110			
WG229583ICB	ICB	08/03/07 4:24				.00012	mg/L		-0.0003	0.0003			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.05		.05152	mg/L	103	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.05	U	.0521	mg/L	104.2	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.05	U	.05196	mg/L	103.9	70	130	0.27	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.1	.0171	.11812	mg/L	101	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.1	.0171	.12052	mg/L	103.4	70	130	2.01	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	100		99.83	mg/L	99.8	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.6	0.6			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	54.96908		57.31	mg/L	104.3	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	109.93816	89.7	213.96	mg/L	113	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	109.93816	89.7	206.18	mg/L	106	85	115	3.7	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	54.96908	3.5	61.95	mg/L	106.3	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	54.96908	3.5	67.42	mg/L	116.3	85	115	8.46	20	MA

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.9257	mg/L	96.3	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.015	0.015			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.5462	mg/L	109.2	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	U	1.047	mg/L	104.7	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	U	1.043	mg/L	104.3	85	115	0.38	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	U	.5537	mg/L	110.7	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	U	.5344	mg/L	106.9	85	115	3.55	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

Project ID: OJ03DL

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229863													
WG229863ICV	ICV	08/08/07 18:55	II070803-1	.00498		.005	mg/L	100.4	95	105			
WG229863ICB	ICB	08/08/07 18:57				U	mg/L		-0.0002	0.0002			
WG229863LRB	LRB	08/08/07 19:53				U	mg/L		-0.00044	0.00044			
WG229863LFB	LFB	08/08/07 19:55	II070801-2	.002		.00209	mg/L	104.5	85	115			
L64101-01LFM	LFM	08/08/07 20:30	II070801-2	.002	.0004	.00227	mg/L	93.5	85	115			
L64101-01LFMD	LFMD	08/08/07 20:33	II070801-2	.002	.0004	.00226	mg/L	93	85	115	0.44	20	

WG230090

WG230090ICV	ICV	08/14/07 14:54	II070803-1	.00498		.00516	mg/L	103.6	95	105			
WG230090ICB	ICB	08/14/07 14:57				U	mg/L		-0.0002	0.0002			
WG230090LRB	LRB	08/14/07 15:09				U	mg/L		-0.00044	0.00044			
WG230090LFB	LFB	08/14/07 15:11	II070801-2	.002		.00192	mg/L	96	85	115			
L64119-02LFM	LFM	08/14/07 15:16	II070801-2	.002	U	.00201	mg/L	100.5	85	115			
L64119-02LFMD	LFMD	08/14/07 15:19	II070801-2	.002	U	.002	mg/L	100	85	115	0.5	20	

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.982	mg/L	99.1	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.03	0.03			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.516	mg/L	103.2	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	.26	1.364	mg/L	110.4	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	.26	1.29	mg/L	103	85	115	5.58	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	U	.52	mg/L	104	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	U	.571	mg/L	114.2	85	115	9.35	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.921	mg/L	96.1	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.03	0.03			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.514	mg/L	102.8	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	U	.977	mg/L	97.7	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	U	.974	mg/L	97.4	85	115	0.31	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	U	.525	mg/L	105	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	U	.503	mg/L	100.6	85	115	4.28	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

Project ID: OJ03DL

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229667													
WG229667ICV	ICV	08/04/07 14:56	WI070609-1	2.416		2.492	mg/L	103.1	90	110			
WG229667ICB	ICB	08/04/07 14:57				U	mg/L		-0.06	0.06			
WG229671													
WG229671ICV	ICV	08/04/07 16:38	WI070609-1	2.416		2.467	mg/L	102.1	90	110			
WG229671ICB	ICB	08/04/07 16:39				U	mg/L		-0.06	0.06			
WG229671LFB1	LFB	08/04/07 16:41	WI070307-9	2		2.084	mg/L	104.2	90	110			
L64070-02AS	AS	08/04/07 17:01	WI070307-9	2	.04	2.059	mg/L	101	90	110			
L64070-03DUP	DUP	08/04/07 17:04			1.76	1.733	mg/L				1.5	20	
WG229671LFB2	LFB	08/04/07 17:18	WI070307-9	2		2.077	mg/L	103.9	90	110			
L64119-06DUP	DUP	08/04/07 17:23			2.22	2.209	mg/L				0.5	20	
L64119-05AS	AS	08/04/07 17:44	WI070307-9	4	2.05	6.273	mg/L	105.6	90	110			
WG230106													
WG230106ICV	ICV	08/10/07 19:11	WI070609-1	2.416		2.43	mg/L	100.6	90	110			
WG230106ICB	ICB	08/10/07 19:13				U	mg/L		-0.06	0.06			
WG230106ICV1	ICV	08/10/07 20:00	WI070609-1	2.416		2.333	mg/L	96.6	90	110			
WG230106ICB1	ICB	08/10/07 20:01				U	mg/L		-0.06	0.06			
WG230107													
WG230107ICV	ICV	08/10/07 20:22	WI070609-1	2.416		2.286	mg/L	94.6	90	110			
WG230107ICB	ICB	08/10/07 20:24				U	mg/L		-0.06	0.06			
WG230107LFB1	LFB	08/10/07 20:25	WI070307-9	2		1.924	mg/L	96.2	90	110			
L63979-05AS	AS	08/10/07 20:27	WI070307-9	2	.02	1.971	mg/L	97.6	90	110			
L64112-03DUP	DUP	08/10/07 20:30			.19	.227	mg/L				17.7	20	RA
WG230107LFB2	LFB	08/10/07 21:03	WI070307-9	2		1.939	mg/L	97	90	110			

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229285													
WG229285LCSW3	LCSW	07/30/07 11:45	PCN26677	6		6.04	units	100.7	90	110			
WG229285LCSW6	LCSW	07/30/07 14:10	PCN26677	6		6.06	units	101	90	110			
WG229285LCSW9	LCSW	07/30/07 17:11	PCN26677	6		6.05	units	100.8	90	110			
L64119-07DUP	DUP	07/30/07 19:47			7.8	7.85	units				0.6	20	
WG229285LCSW12	LCSW	07/30/07 20:06	PCN26677	6		6.04	units	100.7	90	110			
L64125-06DUP	DUP	07/30/07 21:18			8.7	8.72	units				0.2	20	
WG229285LCSW15	LCSW	07/30/07 22:32	PCN26677	6		6.04	units	100.7	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	20		20.52	mg/L	102.6	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.9	0.9			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	99.76186		106.05	mg/L	106.3	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	199.52372	8	251.39	mg/L	122	85	115			MA
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	199.52372	8	235.63	mg/L	114.1	85	115	6.47	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	99.76186	1.2	109.73	mg/L	108.8	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	99.76186	1.2	122.93	mg/L	122	85	115	11.35	20	MA

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229458													
WG229458PBW	PBW	08/01/07 14:45				U	mg/L		-20	20			
WG229458LCSW	LCSW	08/01/07 14:46	PCN27688	260		290	mg/L	111.5	80	120			
L64119-10DUP	DUP	08/01/07 15:00			3070	3088	mg/L				0.6	20	
L64188-09DUP	DUP	08/01/07 15:14			380	376	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
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.05		.05124	mg/L	102.5	90	110			
WG229583ICB	ICB	08/03/07 4:24				U	mg/L		-0.0003	0.0003			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.05		.05193	mg/L	103.9	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.05	.0007	.05581	mg/L	110.2	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.05	.0007	.05615	mg/L	110.9	70	130	0.61	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.1	.0009	.10864	mg/L	107.7	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.1	.0009	.11442	mg/L	113.5	70	130	5.18	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	100		101.44	mg/L	101.4	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.9	0.9			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	98.21624		103.23	mg/L	105.1	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	196.43248	231	455.75	mg/L	114.4	85	115			
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	196.43248	231	441.45	mg/L	107.1	85	115	3.19	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	98.21624	15.3	119.98	mg/L	106.6	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	98.21624	15.3	131.91	mg/L	118.7	85	115	9.47	20	MA

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229888													
WG229888PBW	PBW	08/08/07 14:45				U	mg/L		-30	30			
WG229888LCSW	LCSW	08/08/07 14:48	WC070705-2	100		109	mg/L	109	80	120			
L64119-10DUP	DUP	08/08/07 16:00			1670	1720	mg/L				2.9	20	
WG229946													
WG229946PBW	PBW	08/09/07 10:30				U	mg/L		-30	30			
WG229946LCSW	LCSW	08/09/07 10:33	WC070705-2	100		103	mg/L	103	80	120			
L64136-02DUP	DUP	08/09/07 11:09			8080	8109	mg/L				0.4	20	
WG231248													
WG231248PBW	PBW	08/29/07 9:50				U	mg/L		-30	30			
WG231248LCSW	LCSW	08/29/07 9:54	WC070705-2	100		95	mg/L	95	80	120			
L64639-01DUP	DUP	08/29/07 10:32			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64119**

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229583													
WG229583ICV	ICV	08/03/07 4:19	MS070731-2	.05		.0532	mg/L	106.4	90	110			
WG229583ICB	ICB	08/03/07 4:24				U	mg/L		-0.0003	0.0003			
WG229583LFB	LFB	08/03/07 4:30	MS070712-3	.05		.05227	mg/L	104.5	85	115			
L63989-08AS	AS	08/03/07 4:42	MS070712-3	.05	U	.05354	mg/L	107.1	70	130			
L63989-08ASD	ASD	08/03/07 4:48	MS070712-3	.05	U	.05361	mg/L	107.2	70	130	0.13	20	
L64119-08AS	AS	08/03/07 6:04	MS070712-3	.1	U	.10546	mg/L	105.5	70	130			
L64119-08ASD	ASD	08/03/07 6:10	MS070712-3	.1	U	.10632	mg/L	106.3	70	130	0.81	20	

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229792													
WG229792ICV	ICV	08/08/07 5:31	II070725-7	2		1.928	mg/L	96.4	95	105			
WG229792ICB	ICB	08/08/07 5:35				U	mg/L		-0.03	0.03			
WG229792LFB	LFB	08/08/07 5:52	II070806-9	.5		.521	mg/L	104.2	85	115			
L64119-01AS	AS	08/08/07 6:00	II070806-9	1	U	1.207	mg/L	120.7	85	115			MA
L64119-01ASD	ASD	08/08/07 6:05	II070806-9	1	U	1.073	mg/L	107.3	85	115	11.75	20	
L64121-01AS	AS	08/08/07 7:04	II070806-9	.5	.04	.565	mg/L	105	85	115			
L64121-01ASD	ASD	08/08/07 7:08	II070806-9	.5	.04	.62	mg/L	116	85	115	9.28	20	MA

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64119-01	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229735	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229691	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).
	WG230107	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).
L64119-02	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229735	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229691	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).
L64119-03	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229691	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).
L64119-04	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229825	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).
	WG229691	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).

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64119-05	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229691	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).
L64119-06	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229691	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).
L64119-07	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229691	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).
	WG231248	Sulfate	SM4500 SO4-D SM4500 SO4-D	C4 RA	Confirmatory analysis was past holding time. Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64119-08	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229691	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).
L64119-09	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229766	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).
L64119-10	WG229792	Aluminum, 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.
		Potassium, 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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).
	WG229766	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).
L64119-11	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64119-13	WG229792	Calcium, 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.
		Magnesium, 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.
		Potassium, 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.
		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.
		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.
	WG229827	Cyanide, total	M335.4 - Colorimetric w/ distillation M335.4 - Colorimetric w/ distillation	M1 RA	Matrix spike recovery was high, the method control sample recovery was acceptable. Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG229766	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).

Phelps Dodge Sierrita

ACZ Project ID: **L64119**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64119
Date Received: 7/27/2007
Received By:
Date Printed: 7/27/2007

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)
NA4056		2.7	17

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

Notes

Sample ID DUP072507A was listed in the remarks section of the COC. Sample was added after the tripblanks.

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64119
Date Received: 7/27/2007
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
L64119-01	IW-6A		Y		Y							☐
L64119-02	IW12		Y		Y							☐
L64119-03	IW13		Y		Y							☐
L64119-04	IW14		Y		Y							☐
L64119-05	IW15		Y		Y							☐
L64119-06	IW16		Y		Y							☐
L64119-07	IW17		Y		Y							☐
L64119-08	IW18		Y		Y							☐
L64119-09	IW19		Y		Y							☐
L64119-10	IW23		Y		Y							☐
L64119-11	TB061307-22									X		☐
L64119-12	TB061307-15									X		☐
L64119-13	DUP072507A		Y		Y							☐

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

LC4119

ACZ Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Billy Dorris
Company: Phelps Dodge Sierrita
E-mail: Billy-Dorris@FMI.com

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

Copy of Report to:

Name: Jim Norris
Company: Hydro Geo Chem

E-mail: jimn@hginc.com
Telephone: 520-293-1500 EXT 112

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 #: OJ03 DL
Reporting state for compliance testing:
Sampler's Name:
Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers															
IW-6A	7-25-07/9:40	GW	8															
IW-12	7-25-07/9:10	GW	8															
IW-13	7-25-07/9:00	GW	8															
IW-14	7-25-07/8:50	GW	8															
IW-15	7-25-07/8:40	GW	8															
IW-16	7-25-07/8:30	GW	8															
IW-17	7-25-07/8:20	GW	8															
IW-18	7-25-07/8:10	GW	8															
IW-19	7-25-07/7:50	GW	8															
IW-23	7-25-07/10:00	GW	8															

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

REMARKS

DUP072507A 7-25-07 GW 8

UPS TRACKING # 1Z 867 7E4 21 1000 0500

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 Dorris</u>	<u>7-26-07/15:00</u>	<u>KU</u>	<u>7-27-07 8:50</u>

August 24, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L64349

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 09, 2007. This project has been assigned to ACZ's project number, L64349. 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 L64349. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 24, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-MO-2007-1A

ACZ Sample ID: **L64349-01**

Date Sampled: 08/08/07 13:00

Date Received: 08/09/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	370			mS/cm			08/08/07 13:00	ma
pH (Field)	Field Measurement	7.2			units			08/08/07 13:00	ma
Temperature (Field)	Field Measurement	29.0			C			08/08/07 13:00	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	40.4			mg/L	0.2	1	08/22/07 0:55	wfg
Magnesium, dissolved	M200.7 ICP	6.4			mg/L	0.2	1	08/22/07 0:55	wfg
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	08/22/07 0:55	wfg
Sodium, dissolved	M200.7 ICP	30.4			mg/L	0.3	2	08/22/07 0:55	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		164		*	mg/L	2	20	08/14/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U	*	mg/L	2	20	08/14/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U	*	mg/L	2	20	08/14/07 0:00	lcp/jlf
Total Alkalinity		164		*	mg/L	2	20	08/14/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			08/23/07 9:53	calc
Sum of Anions		3.9			meq/L	0.1	0.5	08/23/07 9:53	calc
Sum of Cations		3.9			meq/L	0.1	0.5	08/23/07 9:53	calc
Chloride	M300.0 - Ion Chromatography	8.4		*	mg/L	0.5	3	08/16/07 6:23	jag
Fluoride	M300.0 - Ion Chromatography	0.4	B	*	mg/L	0.1	0.5	08/16/07 6:23	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.54			mg/L	0.02	0.1	08/23/07 9:53	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.54		*	mg/L	0.02	0.1	08/09/07 19:46	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/09/07 19:46	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	250			mg/L	10	20	08/14/07 14:57	ear
Sulfate	300.0 - Ion Chromatography	19.2		*	mg/L	0.5	3	08/16/07 6:23	jag
TDS (calculated)	Calculation	209			mg/L	10	50	08/23/07 9:53	calc
TDS (ratio - measured/calculated)	Calculation	1.20						08/23/07 9:53	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-MO-2007-1A

ACZ Sample ID: **L64349-02**

Date Sampled: 08/08/07 13:00

Date Received: 08/09/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	19.2		*	mg/L	0.5	3	08/16/07 6:41	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64349**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230251													
WG230251PBW1	PBW	08/14/07 10:08				U	mg/L		-20	20			
WG230251LCSW2	LCSW	08/14/07 10:20	WC070809-7	820		797.4	mg/L	97.2	90	110			
WG230251PBW2	PBW	08/14/07 14:29				U	mg/L		-20	20			
WG230251LCSW5	LCSW	08/14/07 14:41	WC070809-7	820		807.9	mg/L	98.5	90	110			
WG230251PBW3	PBW	08/14/07 17:30				U	mg/L		-20	20			
WG230251LCSW8	LCSW	08/14/07 17:41	WC070809-7	820		809	mg/L	98.7	90	110			
L64357-01DUP	DUP	08/14/07 20:30			97	96	mg/L				1	20	
WG230251PBW4	PBW	08/14/07 20:36				U	mg/L		-20	20			
WG230251LCSW11	LCSW	08/14/07 20:47	WC070809-7	820		808.9	mg/L	98.6	90	110			
WG230251LCSW14	LCSW	08/14/07 23:46	WC070809-7	820		810.1	mg/L	98.8	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	100		98.13	mg/L	98.1	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.6	0.6			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	67.97008		68.22	mg/L	100.4	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	67.97008	40.4	107.42	mg/L	98.6	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	67.97008	40.4	107.97	mg/L	99.4	85	115	0.51	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230384													
WG230384ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG230384ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG230384LFB	LFB	08/15/07 22:32	WI070727-1	30		31.17	mg/L	103.9	90	110			
L63661-02DUP	DUP	08/16/07 3:04			.8	.75	mg/L				6.5	20	RA
L63661-02AS	AS	08/16/07 3:58	WI070727-1	30	.8	30.36	mg/L	98.5	90	110			
L63661-02AS	AS	08/16/07 9:48	WI070727-1	300	6	285.8	mg/L	93.3	90	110			
L63661-02DUP	DUP	08/16/07 10:06			6	5.7	mg/L				5.1	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L64349**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			

WG230384

WG230384ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG230384ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG230384LFB	LFB	08/15/07 22:32	WI070727-1	1.5		1.62	mg/L	108	90	110			
L63661-02DUP	DUP	08/16/07 3:04			.3	.3	mg/L				0	20	RA
L63661-02AS	AS	08/16/07 3:58	WI070727-1	1.5	.3	1.86	mg/L	104	90	110			
L63661-02AS	AS	08/16/07 9:48	WI070727-1	15	U	15.7	mg/L	104.7	90	110			
L63661-02DUP	DUP	08/16/07 10:06			U	U	mg/L				0	20	RA

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	100		99.43	mg/L	99.4	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.6	0.6			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	54.96908		54.69	mg/L	99.5	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	54.96908	6.4	61.65	mg/L	100.5	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	54.96908	6.4	61.71	mg/L	100.6	85	115	0.1	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229998													
WG229998ICV	ICV	08/09/07 18:50	WI070609-1	2.416		2.407	mg/L	99.6	90	110			
WG229998ICB	ICB	08/09/07 18:51				U	mg/L		-0.06	0.06			
WG229998LFB1	LFB	08/09/07 18:56	WI070307-9	2		2.013	mg/L	100.7	90	110			
WG229998LFB2	LFB	08/09/07 19:32	WI070307-9	2		1.994	mg/L	99.7	90	110			
L64337-06AS	AS	08/09/07 19:38	WI070307-9	2	.68	2.71	mg/L	101.5	90	110			
L64337-07DUP	DUP	08/09/07 19:40			U	U	mg/L				0	20	RA

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229998													
WG229998ICV	ICV	08/09/07 18:50	WI070609-1	.609		.637	mg/L	104.6	90	110			
WG229998ICB	ICB	08/09/07 18:51				U	mg/L		-0.03	0.03			
WG229998LFB1	LFB	08/09/07 18:56	WI070307-9	1		1.021	mg/L	102.1	90	110			
WG229998LFB2	LFB	08/09/07 19:32	WI070307-9	1		1.012	mg/L	101.2	90	110			
L64337-06AS	AS	08/09/07 19:38	WI070307-9	1	.06	1.073	mg/L	101.3	90	110			
L64337-07DUP	DUP	08/09/07 19:40			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64349**

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	20		19.93	mg/L	99.7	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.9	0.9			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	99.76186		99.96	mg/L	100.2	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	99.76186	3	105.56	mg/L	102.8	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	99.76186	3	105.87	mg/L	103.1	85	115	0.29	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230298													
WG230298PBW	PBW	08/14/07 14:00				16	mg/L		-20	20			
WG230298LCSW	LCSW	08/14/07 14:02	PCN27692	260		284	mg/L	109.2	80	120			
L64349-01DUP	DUP	08/14/07 15:00			250	246	mg/L				1.6	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	100		100.54	mg/L	100.5	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.9	0.9			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	98.21624		98.35	mg/L	100.1	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	98.21624	30.4	129.53	mg/L	100.9	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	98.21624	30.4	129.34	mg/L	100.7	85	115	0.15	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230384													
WG230384ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG230384ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG230384LFB	LFB	08/15/07 22:32	WI070727-1	30		32.71	mg/L	109	90	110			
L63661-02AS	AS	08/16/07 9:48	WI070727-1	300	162	429.5	mg/L	89.2	90	110			M2
L63661-02DUP	DUP	08/16/07 10:06			162	162.5	mg/L				0.3	20	

Phelps Dodge SierritaACZ Project ID: **L64349**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64349-01	WG230251	Bicarbonate as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
		Carbonate as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG230384	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230251	Hydroxide as CaCO ₃	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
	WG229998	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230384	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG230251	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L64349-02	WG230384	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.

Phelps Dodge Sierrita

ACZ Project ID: **L64349**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64349
Date Received: 8/9/2007
Received By:
Date Printed: 8/9/2007

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)
NA4154		3.7	19

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64349
Date Received: 8/9/2007
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
L64349-01	FGW-MO-2007-1A		Y									☐
L64349-02	UGW-MO-2007-1A									X		☐

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: _____

September 18, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJO3Z5

ACZ Project ID: L64629

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 24, 2007. This project has been assigned to ACZ's project number, L64629. 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 L64629. 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 October 18, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJO3Z5

Sample ID: FGW-MO-2007-5C

ACZ Sample ID: **L64629-01**

Date Sampled: 08/23/07 14:30

Date Received: 08/24/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	780			mS/cm			08/23/07 14:30	ma
pH (Field)	Field Measurement	7.5			units			08/23/07 14:30	ma
Temperature (Field)	Field Measurement	31.4			C			08/23/07 14:30	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	30.0			mg/L	0.2	1	09/03/07 19:54	djt
Magnesium, dissolved	M200.7 ICP	1.4			mg/L	0.2	1	09/03/07 19:54	djt
Potassium, dissolved	M200.7 ICP	7.1			mg/L	0.3	2	09/03/07 19:54	djt
Sodium, dissolved	M200.7 ICP	129		*	mg/L	0.3	2	09/03/07 19:54	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		71			mg/L	2	20	08/30/07 0:00	lcp
Carbonate as CaCO ₃			U		mg/L	2	20	08/30/07 0:00	lcp
Hydroxide as CaCO ₃			U		mg/L	2	20	08/30/07 0:00	lcp
Total Alkalinity		71		*	mg/L	2	20	08/30/07 0:00	lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.8			%			09/18/07 0:00	calc
Sum of Anions		7.0			meq/L	0.1	0.5	09/18/07 0:00	calc
Sum of Cations		7.4			meq/L	0.1	0.5	09/18/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	12			mg/L	3	10	09/14/07 10:29	ccp
Fluoride	M300.0 - Ion Chromatography	2.1		*	mg/L	0.1	0.5	09/13/07 18:42	ccp
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.13			mg/L	0.02	0.1	09/18/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.15			mg/L	0.02	0.1	08/24/07 21:18	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.02	B	*	mg/L	0.01	0.05	08/24/07 21:18	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	540			mg/L	10	20	08/29/07 11:05	cas
Sulfate	300.0 - Ion Chromatography	248		*	mg/L	3	10	09/14/07 10:29	ccp
TDS (calculated)	Calculation	473			mg/L	10	50	09/18/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						09/18/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJO3Z5

Sample ID: UGW-MO-2007-5C

ACZ Sample ID: **L64629-02**

Date Sampled: 08/23/07 14:30

Date Received: 08/24/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	780			mS/cm			08/23/07 14:30	ma
pH (Field)	Field Measurement	7.5			units			08/23/07 14:30	ma
Temperature (Field)	Field Measurement	31.4			C			08/23/07 14:30	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	252		*	mg/L	3	10	09/14/07 10:47	ccp

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJO3Z5

ACZ Project ID: **L64629**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231352													
WG231352PBW1	PBW	08/30/07 11:22				U	mg/L		-20	20			
WG231352LCSW2	LCSW	08/30/07 11:34	WC070828-1	820		811.7	mg/L	99	90	110			
L64658-01DUP	DUP	08/30/07 14:17			125	125.6	mg/L				0.5	20	
WG231352PBW2	PBW	08/30/07 14:22				U	mg/L		-20	20			
WG231352LCSW5	LCSW	08/30/07 14:35	WC070828-1	820		824.4	mg/L	100.5	90	110			
WG231352PBW3	PBW	08/30/07 18:14				U	mg/L		-20	20			
WG231352LCSW8	LCSW	08/30/07 18:26	WC070828-1	820		826.8	mg/L	100.8	90	110			
WG231352PBW4	PBW	08/30/07 21:22				U	mg/L		-20	20			
WG231352LCSW11	LCSW	08/30/07 21:34	WC070828-1	820		828.7	mg/L	101.1	90	110			
WG231352LCSW14	LCSW	08/31/07 0:12	WC070828-1	820		826.4	mg/L	100.8	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		101.94	mg/L	101.9	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.6	0.6			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	67.97008		71.99	mg/L	105.9	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	67.97008	3.3	76.71	mg/L	108	85	115			
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	67.97008	3.3	75.24	mg/L	105.8	85	115	1.93	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	20		19.89	mg/L	99.5	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-1.5	1.5			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	30		29.34	mg/L	97.8	90	110			
L64532-01DUP	DUP	09/13/07 17:11			69	70.9	mg/L				2.7	20	
L64532-02AS	AS	09/13/07 17:47	WI070727-1	30	8.4	36.91	mg/L	95	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	3.984		4.19	mg/L	105.2	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-0.3	0.3			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	1.5		1.54	mg/L	102.7	90	110			
L64532-01DUP	DUP	09/13/07 17:11			44.6	45.71	mg/L				2.5	20	
L64532-02AS	AS	09/13/07 17:47	WI070727-1	1.5	4.3	5.51	mg/L	80.7	90	110			M2

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		103.02	mg/L	103	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.6	0.6			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	54.96908		58.14	mg/L	105.8	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	54.96908	.8	59.62	mg/L	107	85	115			
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	54.96908	.8	58.43	mg/L	104.8	85	115	2.02	20	

Phelps Dodge Sierrita
 Project ID: OJO3Z5

ACZ Project ID: **L64629**

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231014													
WG231014ICV	ICV	08/24/07 20:17	WI070609-1	2.416		2.375	mg/L	98.3	90	110			
WG231014ICB	ICB	08/24/07 20:18				U	mg/L		-0.06	0.06			
WG231014LFB1	LFB	08/24/07 20:23	WI070307-9	2		1.979	mg/L	99	90	110			
WG231014LFB2	LFB	08/24/07 21:02	WI070307-9	2		1.881	mg/L	94.1	90	110			
L64613-07AS	AS	08/24/07 21:08	WI070307-9	2	U	1.794	mg/L	89.7	90	110			
L64621-01DUP	DUP	08/24/07 21:10			1.33	1.351	mg/L				1.6	20	

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231014													
WG231014ICV	ICV	08/24/07 20:17	WI070609-1	.609		.633	mg/L	103.9	90	110			
WG231014ICB	ICB	08/24/07 20:18				U	mg/L		-0.03	0.03			
WG231014LFB1	LFB	08/24/07 20:23	WI070307-9	1		1.016	mg/L	101.6	90	110			
WG231014LFB2	LFB	08/24/07 21:02	WI070307-9	1		1.018	mg/L	101.8	90	110			
L64613-07AS	AS	08/24/07 21:08	WI070307-9	1	U	.984	mg/L	98.4	90	110			
L64621-01DUP	DUP	08/24/07 21:10			U	U	mg/L				0	20	RA

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	20		19.71	mg/L	98.6	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.9	0.9			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	99.76186		100.95	mg/L	101.2	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	99.76186	3.5	112.67	mg/L	109.4	85	115			
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	99.76186	3.5	110.41	mg/L	107.2	85	115	2.03	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231255													
WG231255PBW	PBW	08/29/07 11:00				U	mg/L		-20	20			
WG231255LCSW	LCSW	08/29/07 11:01	PCN27686	260		282	mg/L	108.5	80	120			
L64652-02DUP	DUP	08/29/07 11:15			6040	6072	mg/L				0.5	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		98.2	mg/L	98.2	95	105			
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		99.2	mg/L	99.2	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-6	6			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.9	0.9			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	98.21624		99.2	mg/L	101	85	115			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	98.21624		99.28	mg/L	101.1	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	98.21624	612	684.6	mg/L	73.9	85	115			M3
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	98.21624	612	684.2	mg/L	73.5	85	115	0.06	20	M3

Phelps Dodge Sierrita
Project ID: OJO3Z5

ACZ Project ID: **L64629**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	50.1		52.62	mg/L	105	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-1.5	1.5			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	30		30.67	mg/L	102.2	90	110			
L64532-01DUP	DUP	09/13/07 17:11			U	U	mg/L				0	20	RA
L64532-02AS	AS	09/14/07 11:59	WI070727-1	300	494	798.9	mg/L	101.6	90	110			

Phelps Dodge SierritaACZ Project ID: **L64629**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64629-01	WG231536	Sodium, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG232234	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG231014	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG232234	Sulfate	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).
	WG231352	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L64629-02	WG232234	Sulfate	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).

Phelps Dodge Sierrita

ACZ Project ID: **L64629**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJO3Z5

ACZ Project ID: L64629
Date Received: 8/24/2007
Received By:
Date Printed: 8/28/2007

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)
NA4279		4.2	14

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

Notes

Phelps Dodge Sierrita
OJO3Z5

ACZ Project ID: L64629
Date Received: 8/24/2007
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
L64629-01	FGW-MO-2007-5C		Y									☐
L64629-02	UGW-MO-2007-5C									X		☐

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: _____

CHAIN of CUSTODY

164629

Address: 51 West Wetmore Rd
Tulson AZ 85705
Telephone: 520 293-1500

E-mail: Jim@mcinc.com, Billy-Dorris@fmi.com
Telephone: 520/293-1500 x113 520/648-8673

Address:	6200 W. Duval Mine Rd
	Green Valley, AZ 85622
Telephone:	(520) 648-8857

YES	☒
NO	☐

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

ANALYSES REQUESTED (attach list or use quote number)

# of Containers	Mg Na K
	K, TD, SO ₄
	F, NO ₂ , NO ₃
	SO ₄

[illegible]

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

FGW = Filtered Groundwater
UGW = Unfiltered Groundwater

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	4/23/07:1512	KY	824:07 12

August 31, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Jim Norris, Bill Dorris

Project ID: OJ03Z5

ACZ Project ID: L64565

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 22, 2007. This project has been assigned to ACZ's project number, L64565. Please reference this number in all future inquiries.

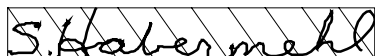
All analyses were performed according to ACZ's Quality Assurance Plan, version 12.0. The enclosed results relate only to the samples received under L64565. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 30, 2007. 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.



Phelps Dodge Sierrita

August 31, 2007

Project ID: OJ03Z5

ACZ Project ID: L64565

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from Phelps Dodge Sierrita on August 22, 2007. 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 L64565. 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.

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-532595

ACZ Sample ID: **L64565-01**

Date Sampled: 08/20/07 12:15

Date Received: 08/22/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	510			mS/cm			08/20/07 12:15	ma
pH (Field)	Field Measurement	7.0			units			08/20/07 12:15	ma
Temperature (Field)	Field Measurement	28.6			C			08/20/07 12:15	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	66.7		*	mg/L	0.2	1	08/25/07 3:22	djt
Magnesium, dissolved	M200.7 ICP	9.2			mg/L	0.2	1	08/26/07 1:39	erf
Potassium, dissolved	M200.7 ICP	2.6			mg/L	0.3	2	08/25/07 3:22	djt
Sodium, dissolved	M200.7 ICP	24.6			mg/L	0.3	2	08/25/07 3:22	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		137			mg/L	2	20	08/24/07 0:00	aeh/jlf
Carbonate as CaCO ₃		2	B		mg/L	2	20	08/24/07 0:00	aeh/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/24/07 0:00	aeh/jlf
Total Alkalinity		139		*	mg/L	2	20	08/24/07 0:00	aeh/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.0			%			08/31/07 0:00	calc
Sum of Anions		5.3			meq/L	0.1	0.5	08/31/07 0:00	calc
Sum of Cations		5.2			meq/L	0.1	0.5	08/31/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	13.9		*	mg/L	0.5	3	08/25/07 8:45	jag
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	08/25/07 8:45	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.51			mg/L	0.02	0.1	08/31/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.51	H	*	mg/L	0.02	0.1	08/23/07 18:41	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		HU	*	mg/L	0.01	0.05	08/23/07 18:41	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	350			mg/L	10	20	08/24/07 10:36	aeh
Sulfate	300.0 - Ion Chromatography	100			mg/L	1	5	08/27/07 21:22	jag
TDS (calculated)	Calculation	308			mg/L	10	50	08/31/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						08/31/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-532595

ACZ Sample ID: **L64565-02**

Date Sampled: 08/20/07 12:15

Date Received: 08/22/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	99			mg/L	1	5	08/27/07 22:17	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64565**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230868													
WG230868PBW1	PBW	08/23/07 14:32				U	mg/L		-20	20			
WG230868LCSW2	LCSW	08/23/07 14:45	WC070809-7	820		805	mg/L	98.2	90	110			
WG230868PBW2	PBW	08/23/07 17:34				U	mg/L		-20	20			
WG230868LCSW5	LCSW	08/23/07 17:46	WC070809-7	820		813.3	mg/L	99.2	90	110			
WG230868PBW3	PBW	08/23/07 20:10				U	mg/L		-20	20			
WG230868LCSW8	LCSW	08/23/07 20:22	WC070809-7	820		810.3	mg/L	98.8	90	110			
WG230868PBW4	PBW	08/23/07 22:29				U	mg/L		-20	20			
WG230868LCSW11	LCSW	08/23/07 22:41	WC070809-7	820		822.5	mg/L	100.3	90	110			
L64565-01DUP	DUP	08/24/07 1:35			139	137.9	mg/L				0.8	20	
WG230868LCSW14	LCSW	08/24/07 1:48	WC070809-7	820		819	mg/L	99.9	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230988													
WG230988ICV	ICV	08/25/07 1:09	II070821-3	100		97.25	mg/L	97.3	95	105			
WG230988ICB	ICB	08/25/07 1:14				U	mg/L		-0.6	0.6			
WG230988LFB	LFB	08/25/07 1:30	II070823-2	67.97008		70.09	mg/L	103.1	85	115			
L64558-10AS	AS	08/25/07 2:36	II070823-2	67.97008	136	188.79	mg/L	77.7	85	115			M2
L64558-10ASD	ASD	08/25/07 2:40	II070823-2	67.97008	136	191.75	mg/L	82	85	115	1.56	20	M2

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230990													
WG230990LFB	LFB	08/25/07 2:25	WI070727-1	30		32.34	mg/L	107.8	90	110			
L64538-06AS	AS	08/25/07 7:15	WI070727-1	30	U	30.01	mg/L	100	90	110			
L64538-06DUP	DUP	08/25/07 7:33			U	U	mg/L				0	20	RA

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG230990													
WG230990LFB	LFB	08/25/07 2:25	WI070727-1	1.5		1.65	mg/L	110	90	110			
L64538-06AS	AS	08/25/07 7:15	WI070727-1	1.5	.3	1.97	mg/L	111.3	90	110			M1
L64538-06DUP	DUP	08/25/07 7:33			.3	.29	mg/L				3.4	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L64565**

Project ID: OJ03Z5

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231038													
WG231038ICV	ICV	08/25/07 23:30	II070821-3	100		98.23	mg/L	98.2	95	105			
WG231038ICB	ICB	08/25/07 23:34				U	mg/L		-0.6	0.6			
WG231038LFB	LFB	08/25/07 23:50	II070823-2	54.96908		54.27	mg/L	98.7	85	115			
L64559-01AS	AS	08/26/07 1:06	II070823-2	54.96908	9.2	63.25	mg/L	98.3	85	115			
L64559-01ASD	ASD	08/26/07 1:18	II070823-2	54.96908	9.2	63.7	mg/L	99.1	85	115	0.71	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230929													
WG230929ICV	ICV	08/23/07 18:21	WI070609-1	2.416		2.342	mg/L	96.9	90	110			
WG230929ICB	ICB	08/23/07 18:23				U	mg/L		-0.06	0.06			
WG230929LFB	LFB	08/23/07 18:28	WI070307-9	2		2.017	mg/L	100.9	90	110			
L64211-01AS	AS	08/23/07 19:05	WI070307-9	6	3.89	10.13	mg/L	104	90	110			
L64211-04DUP	DUP	08/23/07 19:12			7.77	7.79	mg/L				0.3	20	

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230929													
WG230929ICV	ICV	08/23/07 18:21	WI070609-1	.609		.629	mg/L	103.3	90	110			
WG230929ICB	ICB	08/23/07 18:23				U	mg/L		-0.03	0.03			
WG230929LFB	LFB	08/23/07 18:28	WI070307-9	1		1.034	mg/L	103.4	90	110			
L64211-01AS	AS	08/23/07 18:30	WI070307-9	1	.03	1.053	mg/L	102.3	90	110			
L64211-04DUP	DUP	08/23/07 18:32			U	U	mg/L				0	20	RA

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230988													
WG230988ICV	ICV	08/25/07 1:09	II070821-3	20		20.2	mg/L	101	95	105			
WG230988ICB	ICB	08/25/07 1:14				U	mg/L		-0.9	0.9			
WG230988LFB	LFB	08/25/07 1:30	II070823-2	99.76186		104.39	mg/L	104.6	85	115			
L64558-10AS	AS	08/25/07 2:36	II070823-2	99.76186	.9	103.39	mg/L	102.7	85	115			
L64558-10ASD	ASD	08/25/07 2:40	II070823-2	99.76186	.9	103.63	mg/L	103	85	115	0.23	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230942													
WG230942PBW	PBW	08/24/07 10:10				16	mg/L		-20	20			
WG230942LCSW	LCSW	08/24/07 10:11	PCN27686	260		292	mg/L	112.3	80	120			
L64586-01DUP	DUP	08/24/07 10:39			100	90	mg/L				10.5	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64565**

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230988													
WG230988ICV	ICV	08/25/07 1:09	II070821-3	100		101.18	mg/L	101.2	95	105			
WG230988ICB	ICB	08/25/07 1:14				U	mg/L		-0.9	0.9			
WG230988LFB	LFB	08/25/07 1:30	II070823-2	98.21624		102.58	mg/L	104.4	85	115			
L64558-10AS	AS	08/25/07 2:36	II070823-2	98.21624	5.8	106.47	mg/L	102.5	85	115			
L64558-10ASD	ASD	08/25/07 2:40	II070823-2	98.21624	5.8	105.87	mg/L	101.9	85	115	0.57	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG231120													
WG231120LFB	LFB	08/27/07 16:51	WI070727-1	30		29.44	mg/L	98.1	90	110			
L64565-01AS	AS	08/27/07 21:40	WI070727-1	60	100	154.6	mg/L	91	90	110			
L64565-01DUP	DUP	08/27/07 21:59			100	99.5	mg/L				0.5	20	

Phelps Dodge SierritaACZ Project ID: **L64565**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64565-01	WG230988	Calcium, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG230990	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230929	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230868	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L64565**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64565
Date Received: 8/22/2007
Received By:
Date Printed: 8/22/2007

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)
NA4246		15.1	16

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64565
Date Received: 8/22/2007
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
L64565-01	FGW-532595		Y									☐
L64565-02	UGW-532595									X		☐

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: _____

CHAIN of CUSTODY

L64565

Name: LEAH SIMPSON
Company: HYDRO GEO CHEM INC.
E-mail: chins@HGC Inc. com

Address: 51 W. WETMORE RD
TUCSON AZ 85705-1678
Telephone: 520-293-1500

Name:	Ded Hall/Billy Norris/ Jim Norris
Company:	PDSI / HGE

E-mail: Jimna@HGCINC.com Billy-Dorric@FHL.com
Telephone: (520) 293-1500 ; (520) 648-8873

Name: NED WALL
Company: PSSI
E-mail: NED.WALL@PSSI.com

Address:	6200 W. Duval Mine Rd.
	PO Box 527 Green Valley AZ 85622
Telephone:	(520) 628-8851

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.

ANALYSES REQUESTED (attach list or use quote number)

Quote #: SIFERTA SHORT
Project/PO #: 010325
Reporting state for compliance testing: A2
Sampler's Name: MARK NEWSON
Are any samples NRC licensable material? NO

of Containers

Mg, Na, K

K. T. B. S. 504
C. 175. 175

8

PH	EC	T
6.96	510	28.6
6.96	510	28.6

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

FGW-532595	8-20-07	12:15	G20
UGW-532595	8-20-07	12:15	GW

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

FGW = Filtered Groundwater Sample
UGW = Unfiltered Groundwater Sample

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME:

8/20/07	12:45	KL	8-22-07 11:5
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August 28, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L64503

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 17, 2007. This project has been assigned to ACZ's project number, L64503. 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 L64503. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 28, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-MO-2007-4C

ACZ Sample ID: **L64503-01**

Date Sampled: 08/16/07 11:50

Date Received: 08/17/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	472			mS/cm			08/16/07 11:50	nb
pH (Field)	Field Measurement	7.6			units			08/16/07 11:50	nb
Temperature (Field)	Field Measurement	35.2			C			08/16/07 11:50	nb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	13.0			mg/L	0.2	1	08/23/07 20:33	wfg
Magnesium, dissolved	M200.7 ICP	0.3	B		mg/L	0.2	1	08/23/07 20:33	wfg
Potassium, dissolved	M200.7 ICP	1.9	B		mg/L	0.3	2	08/23/07 20:33	wfg
Sodium, dissolved	M200.7 ICP	80.8			mg/L	0.3	2	08/23/07 20:33	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		101			mg/L	2	20	08/19/07 0:00	cas
Carbonate as CaCO ₃		2	B		mg/L	2	20	08/19/07 0:00	cas
Hydroxide as CaCO ₃			U		mg/L	2	20	08/19/07 0:00	cas
Total Alkalinity		103		*	mg/L	2	20	08/19/07 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.2			%			08/28/07 0:00	calc
Sum of Anions		4.3			meq/L	0.1	0.5	08/28/07 0:00	calc
Sum of Cations		4.2			meq/L	0.1	0.5	08/28/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	11.8		*	mg/L	0.5	3	08/25/07 0:00	jag
Fluoride	M300.0 - Ion Chromatography	5.0		*	mg/L	0.1	0.5	08/25/07 0:00	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.48			mg/L	0.02	0.1	08/28/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.48		*	mg/L	0.02	0.1	08/17/07 18:59	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/17/07 18:59	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	310			mg/L	10	20	08/22/07 11:05	lcp
Sulfate	300.0 - Ion Chromatography	78.7			mg/L	0.5	3	08/25/07 0:00	jag
TDS (calculated)	Calculation	256			mg/L	10	50	08/28/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.21						08/28/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-MO-2007-4C

ACZ Sample ID: **L64503-02**

Date Sampled: 08/16/07 11:50

Date Received: 08/17/07

Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	78.6			mg/L	0.5	3	08/25/07 0:19	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64503**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230595													
WG230595PBW1	PBW	08/18/07 16:05				3	mg/L		-20	20			
WG230595LCSW2	LCSW	08/18/07 16:17	WC070809-7	820		808	mg/L	98.5	90	110			
WG230595PBW2	PBW	08/18/07 19:21				U	mg/L		-20	20			
WG230595LCSW5	LCSW	08/18/07 19:33	WC070809-7	820		799.8	mg/L	97.5	90	110			
WG230595PBW3	PBW	08/18/07 22:29				U	mg/L		-20	20			
WG230595LCSW8	LCSW	08/18/07 22:42	WC070809-7	820		806.4	mg/L	98.3	90	110			
WG230595PBW4	PBW	08/19/07 1:33				U	mg/L		-20	20			
WG230595LCSW11	LCSW	08/19/07 1:45	WC070809-7	820		802	mg/L	97.8	90	110			
L64506-02DUP	DUP	08/19/07 2:45			52	52.7	mg/L				1.3	20	
WG230595LCSW14	LCSW	08/19/07 3:20	WC070809-7	820		803.5	mg/L	98	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230926													
WG230926ICV	ICV	08/23/07 18:30	II070821-3	100		100.08	mg/L	100.1	95	105			
WG230926ICB	ICB	08/23/07 18:34				U	mg/L		-0.6	0.6			
WG230926LFB	LFB	08/23/07 18:48	II070823-2	67.97008		70.66	mg/L	104	85	115			
L64394-04AS	AS	08/23/07 19:48	II070823-2	67.97008	26.8	92.6	mg/L	96.8	85	115			
L64394-04ASD	ASD	08/23/07 19:52	II070823-2	67.97008	26.8	94.15	mg/L	99.1	85	115	1.66	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	30		32.1	mg/L	107	90	110			
L64434-01AS	AS	08/24/07 21:17	WI070727-1	600	40	671	mg/L	105.2	90	110			
L64434-01DUP	DUP	08/24/07 21:36			40	43	mg/L				7.2	20	RA

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	1.5		1.63	mg/L	108.7	90	110			
L64434-01AS	AS	08/24/07 21:17	WI070727-1	30	U	35.1	mg/L	117	90	110			M1
L64434-01DUP	DUP	08/24/07 21:36			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64503**

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230926													
WG230926ICV	ICV	08/23/07 18:30	II070821-3	100		100.01	mg/L	100	95	105			
WG230926ICB	ICB	08/23/07 18:34				U	mg/L		-0.6	0.6			
WG230926LFB	LFB	08/23/07 18:48	II070823-2	54.96908		57.39	mg/L	104.4	85	115			
L64394-04AS	AS	08/23/07 19:48	II070823-2	54.96908	2	57.46	mg/L	100.9	85	115			
L64394-04ASD	ASD	08/23/07 19:52	II070823-2	54.96908	2	58.77	mg/L	103.3	85	115	2.25	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230583													
WG230583ICV	ICV	08/17/07 18:01	WI070609-1	2.416		2.353	mg/L	97.4	90	110			
WG230583ICB	ICB	08/17/07 18:02				U	mg/L		-0.06	0.06			
WG230583LFB1	LFB	08/17/07 18:07	WI070307-9	2		1.971	mg/L	98.6	90	110			
L64501-05AS	AS	08/17/07 18:45	WI070307-9	2	.02	1.82	mg/L	90	90	110			
WG230583LFB2	LFB	08/17/07 18:46	WI070307-9	2		1.87	mg/L	93.5	90	110			
L64501-06DUP	DUP	08/17/07 18:52			U	U	mg/L				0	20	RA

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230583													
WG230583ICV	ICV	08/17/07 18:01	WI070609-1	.609		.627	mg/L	103	90	110			
WG230583ICB	ICB	08/17/07 18:02				U	mg/L		-0.03	0.03			
WG230583LFB1	LFB	08/17/07 18:07	WI070307-9	1		.983	mg/L	98.3	90	110			
L64501-05AS	AS	08/17/07 18:45	WI070307-9	1	U	.927	mg/L	92.7	90	110			
WG230583LFB2	LFB	08/17/07 18:46	WI070307-9	1		.959	mg/L	95.9	90	110			
L64501-06DUP	DUP	08/17/07 18:52			U	U	mg/L				0	20	RA

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230926													
WG230926ICV	ICV	08/23/07 18:30	II070821-3	20		19.97	mg/L	99.9	95	105			
WG230926ICB	ICB	08/23/07 18:34				U	mg/L		-0.9	0.9			
WG230926LFB	LFB	08/23/07 18:48	II070823-2	99.76186		100.53	mg/L	100.8	85	115			
L64394-04AS	AS	08/23/07 19:48	II070823-2	99.76186	U	99.53	mg/L	99.8	85	115			
L64394-04ASD	ASD	08/23/07 19:52	II070823-2	99.76186	U	101.2	mg/L	101.4	85	115	1.66	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230779													
WG230779PBW	PBW	08/22/07 10:45				20	mg/L		-20	20			
WG230779LCSW	LCSW	08/22/07 10:46	PCN27691	260		312	mg/L	120	80	120			
L64519-03DUP	DUP	08/22/07 11:14			260	250	mg/L				3.9	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64503**

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230926													
WG230926ICV	ICV	08/23/07 18:30	II070821-3	100		99.9	mg/L	99.9	95	105			
WG230926ICB	ICB	08/23/07 18:34				U	mg/L		-0.9	0.9			
WG230926LFB	LFB	08/23/07 18:48	II070823-2	98.21624		98.26	mg/L	100	85	115			
L64394-04AS	AS	08/23/07 19:48	II070823-2	98.21624	4	97.19	mg/L	94.9	85	115			
L64394-04AS	AS	08/23/07 19:48	II070823-2	98.21624	4	94.1	mg/L	91.7	85	115			
L64394-04ASD	ASD	08/23/07 19:52	II070823-2	98.21624	4	95.1	mg/L	92.8	85	115	1.06	20	
L64394-04ASD	ASD	08/23/07 19:52	II070823-2	98.21624	4	98.61	mg/L	96.3	85	115	1.06	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	30		32.21	mg/L	107.4	90	110			
L64434-01AS	AS	08/24/07 21:17	WI070727-1	600	670	1298	mg/L	104.7	90	110			
L64434-01DUP	DUP	08/24/07 21:36			670	680	mg/L				1.5	20	

Phelps Dodge SierritaACZ Project ID: **L64503**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64503-01	WG230989	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230583	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230595	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L64503**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64503
Date Received: 8/17/2007
Received By:
Date Printed: 8/17/2007

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)
NA4227		1.3	16

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64503
Date Received: 8/17/2007
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
L64503-01	FGW-MO-2007-4C		Y									☐
L64503-02	UGW-MO-2007-4C									X		☐

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: _____

August 28, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Dan Simpson, Bill Dorris, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L64405

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 14, 2007. This project has been assigned to ACZ's project number, L64405. 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 L64405. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after September 28, 2007. 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.



Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-NP-2ACZ Sample ID: **L64405-01**

Date Sampled: 08/13/07 09:40

Date Received: 08/14/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	441			mS/cm			08/13/07 9:40	nb
pH (Field)	Field Measurement	7.2			units			08/13/07 9:40	nb
Temperature (Field)	Field Measurement	26.0			C			08/13/07 9:40	nb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	49.7			mg/L	0.2	1	08/22/07 21:31	erf/djt
Magnesium, dissolved	M200.7 ICP	9.8			mg/L	0.2	1	08/22/07 21:31	erf/djt
Potassium, dissolved	M200.7 ICP	3.7			mg/L	0.3	2	08/22/07 21:31	erf/djt
Sodium, dissolved	M200.7 ICP	29.8			mg/L	0.3	2	08/22/07 21:31	erf/djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		166			mg/L	2	20	08/17/07 0:00	lcp
Carbonate as CaCO ₃			U		mg/L	2	20	08/17/07 0:00	lcp
Hydroxide as CaCO ₃			U		mg/L	2	20	08/17/07 0:00	lcp
Total Alkalinity		166			mg/L	2	20	08/17/07 0:00	lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.3			%			08/28/07 0:00	calc
Sum of Anions		4.4			meq/L	0.1	0.5	08/28/07 0:00	calc
Sum of Cations		4.7			meq/L	0.1	0.5	08/28/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.9		*	mg/L	0.5	3	08/24/07 20:23	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	08/24/07 20:23	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.35			mg/L	0.02	0.1	08/28/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.35		*	mg/L	0.02	0.1	08/14/07 21:26	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/14/07 21:26	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	270			mg/L	10	20	08/17/07 14:16	lcp
Sulfate	300.0 - Ion Chromatography	41.7			mg/L	0.5	3	08/24/07 20:23	jag
TDS (calculated)	Calculation	245			mg/L	10	50	08/28/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.10						08/28/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-NP-2

ACZ Sample ID: **L64405-02**

Date Sampled: 08/13/07 09:40

Date Received: 08/14/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.8			mg/L	0.5	3	08/24/07 20:41	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64405**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230533													
WG230533PBW1	PBW	08/17/07 12:53				3.1	mg/L		-20	20			
WG230533LCSW2	LCSW	08/17/07 13:05	WC070809-7	820		795.7	mg/L	97	90	110			
WG230533PBW2	PBW	08/17/07 16:27				U	mg/L		-20	20			
WG230533LCSW5	LCSW	08/17/07 16:39	WC070809-7	820		801.8	mg/L	97.8	90	110			
WG230533PBW3	PBW	08/17/07 18:59				U	mg/L		-20	20			
WG230533LCSW8	LCSW	08/17/07 19:10	WC070809-7	820		801.9	mg/L	97.8	90	110			
L64434-02DUP	DUP	08/17/07 20:18			28	28	mg/L				0	20	
WG230533PBW4	PBW	08/17/07 21:46				U	mg/L		-20	20			
WG230533LCSW11	LCSW	08/17/07 21:59	WC070809-7	820		800.3	mg/L	97.6	90	110			
WG230533LCSW14	LCSW	08/18/07 0:58	WC070809-7	820		803.3	mg/L	98	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230829													
WG230829ICV	ICV	08/22/07 19:54	II070821-3	100		98.67	mg/L	98.7	95	105			
WG230829ICB	ICB	08/22/07 19:58				U	mg/L		-0.6	0.6			
WG230829LFB	LFB	08/22/07 20:15	II070814-4	67.97008		69.63	mg/L	102.4	85	115			
L64419-06AS	AS	08/22/07 21:48	II070814-4	67.97008	41.7	110.14	mg/L	100.7	85	115			
L64419-06ASD	ASD	08/22/07 21:52	II070814-4	67.97008	41.7	109.87	mg/L	100.3	85	115	0.25	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	30		32.1	mg/L	107	90	110			
L64371-02AS	AS	08/24/07 17:40	WI070727-1	600	30	653	mg/L	103.8	90	110			
L64371-02DUP	DUP	08/24/07 17:58			30	34	mg/L				12.5	20	RA

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	1.5		1.63	mg/L	108.7	90	110			
L64371-02AS	AS	08/24/07 17:40	WI070727-1	30	U	32.6	mg/L	108.7	90	110			
L64371-02DUP	DUP	08/24/07 17:58			U	U	mg/L				0	20	RA

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64405**

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230829													
WG230829ICV	ICV	08/22/07 19:54	II070821-3	100		99.89	mg/L	99.9	95	105			
WG230829ICB	ICB	08/22/07 19:58				U	mg/L		-0.6	0.6			
WG230829LFB	LFB	08/22/07 20:15	II070814-4	54.96908		55.68	mg/L	101.3	85	115			
L64419-06AS	AS	08/22/07 21:48	II070814-4	54.96908	6.3	62.9	mg/L	103	85	115			
L64419-06ASD	ASD	08/22/07 21:52	II070814-4	54.96908	6.3	62.75	mg/L	102.7	85	115	0.24	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230339													
WG230339ICV	ICV	08/14/07 21:01	WI070609-1	2.416		2.336	mg/L	96.7	90	110			
WG230339ICB	ICB	08/14/07 21:03				U	mg/L		-0.06	0.06			
WG230339LFB	LFB	08/14/07 21:06	WI070307-9	2		2.053	mg/L	102.7	90	110			
L64405-01AS	AS	08/14/07 21:27	WI070307-9	2	.35	2.413	mg/L	103.2	90	110			
L64419-06DUP	DUP	08/14/07 21:30			U	U	mg/L				0	20	RA
WG230339ICV1	ICV	08/14/07 22:09	WI070609-1	2.416		2.291	mg/L	94.8	90	110			
WG230339ICB1	ICB	08/14/07 22:10				U	mg/L		-0.06	0.06			

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230339													
WG230339ICV	ICV	08/14/07 21:01	WI070609-1	.609		.617	mg/L	101.3	90	110			
WG230339ICB	ICB	08/14/07 21:03				U	mg/L		-0.03	0.03			
WG230339LFB	LFB	08/14/07 21:06	WI070307-9	1		1.008	mg/L	100.8	90	110			
L64405-01AS	AS	08/14/07 21:27	WI070307-9	1	U	1.008	mg/L	100.8	90	110			
L64419-06DUP	DUP	08/14/07 21:30			U	U	mg/L				0	20	RA
WG230339ICV1	ICV	08/14/07 22:09	WI070609-1	.609		.629	mg/L	103.3	90	110			
WG230339ICB1	ICB	08/14/07 22:10				U	mg/L		-0.03	0.03			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230829													
WG230829ICV	ICV	08/22/07 19:54	II070821-3	20		19.9	mg/L	99.5	95	105			
WG230829ICB	ICB	08/22/07 19:58				U	mg/L		-0.9	0.9			
WG230829LFB	LFB	08/22/07 20:15	II070814-4	99.76186		102.08	mg/L	102.3	85	115			
L64419-06AS	AS	08/22/07 21:48	II070814-4	99.76186	1.8	106.68	mg/L	105.1	85	115			
L64419-06ASD	ASD	08/22/07 21:52	II070814-4	99.76186	1.8	106.78	mg/L	105.2	85	115	0.09	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230558													
WG230558PBW	PBW	08/17/07 14:00				U	mg/L		-20	20			
WG230558LCSW	LCSW	08/17/07 14:01	PCN27691	260		268	mg/L	103.1	80	120			
L64468-01DUP	DUP	08/17/07 14:29			4160	4178	mg/L				0.4	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64405**

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230829													
WG230829ICV	ICV	08/22/07 19:54	II070821-3	100		100.27	mg/L	100.3	95	105			
WG230829ICB	ICB	08/22/07 19:58				U	mg/L		-0.9	0.9			
WG230829LFB	LFB	08/22/07 20:15	II070814-4	98.21624		99.69	mg/L	101.5	85	115			
L64419-06AS	AS	08/22/07 21:48	II070814-4	98.21624	13.3	113.63	mg/L	102.2	85	115			
L64419-06ASD	ASD	08/22/07 21:52	II070814-4	98.21624	13.3	113.7	mg/L	102.2	85	115	0.06	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	30		32.21	mg/L	107.4	90	110			
L64371-02AS	AS	08/24/07 17:40	WI070727-1	600	580	1167	mg/L	97.8	90	110			
L64371-02DUP	DUP	08/24/07 17:58			580	580	mg/L				0	20	

Phelps Dodge SierritaACZ Project ID: **L64405**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64405-01	WG230989	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230339	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Phelps Dodge Sierrita

ACZ Project ID: **L64405**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64405
Date Received: 8/14/2007
Received By:
Date Printed: 8/14/2007

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)
NA4183		4.0	13

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64405
Date Received: 8/14/2007
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
L64405-01	FGW-NP-2		Y									☐
L64405-02	UGW-NP-2									X		☐

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: _____

September 07, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L64380

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 11, 2007. This project has been assigned to ACZ's project number, L64380. 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 L64380. 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 October 07, 2007. 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.



Phelps Dodge Sierrita

September 07, 2007

Project ID: OJ03Z5

ACZ Project ID: L64380

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 ground water samples from Phelps Dodge Sierrita on August 11, 2007. 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 L64380. 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.

Phelps Dodge SierritaProject ID: OJ03Z5
Sample ID: FGW-CW-3ACZ Sample ID: **L64380-01**

Date Sampled: 08/10/07 16:15

Date Received: 08/11/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	444			mS/cm			08/10/07 16:15	ma
pH (Field)	Field Measurement	7.4			units			08/10/07 16:15	ma
Temperature (Field)	Field Measurement	25.9			C			08/10/07 16:15	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	51.7			mg/L	0.2	1	08/22/07 1:49	wfg
Magnesium, dissolved	M200.7 ICP	8.6			mg/L	0.2	1	08/22/07 1:49	wfg
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	2	08/22/07 1:49	wfg
Sodium, dissolved	M200.7 ICP	27.4			mg/L	0.3	2	08/22/07 1:49	wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		134		*	mg/L	2	20	08/16/07 0:00	jlf
Carbonate as CaCO ₃			U	*	mg/L	2	20	08/16/07 0:00	jlf
Hydroxide as CaCO ₃			U	*	mg/L	2	20	08/16/07 0:00	jlf
Total Alkalinity		134		*	mg/L	2	20	08/16/07 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.1			%			08/28/07 0:00	calc
Sum of Anions		4.6			meq/L	0.1	0.5	08/28/07 0:00	calc
Sum of Cations		4.5			meq/L	0.1	0.5	08/28/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	17.0			mg/L	0.5	3	08/24/07 0:07	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	08/24/07 0:07	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	3.05			mg/L	0.02	0.1	08/28/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.05		*	mg/L	0.02	0.1	08/11/07 15:47	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/11/07 15:47	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	280			mg/L	10	20	08/17/07 10:10	ear
Sulfate	300.0 - Ion Chromatography	59.5			mg/L	0.5	3	08/24/07 18:16	jag
TDS (calculated)	Calculation	261			mg/L	10	50	08/28/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						08/28/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-CW-3

ACZ Sample ID: **L64380-02**

Date Sampled: 08/10/07 16:15

Date Received: 08/11/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	59.7			mg/L	0.5	3	08/24/07 18:34	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64380**

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230456													
WG230456PBW1	PBW	08/16/07 13:52				U	mg/L		-20	20			
WG230456LCSW2	LCSW	08/16/07 14:03	WC070809-7	820		794	mg/L	96.8	90	110			
WG230456PBW2	PBW	08/16/07 18:00				U	mg/L		-20	20			
WG230456LCSW5	LCSW	08/16/07 18:12	WC070809-7	820		798.8	mg/L	97.4	90	110			
WG230456PBW3	PBW	08/16/07 20:57				U	mg/L		-20	20			
WG230456LCSW8	LCSW	08/16/07 21:09	WC070809-7	820		796	mg/L	97.1	90	110			
L64389-06DUP	DUP	08/16/07 22:32			249	247	mg/L				0.8	20	
WG230456PBW4	PBW	08/17/07 0:01				U	mg/L		-20	20			
WG230456LCSW11	LCSW	08/17/07 0:12	WC070809-7	820		803.3	mg/L	98	90	110			
WG230456LCSW14	LCSW	08/17/07 3:22	WC070809-7	820		807.2	mg/L	98.4	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	100		98.13	mg/L	98.1	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.6	0.6			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	67.97008		68.22	mg/L	100.4	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	67.97008	40.4	107.42	mg/L	98.6	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	67.97008	40.4	107.97	mg/L	99.4	85	115	0.51	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230704													
WG230704LFB	LFB	08/23/07 15:58	WI070727-1	30		30.07	mg/L	100.2	90	110			
L64298-13DUP	DUP	08/23/07 20:48			15.4	15.44	mg/L				0.3	20	
L64298-14AS	AS	08/23/07 21:24	WI070727-1	30	15.3	47.16	mg/L	106.2	90	110			

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			
WG230704													
WG230704LFB	LFB	08/23/07 15:58	WI070727-1	1.5		1.55	mg/L	103.3	90	110			
L64298-13DUP	DUP	08/23/07 20:48			4.6	4.63	mg/L				0.7	20	
L64298-14AS	AS	08/23/07 21:24	WI070727-1	1.5	4.6	5.88	mg/L	85.3	90	110			M2

Phelps Dodge Sierrita

ACZ Project ID: **L64380**

Project ID: OJ03Z5

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	100		99.43	mg/L	99.4	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.6	0.6			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	54.96908		54.69	mg/L	99.5	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	54.96908	6.4	61.65	mg/L	100.5	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	54.96908	6.4	61.71	mg/L	100.6	85	115	0.1	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230117													
WG230117ICV	ICV	08/11/07 15:25	WI070609-1	2.416		2.353	mg/L	97.4	90	110			
WG230117ICB	ICB	08/11/07 15:26				U	mg/L		-0.06	0.06			
WG230117LFB	LFB	08/11/07 15:30	WI070307-9	2		2.055	mg/L	102.8	90	110			
L64378-01DUP	DUP	08/11/07 15:35			.03	.044	mg/L				37.8	20	RA
L64377-01AS	AS	08/11/07 15:50	WI070307-9	10	4.4	15.07	mg/L	106.7	90	110			

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230117													
WG230117ICV	ICV	08/11/07 15:25	WI070609-1	.609		.628	mg/L	103.1	90	110			
WG230117ICB	ICB	08/11/07 15:26				U	mg/L		-0.03	0.03			
WG230117LFB	LFB	08/11/07 15:30	WI070307-9	1		1.071	mg/L	107.1	90	110			
L64377-01AS	AS	08/11/07 15:33	WI070307-9	1	U	1.078	mg/L	107.8	90	110			
L64378-01DUP	DUP	08/11/07 15:35				U	mg/L				0	20	RA

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	20		19.93	mg/L	99.7	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.9	0.9			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	99.76186		99.96	mg/L	100.2	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	99.76186	3	105.56	mg/L	102.8	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	99.76186	3	105.87	mg/L	103.1	85	115	0.29	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230528													
WG230528PBW	PBW	08/17/07 10:00				U	mg/L		-20	20			
WG230528LCSW	LCSW	08/17/07 10:02	PCN27691	260		260	mg/L	100	80	120			
L64389-05DUP	DUP	08/17/07 10:31			830	836	mg/L				0.7	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64380**

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230744													
WG230744ICV	ICV	08/21/07 23:31	II070821-3	100		100.54	mg/L	100.5	95	105			
WG230744ICB	ICB	08/21/07 23:35				U	mg/L		-0.9	0.9			
WG230744LFB	LFB	08/21/07 23:52	II070814-4	98.21624		98.35	mg/L	100.1	85	115			
L64349-01AS	AS	08/22/07 0:59	II070814-4	98.21624	30.4	129.53	mg/L	100.9	85	115			
L64349-01ASD	ASD	08/22/07 1:03	II070814-4	98.21624	30.4	129.34	mg/L	100.7	85	115	0.15	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	30		32.21	mg/L	107.4	90	110			
L64371-02AS	AS	08/24/07 17:40	WI070727-1	600	580	1167	mg/L	97.8	90	110			
L64371-02DUP	DUP	08/24/07 17:58			580	580	mg/L				0	20	

Phelps Dodge SierritaACZ Project ID: **L64380**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64380-01	WG230704	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG230117	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230456	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L64380**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64380
Date Received: 8/11/2007
Received By:
Date Printed: 8/11/2007

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)
NA4173		13.3	16

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

Notes

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64380
Date Received: 8/11/2007
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
L64380-01	FGW-CW-3		Y									☐
L64380-02	UGW-CW-3									X		☐

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: _____

404380

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

Address: 51 W. Wetmore Rd.
Tucson, AZ 85705
Telephone (520) 293-1500

E-mail: jimn@hrcinc.com / billy-dorris@fni.com
Telephone: (520) 293-1500 x.112 / (520) 648-8873

Address: 6200 W. Duval Mine Rd.
Po Box 527, Green Valley, AZ 85622
Telephone (520) 648-8857

YES	☒
NO	☐

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

ANALYSES REQUESTED (attach list or use quote number)

# of Containers	1 mg, Na, K						
	12 TDS, 504 -						
	1 T, 5 L, 100, 100						
	104						

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

FGW = Filtered GW-Sample
UGW = Unfiltered GW-Sample

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

FRMAD050.03.05.02

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

September 06, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Jim Norris, Dan Simpson

Project ID: OJ03Z5

ACZ Project ID: L64371

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 10, 2007. This project has been assigned to ACZ's project number, L64371. 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 L64371. 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 October 06, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-MO-2007-2

ACZ Sample ID: **L64371-01**

Date Sampled: 08/09/07 15:10

Date Received: 08/10/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	1271			mS/cm			08/09/07 15:10	ma
pH (Field)	Field Measurement	7.1			units			08/09/07 15:10	ma
Temperature (Field)	Field Measurement	32.2			C			08/09/07 15:10	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	181			mg/L	0.2	1	08/28/07 12:23	djt
Magnesium, dissolved	M200.7 ICP	33.0			mg/L	0.2	1	08/28/07 12:23	djt
Potassium, dissolved	M200.7 ICP	7.1			mg/L	0.3	2	08/30/07 10:26	erf
Sodium, dissolved	M200.7 ICP	69.6			mg/L	0.3	2	08/28/07 12:23	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		304			mg/L	2	20	08/16/07 0:00	jlf
Carbonate as CaCO ₃			U		mg/L	2	20	08/16/07 0:00	jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	08/16/07 0:00	jlf
Total Alkalinity		304		*	mg/L	2	20	08/16/07 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-8.8			%			09/06/07 0:00	calc
Sum of Anions		17.9			meq/L	0.1	0.5	09/06/07 0:00	calc
Sum of Cations		15.0			meq/L	0.1	0.5	09/06/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	28.2		*	mg/L	0.5	3	08/16/07 6:59	jag
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	08/16/07 6:59	jag
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	0.87			mg/L	0.02	0.1	09/06/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.87			mg/L	0.02	0.1	08/10/07 19:24	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/10/07 19:24	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1030			mg/L	10	20	08/16/07 11:57	ear
Sulfate	300.0 - Ion Chromatography	520		*	mg/L	10	50	08/16/07 12:13	jag
TDS (calculated)	Calculation	1030			mg/L	10	50	09/06/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.00						09/06/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-MO-2007-2

ACZ Sample ID: **L64371-02**

Date Sampled: 08/08/07 15:10

Date Received: 08/10/07

Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	580			mg/L	10	50	08/24/07 17:22	jag

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64371**

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230456													
WG230456PBW1	PBW	08/16/07 13:52				U	mg/L		-20	20			
WG230456LCSW2	LCSW	08/16/07 14:03	WC070809-7	820		794	mg/L	96.8	90	110			
WG230456PBW2	PBW	08/16/07 18:00				U	mg/L		-20	20			
WG230456LCSW5	LCSW	08/16/07 18:12	WC070809-7	820		798.8	mg/L	97.4	90	110			
L64379-03DUP	DUP	08/16/07 20:51			103	103.3	mg/L				0.3	20	
WG230456PBW3	PBW	08/16/07 20:57				U	mg/L		-20	20			
WG230456LCSW8	LCSW	08/16/07 21:09	WC070809-7	820		796	mg/L	97.1	90	110			
WG230456PBW4	PBW	08/17/07 0:01				U	mg/L		-20	20			
WG230456LCSW11	LCSW	08/17/07 0:12	WC070809-7	820		803.3	mg/L	98	90	110			
WG230456LCSW14	LCSW	08/17/07 3:22	WC070809-7	820		807.2	mg/L	98.4	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231154													
WG231154ICV1	ICV	08/28/07 10:51	II070821-3	100		96.15	mg/L	96.2	95	105			
WG231154ICB	ICB	08/28/07 10:55				U	mg/L		-0.6	0.6			
WG231154LFB	LFB	08/28/07 11:09	II070823-2	67.97008		70.09	mg/L	103.1	85	115			
L64360-12AS	AS	08/28/07 12:09	II070823-2	135.94016	100	245.15	mg/L	106.8	85	115			
L64360-12ASD	ASD	08/28/07 12:12	II070823-2	135.94016	100	241.15	mg/L	103.8	85	115	1.65	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	20		20.34	mg/L	101.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	20		20.31	mg/L	101.6	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230384													
WG230384ICV	ICV	06/11/07 13:52	IC070710-1	20		20.34	mg/L	101.7	90	110			
WG230384ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG230384LFB	LFB	08/15/07 22:32	WI070727-1	30		31.17	mg/L	103.9	90	110			
L63661-02DUP	DUP	08/16/07 3:04			.8	.75	mg/L				6.5	20	RA
L63661-02AS	AS	08/16/07 3:58	WI070727-1	30	.8	30.36	mg/L	98.5	90	110			
L63661-02AS	AS	08/16/07 9:48	WI070727-1	300	6	285.8	mg/L	93.3	90	110			
L63661-02DUP	DUP	08/16/07 10:06			6	5.7	mg/L				5.1	20	RA

Phelps Dodge Sierrita

ACZ Project ID: **L64371**

Project ID: OJ03Z5

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	3.984		4.13	mg/L	103.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	3.984		4.11	mg/L	103.2	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-0.3	0.3			

WG230384

WG230384ICV	ICV	06/11/07 13:52	IC070710-1	3.984		4.13	mg/L	103.7	90	110			
WG230384ICB	ICB	06/11/07 14:10				U	mg/L		-0.3	0.3			
WG230384LFB	LFB	08/15/07 22:32	WI070727-1	1.5		1.62	mg/L	108	90	110			
L63661-02DUP	DUP	08/16/07 3:04			.3	.3	mg/L				0	20	RA
L63661-02AS	AS	08/16/07 3:58	WI070727-1	1.5	.3	1.86	mg/L	104	90	110			
L63661-02AS	AS	08/16/07 9:48	WI070727-1	15	U	15.7	mg/L	104.7	90	110			
L63661-02DUP	DUP	08/16/07 10:06			U	U	mg/L				0	20	RA

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231154													
WG231154ICV1	ICV	08/28/07 10:51	II070821-3	100		97.15	mg/L	97.2	95	105			
WG231154ICB	ICB	08/28/07 10:55				U	mg/L		-0.6	0.6			
WG231154LFB	LFB	08/28/07 11:09	II070823-2	54.96908		56.34	mg/L	102.5	85	115			
L64360-12AS	AS	08/28/07 12:09	II070823-2	109.93816	19	137.43	mg/L	107.7	85	115			
L64360-12ASD	ASD	08/28/07 12:12	II070823-2	109.93816	19	134.87	mg/L	105.4	85	115	1.88	20	

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230106													
WG230106ICV	ICV	08/10/07 19:11	WI070609-1	2.416		2.43	mg/L	100.6	90	110			
WG230106ICB	ICB	08/10/07 19:13				U	mg/L		-0.06	0.06			
WG230106LFB	LFB	08/10/07 19:16	WI070307-9	2		2.056	mg/L	102.8	90	110			
L64361-01DUP	DUP	08/10/07 19:21			.46	.473	mg/L				2.8	20	
WG230106ICV1	ICV	08/10/07 20:00	WI070609-1	2.416		2.333	mg/L	96.6	90	110			
WG230106ICB1	ICB	08/10/07 20:01				U	mg/L		-0.06	0.06			
L63999-05AS	AS	08/10/07 20:03	WI070307-9	4	3.28	7.492	mg/L	105.3	90	110			

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230106													
WG230106ICV	ICV	08/10/07 19:11	WI070609-1	.609		.623	mg/L	102.3	90	110			
WG230106ICB	ICB	08/10/07 19:13				U	mg/L		-0.03	0.03			
WG230106LFB	LFB	08/10/07 19:16	WI070307-9	1		1.02	mg/L	102	90	110			
L63999-05AS	AS	08/10/07 19:19	WI070307-9	1	U	1.015	mg/L	101.5	90	110			
L64361-01DUP	DUP	08/10/07 19:21			U	U	mg/L				0	20	RA
WG230106ICV1	ICV	08/10/07 20:00	WI070609-1	.609		.627	mg/L	103	90	110			
WG230106ICB1	ICB	08/10/07 20:01				U	mg/L		-0.03	0.03			

Phelps Dodge Sierrita

ACZ Project ID: **L64371**

Project ID: OJ03Z5

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231279													
WG231279ICV	ICV	08/30/07 10:05	II070821-3	20		19.31	mg/L	96.6	95	105			
WG231279ICB	ICB	08/30/07 10:09				U	mg/L		-0.9	0.9			
WG231279LFB	LFB	08/30/07 10:23	II070823-2	99.76186		101.14	mg/L	101.4	85	115			
L64470-11AS	AS	08/30/07 10:54	II070823-2	99.76186	17.1	120.74	mg/L	103.9	85	115			
L64470-11ASD	ASD	08/30/07 10:57	II070823-2	99.76186	17.1	119.85	mg/L	103	85	115	0.74	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG230450													
WG230450PBW	PBW	08/16/07 11:00				U	mg/L		-20	20			
WG230450LCSW	LCSW	08/16/07 11:02	PCN27692	260		260	mg/L	100	80	120			
L64371-01DUP	DUP	08/16/07 12:00			1030	1036	mg/L				0.6	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231154													
WG231154ICV1	ICV	08/28/07 10:51	II070821-3	100		98.32	mg/L	98.3	95	105			
WG231154ICB	ICB	08/28/07 10:55				U	mg/L		-0.9	0.9			
WG231154LFB	LFB	08/28/07 11:09	II070823-2	98.21624		101.38	mg/L	103.2	85	115			
L64360-12AS	AS	08/28/07 12:09	II070823-2	196.43248	430	618.33	mg/L	95.9	85	115			
L64360-12ASD	ASD	08/28/07 12:12	II070823-2	196.43248	430	612.12	mg/L	92.7	85	115	1.01	20	

Sulfate

300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG226250													
WG226250ICV	ICV	06/11/07 13:52	IC070606-1	50.15		51.51	mg/L	102.7	90	110			
WG226250ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG226250ICV1	ICV	06/12/07 14:59	IC070606-1	50.15		51.17	mg/L	102	90	110			
WG226250ICB1	ICB	06/12/07 15:17				U	mg/L		-1.5	1.5			
WG230384													
WG230384ICV	ICV	06/11/07 13:52	IC070710-1	50.15		51.51	mg/L	102.7	90	110			
WG230384ICB	ICB	06/11/07 14:10				U	mg/L		-1.5	1.5			
WG230384LFB	LFB	08/15/07 22:32	WI070727-1	30		32.71	mg/L	109	90	110			
L63661-02AS	AS	08/16/07 9:48	WI070727-1	300	162	429.5	mg/L	89.2	90	110			M2
L63661-02DUP	DUP	08/16/07 10:06			162	162.5	mg/L				0.3	20	
WG230989													
WG230989LFB	LFB	08/24/07 16:28	WI070727-1	30		32.21	mg/L	107.4	90	110			
L64371-02AS	AS	08/24/07 17:40	WI070727-1	600	580	1167	mg/L	97.8	90	110			
L64371-02DUP	DUP	08/24/07 17:58			580	580	mg/L				0	20	

Phelps Dodge SierritaACZ Project ID: **L64371**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64371-01	WG230384	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Fluoride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230106	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	BE	Target analyte in continuing calibration blank (CCB) at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG230384	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG230456	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

Phelps Dodge Sierrita

ACZ Project ID: **L64371**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64371
Date Received: 8/10/2007
Received By:
Date Printed: 8/10/2007

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)
NA4169		3.3	14

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

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L64371
 Date Received: 8/10/2007
 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
L64371-01	FGW-MO-2007-2		Y									☐
L64371-02	UGW-MO-2007-2									X		☐

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: _____

264371

ACZ Laboratories, Inc.

CHAIN of CUSTODY

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

Report to:

Name: Dan Simpson
 Company: HGC, Inc.
 E-mail: dans@hgcinc.com

Address: 51 W. Wetmore Rd.
TUCSON, AZ 85705
 Telephone: (520) 293-1500

Copy of Report to:

Name: Ned Hall, Bill Dorris, Jim Norris
 Company: PDSI / HGC, Inc.

E-mail: Jimn@hgcinc.com / billy-dorris@fmi.com
 Telephone: (520) 293-1500 x.112 / (520) 648-8873

Invoice to:

Name: Ned Hall
 Company: PDSI
 E-mail: ned-hall@fmi.com

Address: 6200 W. Duval Mine Rd.
PO Box 527, Green Valley, AZ 85622
 Telephone: (520) 648-8857

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 #: Sierrita short
 Project/PO #: CJ03Z5
 Reporting state for compliance testing: AZ
 Sampler's Name: NJ. Babb
 Are any samples NRC licensable material? NO

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	ANALYSES REQUESTED						pH	EC	T°C
				Ca, Mg, Na, K	Alk TDS, SO ₄	Cl ⁻ , F ⁻ , NO ₂ , NO ₃	CO ₃					
FGW-Mo-2007-2	8-9-07/15:10	GW	2	X	X					7.11	1271	32.2
UGW-Mo-2007-2	8-9-07/15:10	GW	1				X			7.11	1271	32.2

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

REMARKS

FGW = filtered GW-sample
 UGW = unfiltered GW-sample

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>Ned Hall</u>	<u>8/9/07/16:45</u>	<u>KW</u>	<u>8-10-07 10:56</u>

September 18, 2007

Report to:

Ned Hall

Phelps Dodge Sierrita

P.O. Box 527 6200 W. Duval Mine Rd.

Green Valley, AZ 85622-0527

Bill to:

Accounts Payable

Phelps Dodge Sierrita

P.O. Box 2671

Phoenix, AZ 85002-2671

cc: Bill Dorris, Dan Simpson, Jim Norris

Project ID: OJ03Z5

ACZ Project ID: L64631

Ned Hall:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 24, 2007. This project has been assigned to ACZ's project number, L64631. 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 L64631. 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 October 18, 2007. 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.



Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: FGW-586729

ACZ Sample ID: **L64631-01**

Date Sampled: 08/23/07 10:40

Date Received: 08/24/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	602			mS/cm			08/23/07 10:40	ma
pH (Field)	Field Measurement	7.1			units			08/23/07 10:40	ma
Temperature (Field)	Field Measurement	24.7			C			08/23/07 10:40	ma

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	74.0			mg/L	0.2	1	09/03/07 19:58	djt
Magnesium, dissolved	M200.7 ICP	12.1			mg/L	0.2	1	09/03/07 19:58	djt
Potassium, dissolved	M200.7 ICP	3.5			mg/L	0.3	2	09/03/07 19:58	djt
Sodium, dissolved	M200.7 ICP	40.9		*	mg/L	0.3	2	09/03/07 19:58	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		175			mg/L	2	20	08/30/07 0:00	lcp
Carbonate as CaCO ₃			U		mg/L	2	20	08/30/07 0:00	lcp
Hydroxide as CaCO ₃			U		mg/L	2	20	08/30/07 0:00	lcp
Total Alkalinity		175		*	mg/L	2	20	08/30/07 0:00	lcp
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.2			%			09/18/07 0:00	calc
Sum of Anions		6.1			meq/L	0.1	0.5	09/18/07 0:00	calc
Sum of Cations		6.5			meq/L	0.1	0.5	09/18/07 0:00	calc
Chloride	M300.0 - Ion Chromatography	18.2			mg/L	0.5	3	09/13/07 19:18	ccp
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	09/13/07 19:18	ccp
Nitrate as N, dissolved	Calculation: NO ₃ NO ₂ minus NO ₂	1.76			mg/L	0.02	0.1	09/18/07 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.76			mg/L	0.02	0.1	08/24/07 21:19	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	08/24/07 21:19	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	380			mg/L	10	20	08/29/07 11:06	cas
Sulfate	300.0 - Ion Chromatography	93.7		*	mg/L	0.5	3	09/13/07 19:18	ccp
TDS (calculated)	Calculation	355			mg/L	10	50	09/18/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						09/18/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03Z5

Sample ID: UGW-586729

ACZ Sample ID: **L64631-02**

Date Sampled: 08/23/07 10:40

Date Received: 08/24/07

Sample Matrix: Ground Water

Field Data

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)	Field Measurement	602			mS/cm			08/23/07 10:40	ma
pH (Field)	Field Measurement	7.1			units			08/23/07 10:40	ma
Temperature (Field)	Field Measurement	24.7			C			08/23/07 10:40	ma

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	93.6		*	mg/L	0.5	3	09/13/07 20:12	ccp

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita

ACZ Project ID: **L64631**

Project ID: OJ03Z5

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231352													
WG231352PBW1	PBW	08/30/07 11:22				U	mg/L		-20	20			
WG231352LCSW2	LCSW	08/30/07 11:34	WC070828-1	820		811.7	mg/L	99	90	110			
L64658-01DUP	DUP	08/30/07 14:17			125	125.6	mg/L				0.5	20	
WG231352PBW2	PBW	08/30/07 14:22				U	mg/L		-20	20			
WG231352LCSW5	LCSW	08/30/07 14:35	WC070828-1	820		824.4	mg/L	100.5	90	110			
WG231352PBW3	PBW	08/30/07 18:14				U	mg/L		-20	20			
WG231352LCSW8	LCSW	08/30/07 18:26	WC070828-1	820		826.8	mg/L	100.8	90	110			
WG231352PBW4	PBW	08/30/07 21:22				U	mg/L		-20	20			
WG231352LCSW11	LCSW	08/30/07 21:34	WC070828-1	820		828.7	mg/L	101.1	90	110			
WG231352LCSW14	LCSW	08/31/07 0:12	WC070828-1	820		826.4	mg/L	100.8	90	110			

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		101.94	mg/L	101.9	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.6	0.6			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	67.97008		71.99	mg/L	105.9	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	67.97008	3.3	76.71	mg/L	108	85	115			
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	67.97008	3.3	75.24	mg/L	105.8	85	115	1.93	20	

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	20		19.89	mg/L	99.5	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-1.5	1.5			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	30		29.34	mg/L	97.8	90	110			
L64532-01DUP	DUP	09/13/07 17:11			69	70.9	mg/L				2.7	20	
L64532-02AS	AS	09/13/07 17:47	WI070727-1	30	8.4	36.91	mg/L	95	90	110			

Fluoride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	3.984		4.19	mg/L	105.2	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-0.3	0.3			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	1.5		1.54	mg/L	102.7	90	110			
L64532-01DUP	DUP	09/13/07 17:11			44.6	45.71	mg/L				2.5	20	
L64532-02AS	AS	09/13/07 17:47	WI070727-1	1.5	4.3	5.51	mg/L	80.7	90	110			M2

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		103.02	mg/L	103	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.6	0.6			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	54.96908		58.14	mg/L	105.8	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	54.96908	.8	59.62	mg/L	107	85	115			
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	54.96908	.8	58.43	mg/L	104.8	85	115	2.02	20	

Phelps Dodge Sierrita
 Project ID: OJ03Z5

ACZ Project ID: **L64631**

Nitrate/Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231014													
WG231014ICV	ICV	08/24/07 20:17	WI070609-1	2.416		2.375	mg/L	98.3	90	110			
WG231014ICB	ICB	08/24/07 20:18				U	mg/L		-0.06	0.06			
WG231014LFB1	LFB	08/24/07 20:23	WI070307-9	2		1.979	mg/L	99	90	110			
WG231014LFB2	LFB	08/24/07 21:02	WI070307-9	2		1.881	mg/L	94.1	90	110			
L64613-07AS	AS	08/24/07 21:08	WI070307-9	2	U	1.794	mg/L	89.7	90	110			
L64621-01DUP	DUP	08/24/07 21:10			1.33	1.351	mg/L				1.6	20	

Nitrite as N, dissolved

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231014													
WG231014ICV	ICV	08/24/07 20:17	WI070609-1	.609		.633	mg/L	103.9	90	110			
WG231014ICB	ICB	08/24/07 20:18				U	mg/L		-0.03	0.03			
WG231014LFB1	LFB	08/24/07 20:23	WI070307-9	1		1.016	mg/L	101.6	90	110			
WG231014LFB2	LFB	08/24/07 21:02	WI070307-9	1		1.018	mg/L	101.8	90	110			
L64613-07AS	AS	08/24/07 21:08	WI070307-9	1	U	.984	mg/L	98.4	90	110			
L64621-01DUP	DUP	08/24/07 21:10			U	U	mg/L				0	20	RA

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	20		19.71	mg/L	98.6	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.9	0.9			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	99.76186		100.95	mg/L	101.2	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	99.76186	3.5	112.67	mg/L	109.4	85	115			
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	99.76186	3.5	110.41	mg/L	107.2	85	115	2.03	20	

Residue, Filterable (TDS) @180C

160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231255													
WG231255PBW	PBW	08/29/07 11:00				U	mg/L		-20	20			
WG231255LCSW	LCSW	08/29/07 11:01	PCN27686	260		282	mg/L	108.5	80	120			
L64652-02DUP	DUP	08/29/07 11:15			6040	6072	mg/L				0.5	20	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG231536													
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		98.2	mg/L	98.2	95	105			
WG231536ICV	ICV	09/03/07 17:42	II070821-3	100		99.2	mg/L	99.2	95	105			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-6	6			
WG231536ICB	ICB	09/03/07 17:47				U	mg/L		-0.9	0.9			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	98.21624		99.2	mg/L	101	85	115			
WG231536LFB	LFB	09/03/07 18:03	II070829-11	98.21624		99.28	mg/L	101.1	85	115			
L64613-03AS	AS	09/03/07 19:09	II070829-11	98.21624	612	684.6	mg/L	73.9	85	115			M3
L64613-03ASD	ASD	09/03/07 19:13	II070829-11	98.21624	612	684.2	mg/L	73.5	85	115	0.06	20	M3

Phelps Dodge Sierrita
Project ID: OJ03Z5

ACZ Project ID: **L64631**

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG232234													
WG232234ICV	ICV	09/13/07 15:59	WI070910-1	50.1		52.62	mg/L	105	90	110			
WG232234ICB	ICB	09/13/07 16:17				U	mg/L		-1.5	1.5			
WG232234LFB	LFB	09/13/07 16:35	WI070727-1	30		30.67	mg/L	102.2	90	110			
L64532-01DUP	DUP	09/13/07 17:11			U	U	mg/L				0	20	RA
L64532-02AS	AS	09/14/07 11:59	WI070727-1	300	494	798.9	mg/L	101.6	90	110			

Phelps Dodge SierritaACZ Project ID: **L64631**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64631-01	WG231536	Sodium, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG232234	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG231014	Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG232234	Sulfate	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).
	WG231352	Total Alkalinity	SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.
L64631-02	WG232234	Sulfate	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).

Phelps Dodge Sierrita

ACZ Project ID: **L64631**

No certification qualifiers associated with this analysis

Phelps Dodge Sierrita
OJ03Z5

ACZ Project ID: L64631
Date Received: 8/24/2007
Received By:
Date Printed: 8/28/2007

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)
NA4278		3.5	14

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

Notes

Phelps Dodge Sierrita
 OJ03Z5

ACZ Project ID: L64631
 Date Received: 8/24/2007
 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
L64631-01	FGW-586729		Y									☐
L64631-02	UGW-586729									X		☐

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

August 20, 2007

Cc: Dan Simpson

Project ID: OJ03DL
ACZ Project ID: L64070 - SHORT

Bill Dorris:

Enclosed are analytical reports for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 26, 2007. This project was assigned to ACZ's project number, L64070. 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 L64070. 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.





Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: TB072307A

ACZ Sample ID: **L64070-01**

Date Sampled: 07/23/07 09:00

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP		U		mg/L	0.2	1	08/06/07 15:48	msh
Magnesium, dissolved	M200.7 ICP		U	*	mg/L	0.2	1	08/06/07 15:48	msh
Potassium, dissolved	M200.7 ICP		U		mg/L	0.3	2	08/07/07 22:53	wfg
Sodium, dissolved	M200.7 ICP	0.7	B		mg/L	0.3	2	08/06/07 15:48	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		n/a			%			08/20/07 0:00	calc
Sum of Anions		N/A			meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations			U		meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E		U	*	mg/L	1	5	07/31/07 11:09	mls/jag
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	08/08/07 11:52	jlf
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved		U	*	mg/L	0.02	0.1	08/04/07 16:59	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C		U		mg/L	10	20	07/30/07 13:48	aeh
Sulfate	SM4500 SO ₄ -D		U	*	mg/L	10	50	08/07/07 14:26	ear
TDS (calculated)	Calculation		U		mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	n/a						08/20/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: EQB072307A

ACZ Sample ID: **L64070-02**

Date Sampled: 07/23/07 09:02

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP		U		mg/L	0.2	1	08/06/07 15:52	msh
Magnesium, dissolved	M200.7 ICP		U	*	mg/L	0.2	1	08/06/07 15:52	msh
Potassium, dissolved	M200.7 ICP		U		mg/L	0.3	2	08/07/07 22:58	wfg
Sodium, dissolved	M200.7 ICP	0.5	B		mg/L	0.3	2	08/06/07 15:52	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		n/a			%			08/20/07 0:00	calc
Sum of Anions		0.2	B		meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations			U		meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E		U	*	mg/L	1	5	07/31/07 11:09	mls/jag
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	08/03/07 13:12	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	0.04	B		mg/L	0.02	0.1	08/04/07 17:00	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C		U		mg/L	10	20	07/30/07 13:50	aeh
Sulfate	SM4500 SO ₄ -D	10	B		mg/L	10	50	08/14/07 10:05	jlf
TDS (calculated)	Calculation	11	B		mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	n/a						08/20/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: DUP072407A

ACZ Sample ID: **L64070-03**

Date Sampled: 07/24/07 00:00

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	187			mg/L	0.2	1	08/06/07 15:55	msh
Magnesium, dissolved	M200.7 ICP	19.8		*	mg/L	0.2	1	08/06/07 15:55	msh
Potassium, dissolved	M200.7 ICP	4.9			mg/L	0.3	2	08/07/07 23:02	wfg
Sodium, dissolved	M200.7 ICP	59.5			mg/L	0.3	2	08/06/07 15:55	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		120			mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity		120			mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.8			%			08/20/07 0:00	calc
Sum of Anions		12.7			meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations		13.7			meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	53		*	mg/L	1	5	07/31/07 11:09	mls/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	08/03/07 13:26	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.76			mg/L	0.02	0.1	08/04/07 17:03	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	840			mg/L	10	20	07/30/07 13:51	aeh
Sulfate	SM4500 SO ₄ -D	420			mg/L	10	50	08/07/07 15:11	ear
TDS (calculated)	Calculation	817			mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.03						08/20/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: ESP-4

ACZ Sample ID: **L64070-04**

Date Sampled: 07/24/07 12:42

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	190			mg/L	0.2	1	08/06/07 15:58	msh
Magnesium, dissolved	M200.7 ICP	20.0		*	mg/L	0.2	1	08/06/07 15:58	msh
Potassium, dissolved	M200.7 ICP	4.7			mg/L	0.3	2	08/07/07 23:06	wfg
Sodium, dissolved	M200.7 ICP	59.3			mg/L	0.3	2	08/06/07 15:58	msh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		119			mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity		119			mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		5.3			%			08/20/07 0:00	calc
Sum of Anions		12.5			meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations		13.9			meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	53		*	mg/L	1	5	07/31/07 11:18	mls/jag
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	08/03/07 13:29	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.71			mg/L	0.02	0.1	08/04/07 15:38	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	830			mg/L	10	20	07/30/07 13:52	aeh
Sulfate	SM4500 SO ₄ -D	410			mg/L	10	50	08/07/07 15:15	ear
TDS (calculated)	Calculation	809			mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.03						08/20/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-20

ACZ Sample ID: **L64070-05**

Date Sampled: 07/24/07 11:50

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	500			mg/L	0.4	2	08/07/07 0:06	djt
Magnesium, dissolved	M200.7 ICP	126			mg/L	0.4	2	08/07/07 0:06	djt
Potassium, dissolved	M200.7 ICP	8.6			mg/L	0.6	3	08/07/07 0:06	djt
Sodium, dissolved	M200.7 ICP	144			mg/L	0.6	3	08/07/07 0:06	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		138			mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity		138			mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.8			%			08/20/07 0:00	calc
Sum of Anions		39.6			meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations		41.9			meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	130		*	mg/L	10	50	07/31/07 11:30	mls/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/03/07 13:32	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	3.69			mg/L	0.06	0.3	08/04/07 16:08	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2760			mg/L	10	20	07/30/07 13:54	aeh
Sulfate	SM4500 SO ₄ -D	1580			mg/L	10	50	08/07/07 15:19	ear
TDS (calculated)	Calculation	2570			mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						08/20/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: IW-21

ACZ Sample ID: **L64070-06**

Date Sampled: 07/24/07 11:35

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	502			mg/L	0.4	2	08/07/07 0:10	djt
Magnesium, dissolved	M200.7 ICP	125			mg/L	0.4	2	08/07/07 0:10	djt
Potassium, dissolved	M200.7 ICP	10.6			mg/L	0.6	3	08/07/07 0:10	djt
Sodium, dissolved	M200.7 ICP	150			mg/L	0.6	3	08/07/07 0:10	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		136			mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity		136			mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.9			%			08/20/07 0:00	calc
Sum of Anions		40.6			meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations		42.2			meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	130		*	mg/L	10	50	07/31/07 11:30	mls/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/03/07 13:35	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	2.75			mg/L	0.02	0.1	08/04/07 15:47	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2810			mg/L	10	20	07/30/07 13:55	aeh
Sulfate	SM4500 SO ₄ -D	1630			mg/L	10	50	08/07/07 15:23	ear
TDS (calculated)	Calculation	2630			mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						08/20/07 0:00	calc

Arizona license number: AZ0102

Phelps Dodge Sierrita

Project ID: OJ03DL

Sample ID: PZ-7

ACZ Sample ID: **L64070-07**

Date Sampled: 07/24/07 11:05

Date Received: 07/26/07

Sample Matrix: Ground Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	161			mg/L	0.2	1	08/07/07 0:14	djt
Magnesium, dissolved	M200.7 ICP	43.6			mg/L	0.2	1	08/07/07 0:14	djt
Potassium, dissolved	M200.7 ICP	4.1			mg/L	0.3	2	08/07/07 0:14	djt
Sodium, dissolved	M200.7 ICP	33.6			mg/L	0.3	2	08/07/07 0:14	djt

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration								
Bicarbonate as CaCO ₃		106			mg/L	2	20	07/27/07 0:00	lcp/jlf
Carbonate as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Hydroxide as CaCO ₃			U		mg/L	2	20	07/27/07 0:00	lcp/jlf
Total Alkalinity		106			mg/L	2	20	07/27/07 0:00	lcp/jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		5.6			%			08/20/07 0:00	calc
Sum of Anions		11.8			meq/L	0.1	0.5	08/20/07 0:00	calc
Sum of Cations		13.2			meq/L	0.1	0.5	08/20/07 0:00	calc
Chloride	325.2 / SM4500Cl-E	76		*	mg/L	1	5	07/31/07 11:18	mls/jag
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	08/03/07 13:38	cas
Nitrate/Nitrite as N	M353.2 - H ₂ SO ₄ preserved	1.59			mg/L	0.02	0.1	08/04/07 15:49	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	840			mg/L	10	20	07/30/07 13:56	aeh
Sulfate	SM4500 SO ₄ -D	360			mg/L	10	50	08/07/07 15:27	ear
TDS (calculated)	Calculation	742			mg/L	10	50	08/20/07 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						08/20/07 0:00	calc

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	Analyte was analyzed for but not detected at the indicated MDL

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.

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Alkalinity as CaCO3

SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229218													
WG229218PBW1	PBW	07/27/07 15:42				U	mg/L		-20	20			
WG229218LCSW2	LCSW	07/27/07 15:54	WC070723-9	820		823.5	mg/L	100.4	90	110			
WG229218PBW2	PBW	07/27/07 18:40				U	mg/L		-20	20			
WG229218LCSW5	LCSW	07/27/07 18:52	WC070723-9	820		825.6	mg/L	100.7	90	110			
L64070-06DUP	DUP	07/27/07 21:34			136	135.7	mg/L				0.2	20	
WG229218PBW3	PBW	07/27/07 21:40				U	mg/L		-20	20			
WG229218LCSW8	LCSW	07/27/07 21:52	WC070723-9	820		823.7	mg/L	100.5	90	110			
L64073-01DUP	DUP	07/27/07 23:06			604	604.4	mg/L				0.1	20	
WG229218PBW4	PBW	07/28/07 1:24				U	mg/L		-20	20			
WG229218LCSW11	LCSW	07/28/07 1:36	WC070723-9	820		833.7	mg/L	101.7	90	110			
WG229218LCSW14	LCSW	07/28/07 4:45	WC070723-9	820		822.9	mg/L	100.4	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		2.032	mg/L	101.6	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.09	0.09			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	1		1.027	mg/L	102.7	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	1	.04	1.185	mg/L	114.5	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	1	.04	1.18	mg/L	114	85	115	0.42	20	
WG229791													
WG229791ICV	ICV	08/07/07 23:45	II070725-7	2		2.048	mg/L	102.4	95	105			
WG229791ICB	ICB	08/07/07 23:49				U	mg/L		-0.09	0.09			
WG229791LFB	LFB	08/08/07 0:06	II070802-2	1		1.012	mg/L	101.2	85	115			
L64058-04AS	AS	08/08/07 0:31	II070802-2	1	U	1.019	mg/L	101.9	85	115			
L64058-04ASD	ASD	08/08/07 0:44	II070802-2	1	U	1.03	mg/L	103	85	115	1.07	20	
L64070-07AS	AS	08/08/07 1:13	II070802-2	1	U	1.026	mg/L	102.6	85	115			
L64070-07ASD	ASD	08/08/07 1:17	II070802-2	1	U	1.033	mg/L	103.3	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
WG229331													
WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.02		.01865	mg/L	93.3	90	110			
WG229331ICB	ICB	07/31/07 4:53				U	mg/L		-0.0012	0.0012			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.01		.00982	mg/L	98.2	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.01	.0017	.01088	mg/L	91.8	70	130			
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.01	.0017	.01123	mg/L	95.3	70	130	3.17	20	
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.02	U	.02	mg/L	100	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.02	U	.02088	mg/L	104.4	70	130	4.31	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64070**

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229152													
WG229152ICV	ICV	07/27/07 0:53	MS070607-2	.05		.05105	mg/L	102.1	90	110			
WG229152ICB	ICB	07/27/07 0:59				U	mg/L		-0.0015	0.0015			
WG229152LFB	LFB	07/27/07 1:05	MS070712-3	.05		.05325	mg/L	106.5	85	115			
L64058-01AS	AS	07/27/07 1:16	MS070712-3	.05	.0208	.07615	mg/L	110.7	70	130			
L64058-01ASD	ASD	07/27/07 1:22	MS070712-3	.05	.0208	.07614	mg/L	110.7	70	130	0.01	20	
L64070-05AS	AS	07/27/07 2:35	MS070712-3	.05	.0031	.05772	mg/L	109.2	70	130			
L64070-05ASD	ASD	07/27/07 2:41	MS070712-3	.05	.0031	.05636	mg/L	106.5	70	130	2.38	20	

WG229331

WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.05		.05197	mg/L	103.9	90	110			
WG229331ICB	ICB	07/31/07 4:53				U	mg/L		-0.0015	0.0015			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.05		.05002	mg/L	100	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.05	.0185	.07231	mg/L	107.6	70	130			
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.05	.0185	.07324	mg/L	109.5	70	130	1.28	20	
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.1	.003	.1009	mg/L	97.9	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.1	.003	.1038	mg/L	100.8	70	130	2.83	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229790													
WG229790ICV	ICV	08/07/07 20:49	II070725-7	2		2.1081	mg/L	105.4	95	105			
WG229790ICB	ICB	08/07/07 20:54				U	mg/L		-0.009	0.009			
WG229790LFB	LFB	08/07/07 21:11	II070802-2	.5		.5397	mg/L	107.9	85	115			
L64047-02AS	AS	08/07/07 22:19	II070802-2	.5	.005	.5362	mg/L	106.2	85	115			
L64047-02ASD	ASD	08/07/07 22:23	II070802-2	.5	.005	.5485	mg/L	108.7	85	115	2.27	20	
WG229965													
WG229965ICV	ICV	08/10/07 9:24	II070725-7	2		2.0514	mg/L	102.6	95	105			
WG229965ICB	ICB	08/10/07 9:28				U	mg/L		-0.009	0.009			
WG229965LFB	LFB	08/10/07 9:40	II070806-9	.5		.4995	mg/L	99.9	85	115			
L64047-02AS	AS	08/10/07 10:33	II070806-9	.5	.006	.5	mg/L	98.8	85	115			
L64047-02ASD	ASD	08/10/07 10:37	II070806-9	.5	.006	.5039	mg/L	99.6	85	115	0.78	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64070**

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229152													
WG229152ICV	ICV	07/27/07 0:53	MS070607-2	.05		.04814	mg/L	96.3	90	110			
WG229152ICB	ICB	07/27/07 0:59				U	mg/L		-0.0003	0.0003			
WG229152LFB	LFB	07/27/07 1:05	MS070712-3	.05		.04864	mg/L	97.3	85	115			
L64058-01AS	AS	07/27/07 1:16	MS070712-3	.05	.0007	.05005	mg/L	98.7	70	130			
L64058-01ASD	ASD	07/27/07 1:22	MS070712-3	.05	.0007	.05101	mg/L	100.6	70	130	1.9	20	
L64070-05AS	AS	07/27/07 2:35	MS070712-3	.05	U	.0445	mg/L	89	70	130			
L64070-05ASD	ASD	07/27/07 2:41	MS070712-3	.05	U	.04431	mg/L	88.6	70	130	0.43	20	

WG229331

WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.05		.04855	mg/L	97.1	90	110			
WG229331ICB	ICB	07/31/07 4:53				U	mg/L		-0.0003	0.0003			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.05		.04783	mg/L	95.7	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.05	.0005	.03975	mg/L	78.5	70	130			
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.05	.0005	.04087	mg/L	80.7	70	130	2.78	20	
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.1	U	.09296	mg/L	93	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.1	U	.09274	mg/L	92.7	70	130	0.24	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229331													
WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.05		.05135	mg/L	102.7	90	110			
WG229331ICB	ICB	07/31/07 4:53				U	mg/L		-0.0003	0.0003			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.05		.04962	mg/L	99.2	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.05	U	.04538	mg/L	90.8	70	130			
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.05	U	.04614	mg/L	92.3	70	130	1.66	20	
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.1	U	.0954	mg/L	95.4	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.1	U	.09558	mg/L	95.6	70	130	0.19	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	100		100.65	mg/L	100.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.6	0.6			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	67.97008		72.64	mg/L	106.9	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	67.97008	196	263.61	mg/L	99.5	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	67.97008	196	268.23	mg/L	106.3	85	115	1.74	20	
WG229642													
WG229642ICV	ICV	08/06/07 22:59	II070725-7	100		101.22	mg/L	101.2	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.6	0.6			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	67.97008		76.03	mg/L	111.9	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	67.97008	86.6	155.72	mg/L	101.7	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	67.97008	86.6	154.87	mg/L	100.4	85	115	0.55	20	
L64070-07AS	AS	08/07/07 0:18	II070802-2	67.97008	161	223.63	mg/L	92.1	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	67.97008	161	221.91	mg/L	89.6	85	115	0.77	20	

Phelps Dodge Sierrita
Project ID: OJ03DL

ACZ Project ID: **L64070**

Chloride 325.2 / SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229362													
WG229362ICB	ICB	07/31/07 10:23				U	mg/L		-3	3			
WG229362ICV	ICV	07/31/07 10:23	WI070314-1	55		56.9	mg/L	103.5	90	110			
WG229362LFB1	LFB	07/31/07 10:51	WI070712-1	30		31.6	mg/L	105.3	90	110			
L64060-09AS	AS	07/31/07 11:07	WI070712-1	30	4	35.3	mg/L	104.3	90	110			
L64063-01DUP	DUP	07/31/07 11:08			U	U	mg/L				0	20	RA
WG229362LFB2	LFB	07/31/07 11:18	WI070712-1	30		31.7	mg/L	105.7	90	110			
L64070-07AS	AS	07/31/07 11:30	10XCL	30	76	101	mg/L	83.3	90	110			M2
L64072-01DUP	DUP	07/31/07 11:32			330	324	mg/L				1.8	20	

Chromium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.994	mg/L	99.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.513	mg/L	102.6	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	.5	U	.581	mg/L	116.2	85	115			MA
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	.5	U	.56	mg/L	112	85	115	3.68	20	
WG229642													
WG229642ICV	ICV	08/06/07 22:59	II070725-7	2		2.011	mg/L	100.6	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.03	0.03			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	.5		.543	mg/L	108.6	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	.5	U	.562	mg/L	112.4	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	.5	U	.586	mg/L	117.2	85	115	4.18	20	MA
L64070-07AS	AS	08/07/07 0:18	II070802-2	.5	U	.545	mg/L	109	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	.5	U	.56	mg/L	112	85	115	2.71	20	

Cobalt, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.947	mg/L	97.4	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.49	mg/L	98	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	.5	U	.548	mg/L	109.6	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	.5	U	.541	mg/L	108.2	85	115	1.29	20	
WG229642													
WG229642ICV	ICV	08/06/07 22:59	II070725-7	2		1.962	mg/L	98.1	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.03	0.03			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	.5		.506	mg/L	101.2	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	.5	U	.536	mg/L	107.2	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	.5	U	.57	mg/L	114	85	115	6.15	20	
L64070-07AS	AS	08/07/07 0:18	II070802-2	.5	U	.519	mg/L	103.8	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	.5	U	.539	mg/L	107.8	85	115	3.78	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Conductivity @25C

120.1 / SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229218													
WG229218LCSW1	LCSW	07/27/07 15:43	PCN27303	1408.8		1489	µmhos/crr	105.7	90	110			
WG229218LCSW4	LCSW	07/27/07 18:42	PCN27303	1408.8		1488	µmhos/crr	105.6	90	110			
L64070-06DUP	DUP	07/27/07 21:34			3160	3190	µmhos/crr				0.9	20	
WG229218LCSW7	LCSW	07/27/07 21:42	PCN27303	1408.8		1476	µmhos/crr	104.8	90	110			
L64073-01DUP	DUP	07/27/07 23:06			1140	1130	µmhos/crr				0.9	20	
WG229218LCSW10	LCSW	07/28/07 1:25	PCN27303	1408.8		1467	µmhos/crr	104.1	90	110			
WG229218LCSW13	LCSW	07/28/07 4:34	PCN27303	1408.8		1464	µmhos/crr	103.9	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.956	mg/L	97.8	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.498	mg/L	99.6	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	.5	U	.552	mg/L	110.4	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	.5	U	.526	mg/L	105.2	85	115	4.82	20	

WG229642

WG229642ICV	ICV	08/06/07 22:59	II070725-7	2		1.949	mg/L	97.5	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.03	0.03			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	.5		.517	mg/L	103.4	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	.5	U	.541	mg/L	108.2	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	.5	U	.569	mg/L	113.8	85	115	5.05	20	
L64070-07AS	AS	08/07/07 0:18	II070802-2	.5	U	.531	mg/L	106.2	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	.5	U	.552	mg/L	110.4	85	115	3.88	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229757													
WG229757ICV	ICV	08/07/07 10:14	WI070730-6	.3		.304	mg/L	101.3	90	110			
WG229757ICB	ICB	08/07/07 10:15				U	mg/L		-0.015	0.015			
WG229700LRB	LRB	08/07/07 10:16				U	mg/L		-0.015	0.015			
WG229700LFB	LFB	08/07/07 10:17	WI070730-2	.2		.2111	mg/L	105.6	90	110			
L64068-01DUP	DUP	08/07/07 10:18			.174	.1707	mg/L				1.9	20	
L64068-02LFM	LFM	08/07/07 10:20	WI070730-2	.2	.201	.4154	mg/L	107.2	90	110			
L64070-08DUP	DUP	08/07/07 10:31			U	U	mg/L				0	20	RA
L64097-01LFM	LFM	08/07/07 10:33	WI070730-2	.2	.006	.1447	mg/L	69.4	90	110			M2

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229593													
WG229593ICV	ICV	08/03/07 12:46	WC070802-2	2		2.16	mg/L	108	90	110			
WG229593ICB	ICB	08/03/07 12:53				U	mg/L		-0.3	0.3			
WG229593LFB1-1	LFB	08/03/07 13:05	WC070730-1	5		5.14	mg/L	102.8	90	110			
L64070-02AS	AS	08/03/07 13:15	WC070730-1	5	U	7.16	mg/L	143.2	90	110			M1
L64070-02DUP	DUP	08/03/07 13:22			U	U	mg/L				0	20	RA
WG229593LFB2	LFB	08/03/07 14:59	WC070730-1	5		5.05	mg/L	101	90	110			
WG229837													
WG229837ICV	ICV	08/08/07 9:44	WC070802-2	2		2.1	mg/L	105	90	110			
WG229837ICB	ICB	08/08/07 9:51				U	mg/L		-0.3	0.3			
WG229837LFB1	LFB	08/08/07 10:00	WC070730-1	5		5.33	mg/L	106.6	90	110			
L64058-06AS	AS	08/08/07 11:04	WC070730-1	5	2	7.79	mg/L	115.8	90	110			M1
L64058-06DUP	DUP	08/08/07 11:11			2	2.03	mg/L				1.5	20	
WG229837LFB2	LFB	08/08/07 12:07	WC070730-1	5		5.26	mg/L	105.2	90	110			

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.94	mg/L	97	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.06	0.06			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	1		1	mg/L	100	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	1	U	1.122	mg/L	112.2	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	1	U	1.09	mg/L	109	85	115	2.89	20	
WG229642													
WG229642ICV	ICV	08/06/07 22:59	II070725-7	2		1.962	mg/L	98.1	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.06	0.06			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	1		1.097	mg/L	109.7	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	1	U	1.093	mg/L	109.3	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	1	U	1.164	mg/L	116.4	85	115	6.29	20	MA
L64070-07AS	AS	08/07/07 0:18	II070802-2	1	U	1.047	mg/L	104.7	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	1	U	1.087	mg/L	108.7	85	115	3.75	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229331													
WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.05		.05205	mg/L	104.1	90	110			
WG229331ICB	ICB	07/31/07 4:53				U	mg/L		-0.0003	0.0003			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.05		.05003	mg/L	100.1	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.05	U	.04953	mg/L	99.1	70	130			
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.05	U	.05015	mg/L	100.3	70	130	1.24	20	
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.1	.0078	.11068	mg/L	102.9	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.1	.0078	.11262	mg/L	104.8	70	130	1.74	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	100		100.69	mg/L	100.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.6	0.6			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	54.96908		57.29	mg/L	104.2	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	54.96908	124	182.42	mg/L	106.3	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	54.96908	124	187.75	mg/L	116	85	115	2.88	20	MA

WG229642

WG229642ICV	ICV	08/06/07 22:59	II070725-7	100		100.87	mg/L	100.9	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.6	0.6			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	54.96908		60.17	mg/L	109.5	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	54.96908	15	74.7	mg/L	108.6	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	54.96908	15	74.7	mg/L	108.6	85	115	0	20	
L64070-07AS	AS	08/07/07 0:18	II070802-2	54.96908	43.6	100.63	mg/L	103.7	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	54.96908	43.6	99.49	mg/L	101.7	85	115	1.14	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.9541	mg/L	97.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.015	0.015			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.5362	mg/L	107.2	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	.5	U	.5975	mg/L	119.5	85	115			M1
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	.5	U	.581	mg/L	116.2	85	115	2.8	20	M1

WG229642

WG229642ICV	ICV	08/06/07 22:59	II070725-7	2		1.9653	mg/L	98.3	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.015	0.015			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	.5		.575	mg/L	115	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	.5	.056	.6545	mg/L	119.7	85	115			M1
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	.5	.056	.6752	mg/L	123.8	85	115	3.11	20	M1
L64070-07AS	AS	08/07/07 0:18	II070802-2	.5	.005	.5792	mg/L	114.8	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	.5	.005	.5976	mg/L	118.5	85	115	3.13	20	MA

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229859													
WG229859ICV	ICV	08/08/07 17:13	II070803-1	.00498		.00498	mg/L	100	95	105			
WG229859ICB	ICB	08/08/07 17:15				U	mg/L		-0.0002	0.0002			
WG229859LRB	LRB	08/08/07 17:24				U	mg/L		-0.00044	0.00044			
WG229859LFB	LFB	08/08/07 17:27	II070801-2	.002		.00204	mg/L	102	85	115			
L64070-01LFM	LFM	08/08/07 18:04	II070801-2	.002	U	.00208	mg/L	104	85	115			
L64070-01LFMD	LFMD	08/08/07 18:06	II070801-2	.002	U	.0021	mg/L	105	85	115	0.96	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229790													
WG229790ICV	ICV	08/07/07 20:49	II070725-7	2		1.996	mg/L	99.8	95	105			
WG229790ICB	ICB	08/07/07 20:54				U	mg/L		-0.03	0.03			
WG229790LFB	LFB	08/07/07 21:11	II070802-2	.5		.499	mg/L	99.8	85	115			
L64047-02AS	AS	08/07/07 22:19	II070802-2	.5	U	.509	mg/L	101.8	85	115			
L64047-02ASD	ASD	08/07/07 22:23	II070802-2	.5	U	.508	mg/L	101.6	85	115	0.2	20	

WG229791

WG229791ICV	ICV	08/07/07 23:45	II070725-7	2		1.997	mg/L	99.9	95	105			
WG229791ICB	ICB	08/07/07 23:49				U	mg/L		-0.03	0.03			
WG229791LFB	LFB	08/08/07 0:06	II070802-2	.5		.488	mg/L	97.6	85	115			
L64058-04AS	AS	08/08/07 0:31	II070802-2	.5	U	.481	mg/L	96.2	85	115			
L64058-04ASD	ASD	08/08/07 0:44	II070802-2	.5	U	.489	mg/L	97.8	85	115	1.65	20	
L64070-07AS	AS	08/08/07 1:13	II070802-2	.5	.02	.504	mg/L	96.8	85	115			
L64070-07ASD	ASD	08/08/07 1:17	II070802-2	.5	.02	.512	mg/L	98.4	85	115	1.57	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229790													
WG229790ICV	ICV	08/07/07 20:49	II070725-7	2		1.938	mg/L	96.9	95	105			
WG229790ICB	ICB	08/07/07 20:54				U	mg/L		-0.03	0.03			
WG229790LFB	LFB	08/07/07 21:11	II070802-2	.5		.519	mg/L	103.8	85	115			
L64047-02AS	AS	08/07/07 22:19	II070802-2	.5	.02	.511	mg/L	98.2	85	115			
L64047-02ASD	ASD	08/07/07 22:23	II070802-2	.5	.02	.523	mg/L	100.6	85	115	2.32	20	

WG229867

WG229867ICV	ICV	08/08/07 17:48	II070725-7	2		1.93	mg/L	96.5	95	105			
WG229867ICB	ICB	08/08/07 17:52				U	mg/L		-0.03	0.03			
WG229867LFB	LFB	08/08/07 18:09	II070806-9	.5		.548	mg/L	109.6	85	115			
L64070-07AS	AS	08/08/07 19:53	II070806-9	.5	U	.515	mg/L	103	85	115			
L64070-07ASD	ASD	08/08/07 19:58	II070806-9	.5	U	.516	mg/L	103.2	85	115	0.19	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Nitrate/Nitrite as N

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229667													
WG229667ICV	ICV	08/04/07 14:56	WI070609-1	2.416		2.492	mg/L	103.1	90	110			
WG229667ICB	ICB	08/04/07 14:57				U	mg/L		-0.06	0.06			
WG229667LFB1	LFB	08/04/07 15:01	WI070307-9	2		2.107	mg/L	105.4	90	110			
L64027-04DUP	DUP	08/04/07 15:24			1.87	1.887	mg/L				0.9	20	
WG229667LFB2	LFB	08/04/07 15:39	WI070307-9	2		2.165	mg/L	108.3	90	110			
L64070-06DUP	DUP	08/04/07 15:48			2.75	2.742	mg/L				0.3	20	
L64027-03AS	AS	08/04/07 16:06	WI070307-9	4	2.07	6.347	mg/L	106.9	90	110			
L64070-05AS	AS	08/04/07 16:09	WI070307-9	6	3.69	9.498	mg/L	96.8	90	110			

WG229671

WG229671ICV	ICV	08/04/07 16:38	WI070609-1	2.416		2.467	mg/L	102.1	90	110			
WG229671ICB	ICB	08/04/07 16:39				U	mg/L		-0.06	0.06			
WG229671LFB1	LFB	08/04/07 16:41	WI070307-9	2		2.084	mg/L	104.2	90	110			
L63951-01AS	AS	08/04/07 16:43	WI070307-9	2	.07	2.324	mg/L	112.7	90	110			M1
L63951-02DUP	DUP	08/04/07 16:45			.14	.145	mg/L				3.5	20	RA
L64070-02AS	AS	08/04/07 17:01	WI070307-9	2	.04	2.059	mg/L	101	90	110			
L64070-03DUP	DUP	08/04/07 17:04			1.76	1.733	mg/L				1.5	20	
WG229671LFB2	LFB	08/04/07 17:18	WI070307-9	2		2.077	mg/L	103.9	90	110			

pH (lab)

M150.1 - Electrometric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229218													
WG229218LCSW3	LCSW	07/27/07 15:57	PCN26677	6		6.03	units	100.5	90	110			
WG229218LCSW6	LCSW	07/27/07 18:55	PCN26677	6		6.03	units	100.5	90	110			
L64070-06DUP	DUP	07/27/07 21:34			7.8	7.77	units				0.4	20	
WG229218LCSW9	LCSW	07/27/07 21:55	PCN26677	6		6.03	units	100.5	90	110			
L64073-01DUP	DUP	07/27/07 23:06			8.6	8.57	units				0.3	20	
WG229218LCSW12	LCSW	07/28/07 1:39	PCN26677	6		6.02	units	100.3	90	110			
WG229218LCSW15	LCSW	07/28/07 4:48	PCN26677	6		6.02	units	100.3	90	110			

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229642													
WG229642ICV	ICV	08/06/07 22:59	II070725-7	20		20.25	mg/L	101.3	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.9	0.9			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	99.76186		108.36	mg/L	108.6	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	99.76186	4.6	115.96	mg/L	111.6	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	99.76186	4.6	115.59	mg/L	111.3	85	115	0.32	20	
L64070-07AS	AS	08/07/07 0:18	II070802-2	99.76186	4.1	117.31	mg/L	113.5	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	99.76186	4.1	116.2	mg/L	112.4	85	115	0.95	20	

WG229790

WG229790ICV	ICV	08/07/07 20:49	II070725-7	20		20.74	mg/L	103.7	95	105			
WG229790ICB	ICB	08/07/07 20:54				U	mg/L		-0.9	0.9			
WG229790LFB	LFB	08/07/07 21:11	II070802-2	99.76186		105.14	mg/L	105.4	85	115			
L64047-02AS	AS	08/07/07 22:19	II070802-2	99.76186	2.6	113.31	mg/L	111	85	115			
L64047-02ASD	ASD	08/07/07 22:23	II070802-2	99.76186	2.6	112.01	mg/L	109.7	85	115	1.15	20	

Phelps Dodge Sierrita
 Project ID: OJ03DL

ACZ Project ID: **L64070**

Residue, Filterable (TDS) @180C 160.1 / SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229298													
WG229298PBW	PBW	07/30/07 13:45				U	mg/L		-20	20			
WG229298LCSW	LCSW	07/30/07 13:46	PCN27689	260		264	mg/L	101.5	80	120			
L64094-04DUP	DUP	07/30/07 14:00			490	492	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
WG229152													
WG229152ICV	ICV	07/27/07 0:53	MS070607-2	.05		.05095	mg/L	101.9	90	110			
WG229152ICB	ICB	07/27/07 0:59				.00029	mg/L		-0.0003	0.0003			
WG229152LFB	LFB	07/27/07 1:05	MS070712-3	.05		.05239	mg/L	104.8	85	115			
L64058-01AS	AS	07/27/07 1:16	MS070712-3	.05	.0012	.08191	mg/L	161.4	70	130			M1
L64058-01ASD	ASD	07/27/07 1:22	MS070712-3	.05	.0012	.08011	mg/L	157.8	70	130	2.22	20	M1

WG229331

WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.05		.05333	mg/L	106.7	90	110			
WG229331ICB	ICB	07/31/07 4:53				U	mg/L		-0.0003	0.0003			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.05		.05161	mg/L	103.2	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.05	.0004	.07039	mg/L	140	70	130			M1
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.05	.0004	.0717	mg/L	142.6	70	130	1.84	20	M1
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.1	.001	.10798	mg/L	107	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.1	.001	.10414	mg/L	103.1	70	130	3.62	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	100		101.37	mg/L	101.4	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.9	0.9			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	98.21624		101.32	mg/L	103.2	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	98.21624	170	265.4	mg/L	97.1	85	115			
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	98.21624	170	263.81	mg/L	95.5	85	115	0.6	20	

WG229642

WG229642ICV	ICV	08/06/07 22:59	II070725-7	100		100.92	mg/L	100.9	95	105			
WG229642ICV	ICV	08/06/07 22:59	II070725-7	100		99.4	mg/L	99.4	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.9	0.9			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-6	6			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	98.21624		105.4	mg/L	107.3	85	115			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	98.21624		106.99	mg/L	108.9	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	98.21624	9.4	116.8	mg/L	105.7	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	98.21624	9.4	116.01	mg/L	104.9	85	115			
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	98.21624	9.4	116.4	mg/L	105.3	85	115	0.34	20	
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	98.21624	9.4	115.44	mg/L	104.3	85	115	0.34	20	
L64070-07AS	AS	08/07/07 0:18	II070802-2	98.21624	42	138.8	mg/L	98.6	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	98.21624	42	137.99	mg/L	97.7	85	115	0.07	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

Project ID: OJ03DL

Sulfate

SM4500 SO4-D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229780													
WG229780PBW	PBW	08/07/07 13:00				U	mg/L		-30	30			
WG229780LCSW	LCSW	08/07/07 13:03	WC070705-2	100		95	mg/L	95	80	120			
L64070-01DUP	DUP	08/07/07 14:30			U	U	mg/L				0	20	RA
WG229797													
WG229797PBW	PBW	08/07/07 15:00				U	mg/L		-30	30			
WG229797LCSW	LCSW	08/07/07 15:03	WC070705-2	100		95	mg/L	95	80	120			
L64072-04DUP	DUP	08/07/07 15:47			2720	2848	mg/L				4.6	20	
WG230258													
WG230258PBW	PBW	08/14/07 10:00				U	mg/L		-30	30			
WG230258LCSW	LCSW	08/14/07 10:02	WC070705-2	100		100	mg/L	100	80	120			
L64154-01DUP	DUP	08/14/07 10:31			290	294	mg/L				1.4	20	

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229331													
WG229331ICV	ICV	07/31/07 4:47	MS070607-2	.05		.05391	mg/L	107.8	90	110			
WG229331ICB	ICB	07/31/07 4:53				.00011	mg/L		-0.0003	0.0003			
WG229331LFB	LFB	07/31/07 4:59	MS070712-3	.05		.05108	mg/L	102.2	85	115			
L64058-01AS	AS	07/31/07 5:10	MS070712-3	.05	.0005	.0512	mg/L	101.4	70	130			
L64058-01ASD	ASD	07/31/07 5:15	MS070712-3	.05	.0005	.05211	mg/L	103.2	70	130	1.76	20	
L64070-05AS	AS	07/31/07 6:29	MS070712-3	.1	U	.10648	mg/L	106.5	70	130			
L64070-05ASD	ASD	07/31/07 6:35	MS070712-3	.1	U	.1082	mg/L	108.2	70	130	1.6	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG229704													
WG229704ICV	ICV	08/06/07 14:13	II070725-7	2		1.974	mg/L	98.7	95	105			
WG229704ICB	ICB	08/06/07 14:17				U	mg/L		-0.03	0.03			
WG229704LFB	LFB	08/06/07 14:29	II070802-2	.5		.565	mg/L	113	85	115			
L64036-03AS	AS	08/06/07 15:22	II070802-2	.5	U	.6	mg/L	120	85	115			M1
L64036-03ASD	ASD	08/06/07 15:25	II070802-2	.5	U	.603	mg/L	120.6	85	115	0.5	20	M1
WG229642													
WG229642ICV	ICV	08/06/07 22:59	II070725-7	2		1.959	mg/L	98	95	105			
WG229642ICB	ICB	08/06/07 23:03				U	mg/L		-0.03	0.03			
WG229642LFB	LFB	08/06/07 23:17	II070802-2	.5		.556	mg/L	111.2	85	115			
L64046-01AS	AS	08/06/07 23:32	II070802-2	.5	U	.584	mg/L	116.8	85	115			M1
L64046-01ASD	ASD	08/06/07 23:36	II070802-2	.5	U	.592	mg/L	118.4	85	115	1.36	20	M1
L64070-07AS	AS	08/07/07 0:18	II070802-2	.5	.01	.584	mg/L	114.8	85	115			
L64070-07ASD	ASD	08/07/07 0:21	II070802-2	.5	.01	.586	mg/L	115.2	85	115	0.34	20	

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64070-01	WG229704	Chromium, 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.
		Magnesium, 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.
		Manganese, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229152	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [$< \text{MDL}$].
	WG229704	Zinc, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229362	Chloride	325.2 / SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ($< 10\text{x MDL}$).
	WG229757	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG229837	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229671	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			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 ($< 10\text{x MDL}$).
	WG229780	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 ($< 10\text{x MDL}$).
L64070-02	WG229704	Chromium, 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.
		Magnesium, 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.
		Manganese, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229152	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [$< \text{MDL}$].
	WG229704	Zinc, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229362	Chloride	325.2 / SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation ($< 10\text{x MDL}$).
	WG229757	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
	WG229593	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery 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 ($< 10\text{x MDL}$).

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64070-03	WG229704	Chromium, 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.
		Magnesium, 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.
		Manganese, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229331	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229704	Zinc, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229362	Chloride	325.2 / SM4500Cl-E	M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
				M3	The accuracy of the spike recovery does not apply because analyte concentration in the sample is disproportionate to the spike level. The recovery of the method control sample was acceptable.
	WG229593	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery 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).
L64070-04	WG229704	Chromium, 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.
		Magnesium, 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.
		Manganese, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229331	Selenium, dissolved	M200.8 ICP-MS	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229704	Zinc, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229362	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
				M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229593	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery 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).
L64070-05	WG229642	Chromium, 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.
		Iron, 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.
		Manganese, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
		Zinc, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229362	Chloride	325.2 / SM4500Cl-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229593	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery 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).

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L64070-06	WG229642	Chromium, 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.
		Iron, 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.
		Manganese, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
		Zinc, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
	WG229362	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229593	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery 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).
L64070-07	WG229642	Manganese, 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.
	WG229362	Chloride	325.2 / SM4500CI-E	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
	WG229593	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the method control sample recovery 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).
L64070-08	WG229757	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the method control sample recovery was acceptable.
			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).

Phelps Dodge Sierrita

ACZ Project ID: **L64070**

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Volatile Organics by GC/MS

M8260B GC/MS

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64070
Date Received: 7/26/2007
Received By:
Date Printed: 7/26/2007

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

The trip blank contained headspace.

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

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
ns4043		2.2	15

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

Notes

Phelps Dodge Sierrita
OJ03DL

ACZ Project ID: L64070
 Date Received: 7/26/2007
 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
L64070-01	TB072307A		Y		Y							☐
L64070-02	EQB072307A		Y		Y							☐
L64070-03	DUP072407A		Y		Y							☐
L64070-04	ESP-4		Y		Y							☐
L64070-05	IW-20		Y		Y							☐
L64070-06	IW-21		Y		Y							☐
L64070-07	PZ-7		Y		Y							☐
L64070-08	TB061307-21									X		☐
L64070-09	TB061307-10									X		☐

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: _____

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Billy Dorris
Company: Phelps Dodge 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: Jim Norris
Company: Hydro Geo Chem

E-mail: jimn@hginc.com
Telephone: 520-293-1500 EXT 112

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 #: OJ03DL
Reporting state for compliance testing:
Sampler's Name:
Are any samples NRC licensable material?

of Containers

SAMPLE IDENTIFICATION DATE:TIME Matrix

<u>TB072307A</u>	<u>7-23-07/ 9:00</u>	<u>GW</u>	<u>8</u>
<u>EQB072307A</u>	<u>7-23-07/ 9:02</u>	<u>GW</u>	<u>8</u>
<u>DUP072407A</u>	<u>7-24-07</u>	<u>GW</u>	<u>8</u>
<u>ESP-4</u>	<u>7-24-07/ 12:42</u>	<u>GW</u>	<u>8</u>
<u>IW-20</u>	<u>7-24-07/ 11:50</u>	<u>GW</u>	<u>8</u>
<u>IW-21</u>	<u>7-24-07/ 11:35</u>	<u>GW</u>	<u>8</u>
<u>PZ-7</u>	<u>7-24-07/ 11:05</u>	<u>GW</u>	<u>8</u>

Ambient Suite

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

REMARKS

UPS Tracking # 1Z 867 7E4 21 1000 0484

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

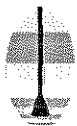
7-25-07/ 14:45

JMC 7-26-07

9:20

APPENDIX C

HYDRO GEO CHEM, INC. GROUNDWATER SAMPLING FORMS



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-624010 ✓

Well Name: C-4 FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18 / 2007

Recorder/Sampler: HA/JS

WELL INFORMATION

Total Well Depth ("a", ft): _____

No Purge Required

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): Last WL on Jan/07 = 190.00

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
9:54		27.7	567	7.61				
9:56		26.1	571	7.62				
9:58		26.0	573	7.64				
10:00		25.7	577	7.65				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 10:05am Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-624010-_____	<u>1005</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-624010-_____	<u>1005</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW- 586729

Well Name: Canoa Ranch

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 08/23/2007

Recorder/Sampler: M. Arneson

WELL INFORMATION

Total Well Depth ("a", ft): 500

No Purge Req'd

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 148.83 (8-6-07)

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1035	1100	25.6	596	7.00				
1038		24.9	606	7.03				
1040		24.7	602	7.05				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1040 Time Completed: 1042

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-586729	1040	PLASTIC	125 mL/250 ml	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-586729	1040	PLASTIC	250 ml	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-501760

Well Name: CC OF GV

Project Name/Number: SIERRITA GW MONITORING (78306.2) Date: July 9 / 9 / 2007

Recorder/Sampler: Mark Amason

Johanna
Santamaría

WELL INFORMATION

Total Well Depth ("a", ft): 855

Casing Diameter ("d", in.): 16"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): [WL on 4/16/07 = 254.20] 259.79

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 6217 Gallons, (3 Casing Volumes) 18650 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 10:46 Time Completed: 11:15 Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>10:55</u>	<u>400</u>	<u>25.6</u>	<u>762</u>	<u>7.53</u>				
<u>11:00</u>		<u>24.4</u>	<u>727</u>	<u>7.58</u>				
<u>11:05</u>		<u>24.6</u>	<u>706</u>	<u>7.6</u>				
<u>11:09</u>		<u>24.3</u>	<u>686</u>	<u>7.57</u>				
<u>11:14</u>		<u>24.5</u>	<u>658</u>	<u>7.58</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

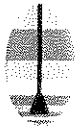
Time Started: 11:15 Time Completed: 11:16

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
<u>UGW-501760-_____</u>		<u>PLASTIC</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>
<u>FGW-501760-_____</u>		<u>PLASTIC</u>	<u>125/250</u>	<u>2</u>	<u>200.7/300.1</u>	<u>HNO3/NONE</u>	<u>FILTERED</u>

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-627483

Well Name: CW-3

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 08 / 10 /2007

Recorder/Sampler: _____

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 267.4

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1357 Time Completed: _____ Total Purge Time: 137 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: 6,165 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1358		26.8	432	7.22				Clear
1500		27.4	446	7.30				Clear
1545		26.4	444	7.40				Clear
1600		26.0	413	7.35				Clear
1612		25.9	444	7.40				Clear
1615								Sample collected

SAMPLING INFORMATION AND SAMPLE RECORD

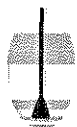
Time Started: _____ Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-CW-3	1615	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-CW-3	1615	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Call Home

Well No: GW-627485 ✓

Well Name: CW-6

Project Name/Number: SIERRITA GW MONITORING (78306.2) Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 840

Casing Diameter ("d", in.): 16 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 5/24/07=252.25] 252.15

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = 6142$ Gallons, (3 Casing Volumes) 18425 gal

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1249 Time Completed: 1345 Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1339</u>	<u>700</u>	<u>26.9</u>	<u>473</u>	<u>7.61</u>			<u>None</u>	<u>clear</u>
<u>1343</u>		<u>26.9</u>	<u>475</u>	<u>7.60</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1345 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-627485-_____	<u>1345</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-627485-_____	<u>1345</u>	PLASTIC	250/125	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time
<u>Field Dup 071007A</u>			



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-502546 ✓

Well Name: CW-7

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1065

Casing Diameter ("d", in.): 16 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 5/24/07=424.15] 426.50

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 6670 Gallons, (3 Casing Volumes 20007 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0838 Time Completed: 856 Total Purge Time: 18 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>642</u>	<u>1200</u>	<u>27.6</u>	<u>1925</u>	<u>7.03</u>			<u>None</u>	<u>clear</u>
<u>848</u>	<u>1200</u>	<u>27.4</u>	<u>1943</u>	<u>7.24</u>				
<u>853</u>	<u>1200</u>	<u>27.4</u>	<u>1944</u>	<u>7.33</u>				
<u>855</u>		<u>27.4</u>	<u>1945</u>	<u>7.32</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 0856 Time Completed: 0859

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-502546-_____	<u>0856</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-502546-_____	<u>0856</u>	PLASTIC	125/250	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-543600

Well Name: CW-8

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1200

Casing Diameter ("d", in.): 24

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): [Last WL on 5/24/07 = 338.14] NM

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = 20257$ Gallons, (3 Casing Volumes 60773 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1020

Time Completed: 1052

Total Purge Time: 32 min

Purge Method: Pump

Pump Setting (depth):

Total Purge Volume: gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1028	1900	30.4	1219	7.66			None	Clear
1035	11	30.1	1326	7.60				
1040	11	30.0	1362	7.65				
1045	11	29.0	1397	7.58				
1050	11	29.8	1401	7.63				
400								

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1052

Time Completed:

Sampling Method, Type of Sampling Pump or Bailer:

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-543600- <u> </u>	<u>1052</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-543600- <u> </u>	<u>1052</u>	PLASTIC	125/250	2	200.7300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-588121

Well Name: CW-9

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1000

Casing Diameter ("d", in.): 20

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): [Last WL on 5/24/07 = 309.40] 310.20

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 11260 Gallons, (3 Casing Volumes) 33782 gal

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1118

Time Completed: MA 1223

Total Purge Time: 65 min

Purge Method: _____

Pump Setting (depth): _____

Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1214	1000	24.2	410	7.67			None	clear
1219	"	22.6	414	7.64				
1221	"	22.6	414	7.68				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1223

Time Completed: 1227

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-588121-_____	1223	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-588121-_____	1223	PLASTIC	125/250	2	200.7/300.0	HNJ3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-207982 ✓

Well Name: CW-10

Project Name/Number: SIERRITA GW MONITORING (78306.2) Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1140

Casing Diameter ("d", in.): 16 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 5/24/07 = 196.30] 198.79

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0920 Time Completed: 1318 Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1310</u>	<u>2400</u>	<u>32.7</u>	<u>397</u>	<u>7.75</u>			<u>None</u>	<u>Clear</u>
<u>1313</u>		<u>31.5</u>	<u>402</u>	<u>7.81</u>				
<u>1316</u>		<u>31.3</u>	<u>403</u>	<u>7.82</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1318 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-207982-051407	<u>1318</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-207982-051407	<u>1318</u>	PLASTIC	125/250	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-608518-051407Well Name: CW-11Project Name/Number: SIERRITA GW MONITORING (78306.2)Date: 7 / 10 / 2007Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 2786Casing Diameter ("d", in.): 20Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NADepth to Water ("b", ft): [Last WL on 1/3/07 = 258.40] 278.50One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 40922 Gallons, (3 Casing Volumes) 22767 gal

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1000 Time Completed: 1145 Total Purge Time: _____ minPurge Method: Pump Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1137</u>	<u>2600</u>	<u>29.5</u>	<u>441</u>	<u>7.93</u>			<u>None</u>	<u>clear</u>
<u>1140</u>	<u>2600</u>	<u>28.6</u>	<u>450</u>	<u>7.95</u>				
<u>1143</u>		<u>28.6</u>	<u>449</u>	<u>7.93</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1145 Time Completed: 1149Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-608518-_____	<u>1145</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-608518-_____	<u>1145</u>	PLASTIC	125/250	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-624013 ✓

Well Name: E-6 FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 11/8/2007

Recorder/Sampler: HA/JS

WELL INFORMATION

No Purge Required

Total Well Depth ("a", ft): 801

Casing Diameter ("d", in.): 20

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): [Last WL on 2/21/07=186 ft]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
9:32		26.2	643	7.46				
9:35		24.8	642	7.48				
9:37		24.6	648	7.49				
9:39		24.1	651	7.48				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 9:40 am Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-624013-_____	<u>940</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-624013-_____	<u>940</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Doug and Barbara
Schilling

Well No: GW-599357

Well Name: EL TORO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 19 /2007

Recorder/Sampler: Mark A / Johanna

WELL INFORMATION

Total Well Depth (ft): 655

Casing Diameter ("d", in.): 5" Screened Interval (ft): From: To:

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Obstructed: ADWR EST=424]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ Gallons, (3 Casing Volumes gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 2:15 pm Time Completed: Total Purge Time: min

Purge Method: Pump Setting (depth): Total Purge Volume: gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
2:16	3	33.9	761	7.64				
2:19		31.8	757	7.46				
2:21		31.4	751	7.48				
2:23		31.3	749	7.48				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 2:25 pm Time Completed: 2:26

Sampling Method, Type of Sampling Pump or Bailer:

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-599357- <u> </u>		PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-599357- <u> </u>		PLASTIC	125 /250	2	300.1/200.7	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time

Note: water
was sampled
from a tank
#



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-623102 ✓

Well Name: ESP-1

Project Name/Number: SIERRITA GW MONITORING (78306.2) Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1020

Casing Diameter ("d", in.): 16 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 5/24/07 = 349.55] 351.11

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = 6988$ Gallons, (3 Casing Volumes 20963 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1430 Time Completed: 1505 Total Purge Time: 20 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1456</u>	<u>1050</u>	<u>31.4</u>	<u>556</u>	<u>7.63</u>			<u>None</u>	<u>Russy then clear</u>
<u>1500</u>		<u>29.5</u>	<u>578</u>	<u>7.69</u>				
<u>1505</u>		<u>28.8</u>	<u>584</u>	<u>7.66</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1505 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-623102-_____	<u>1505</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-623102-_____	<u>1505</u>	PLASTIC	125/250	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-623103 ✓

Well Name: ESP-2

Project Name/Number: SIERRITA GW MONITORING (78306.2) Date: 7/10/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1044

Casing Diameter ("d", in.): 16 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 5/14/07=339.90] 341.25

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 7343 Gallons, (3 Casing Volume) 22028 gal

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1450 Time Completed: 1530 Total Purge Time: 17 min 40 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1521	1300	28.9	376	7.77			None	Clear
1525	1	28.8	377	7.76				
1530	1	28.9	380	7.73				

SAMPLING INFORMATION AND SAMPLE RECORD

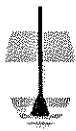
Time Started: 1530 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-623103-_____	1530	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-623103-_____	1530	PLASTIC	250	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-623104Well Name: ESP-3Project Name/Number: SIERRITA GW MONITORING (78306.2)Date: 7/10/2007Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 1043Casing Diameter ("d", in.): 16 Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 5/14/07=355.85] 358.05One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 7165 Gallons, (3 Casing Volumes 21464 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS 17 min

Time Started: 1550 Time Completed: 1610 Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1556</u>	<u>1300</u>	<u>30.5</u>	<u>377</u>	<u>7.74</u>				
<u>1600</u>	<u>1</u>	<u>29.1</u>	<u>378</u>	<u>7.91</u>				
<u>1607</u>	<u>1</u>	<u>29.2</u>	<u>378</u>	<u>7.84</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1610 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-623104-_____	<u>1610</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-623104-_____	<u>1610</u>	PLASTIC	125/250	2	200.7/300.0	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-640358 ✓

Well Name: Private [Giacalone]

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/16/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 350 ft

Casing Diameter ("d", in.): 6"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): Last WL on 1/12/07=235 ft (est.) NM

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 170 Gallons, (3 Casing Volumes 507 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1230 Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1237	10	31.0	384	7.51			None	Clear
1242	10	28.3	381	7.62				
1247	10	28.0	386	7.59				Slightly brown
1253	10	28.1	383	7.57				Clear
1300	10	28.2	382	7.61				Clear
1305	10	28.2	383	7.59				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1310 Time Completed: 1313

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-640358-_____	<u>1310</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-640358-_____	<u>1310</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-206214 ✓

Well Name: Private [Graef]

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/16/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): Last WL on 1/8/07=281.25 ft 284.60

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1145 Time Completed: 1210 Total Purge Time: _____ min

Purge Method: Drain Tank Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1149</u>	<u>6</u>	<u>31.0</u>	<u>414</u>	<u>7.23</u>			<u>None</u>	<u>Clear</u>
<u>1154</u>	<u>6</u>	<u>28.8</u>	<u>425</u>	<u>7.38</u>				
<u>1200</u>	<u>6</u>	<u>28.0</u>	<u>420</u>	<u>7.40</u>				
<u>1206</u>	<u>6</u>	<u>28.1</u>	<u>418</u>	<u>7.42</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1210 Time Completed: 1214

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-206214-_____	<u>1210</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-206214-_____	<u>1210</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-532595

Well Name: GORETCKI

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 8/20/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 296

Casing Diameter ("d", in.): 8"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 186 (2/07)

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = \underline{287}$ Gallons, (3 Casing Volumes 861 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0915 Time Completed: 1215 Total Purge Time: 180 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: 540 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
0915	3 gpm	26.9	466	7.13			None	Clear
0930	3	26.1	509	7.17				
1000	2	27.1	506	7.00				
1025	3	27.8	508	6.90				
1100	3	28.1	509	6.90				
1130	1.5-2.0	28.2	510	6.87				
1200	2	28.6	509	6.96				
1214	2	28.10	510	6.96				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1215 Time Completed: 1217

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-532595	1215	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-532595	1215	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-603428

Well Name: GV-01-GVDWID

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/11/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth (ft): 645

Casing Diameter ("d", in.): 16"

Screened Interval (ft): From: _____ To: _____

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): [Last WL on 4/10/07=218.11]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>947</u>	<u>700</u>	<u>27.1</u>	<u>443</u>	<u>7.62</u>				<u>Unable to get w/ measurement</u>
<u>952</u>		<u>26.8</u>	<u>447</u>	<u>7.64</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

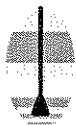
Time Started: 955 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-603428-_____	<u>955</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-603428-_____	<u>955</u>	PLASTIC	125 /250	2	300.1/200.7	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-603429 ✓

Well Name: GV-02-GVDWID

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/11/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth (ft): 560

Casing Diameter ("d", in.): 16" Screened Interval (ft): From: _____ To: _____

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 4/10/07=187.10] 200.45

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = 3760$ Gallons, (3 Casing Volumes 11280 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1132 Time Completed: 1152 Total Purge Time: 20 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: 14500 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1137</u>	<u>725</u>	<u>26.2</u>	<u>630</u>	<u>7.49</u>			<u>None</u>	<u>clear/cold</u>
<u>1141</u>	<u>1</u>	<u>24.3</u>	<u>652</u>	<u>7.47</u>				
<u>1146</u>	<u>1</u>	<u>24.0</u>	<u>650</u>	<u>7.50</u>				
<u>1149</u>		<u>24.0</u>	<u>649</u>	<u>7.50</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1150 Time Completed: 1153

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (Mi)	No. of Containers	Analysis Method	Preservative	Notes
UGW-603429-_____	<u>1150</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-603429-_____	<u>1150</u>	PLASTIC	125/250	2	300.1/200.7	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-509604 ✓

Well Name: GV-02-PCWW

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 19 /2007

Recorder/Sampler: Mark Arneson

WELL INFORMATION

Total Well Depth (ft): 230

Casing Diameter ("d", in.): 8" Screened Interval (ft): From: _____ To: _____

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 1/18/07=162.76] 162.48

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 176 Gallons, (3 Casing Volumes 529 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0917 Time Completed: 0939 Total Purge Time: 22 min

Purge Method: Pump Pump Setting (depth): _____ Total Purge Volume: 682 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>0921</u>	<u>31</u>	<u>21.4</u>	<u>1485</u>	<u>7.00</u>	<u>turbidity</u>		<u>None</u>	
<u>924</u>	<u>31</u>	<u>21.0</u>	<u>1480</u>	<u>7.07</u>	<u>29.65</u>			
<u>929</u>	<u>31</u>	<u>20.7</u>	<u>1492</u>	<u>7.03</u>	<u>11.79</u>			
<u>933</u>	<u>31</u>	<u>20.7</u>	<u>1496</u>	<u>7.05</u>	<u>12.99</u>			
<u>936</u>	<u>31</u>	<u>20.9</u>	<u>1490</u>	<u>7.04</u>	<u>11.21</u>			

SAMPLING INFORMATION AND SAMPLE RECORD

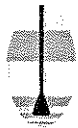
Time Started: 9:39 Time Completed: 9:41

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
<u>UGW-509604-</u>	<u>9:39</u>	<u>PLASTIC</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>
<u>FGW-509604-</u>	<u>9:39</u>	<u>PLASTIC</u>	<u>125/250</u>	<u>2</u>	<u>300.1/200.7</u>	<u>HNO3/NONE</u>	<u>FILTERED</u>

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-515867 ✓

Well Name: HAVEN GOLF

Project Name/Number: SIERRITA GW MONITORING (78306.2) Date: July 19 /2007

Recorder/Sampler: Mark Arneson
Johanna SV.

WELL INFORMATION

Total Well Depth ("a", ft): 500

Casing Diameter ("d", in.): 14"

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): [Obstructed: ADWR EST = 160 FT]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 2719 Gallons, (3 Casing Volumes 8157 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 12:00pm Time Completed: 12:15pm Total Purge Time: 15 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>12:05</u>	<u>800</u>	<u>35.0</u>	<u>611</u>	<u>7.60</u>				
<u>12:07</u>		<u>34.5</u>	<u>619</u>	<u>7.61</u>				
<u>12:10</u>		<u>34.0</u>	<u>616</u>	<u>7.59</u>				
<u>12:13</u>		<u>32.8</u>	<u>622</u>	<u>7.57</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 12:15 Time Completed: 12:16

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
<u>UGW-515867-</u>		<u>PLASTIC</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>
<u>FGW-515867-</u>		<u>PLASTIC</u>	<u>125/250</u>	<u>2</u>	<u>200.7/300.1</u>	<u>HNO3/NONE</u>	<u>FILTERED</u>

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: ~~GW-634037~~ GW-634036 ✓

Well Name: ~~Private [redacted]~~ Johnson

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/12/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 820.74 7/19/07

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 930 Time Completed: 0955 Total Purge Time: 25 min

Purge Method: Drain Tank Pump Setting (depth): _____ Total Purge Volume: 75 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
938	3	30.9	490	6.88			None	Clear
943		30.7	499	7.52				
948		30.4	493	7.53				
950		30.4	495	7.54				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 0955 Time Completed: 1000

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-634036	<u>0955</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-634036	<u>0955</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: MO-2007-1A

Well Name: American Legion Well

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 8/8/2007

Recorder/Sampler: M.A

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____ Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): _____

One Wetted Casing Volume: $(a-b) \cdot d2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1300 Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1300		29.0	370	7.17				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1300 Time Completed: 1302

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW- <u>MO-2007-1A</u>	<u>1300</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW- <u>MO-2007-1A</u>		PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: MO-2007-1B

Well Name: American Legion Well

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 8/12/2007

Recorder/Sampler: Mark Arneson

WELL INFORMATION

Total Well Depth ("a", ft): _____

No Purge Read - Test In Progress

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): _____

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1445 Time Completed: _____ Total Purge Time: _____ min

Purge Method: Grubbs Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1445		30.7	321	7.41				

SAMPLING INFORMATION AND SAMPLE RECORD

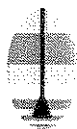
Time Started: 1445 Time Completed: 1447

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW- <u>MO-2007-1B</u>	<u>1445</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW- <u>MO-2007-1B</u>	<u>1445</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: MO-2007-1C

Well Name: American Legion Well

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7 / 31 / 2007

Recorder/Sampler: Kim Garcia

WELL INFORMATION

Total Well Depth ("a", ft): 1190

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA 1180 To: NA 1020

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): (Static @ 8:35 AM) 423.58'

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0921 Time Completed: 1520 Total Purge Time: _____ min

Purge Method: 10HP Grindbox Pump Setting (depth): _____ Total Purge Volume: 13,700 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (micro/cm) $\mu S/cm$	pH	Other NTU	D.O. (mg/L)	Odor	Notes
1020 1009	1/2 1/2	31.2	420	7.52	4.03			well running (penamval)
1115	1/2	31.7	484	7.41	6.09			rounding sampling
1245	1/2	31.3	508	7.23	2.92			
1400	1/2	30.2	518	7.35	5.47			
1410	1/2	NA	1411	6.95/4.03	2.62			#12C Temp - Calib check
1520	1/2	27.9	523	7.35	7.51			

SAMPLING INFORMATION AND SAMPLE RECORD

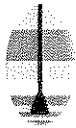
Time Started: 1520 Time Completed: 1520

Sampling Method, Type of Sampling Pump or Bailer: grab fr. sample point @ well head

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
MO-2007-1C-F	1520	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
MO-2007-1C-U	1520	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No:

MO-2

Well Name: _____

Project Name/Number: SIERRITA GW MONITORING (78306.2)Date: 6/14/2007

Recorder/Sampler:

NH

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NAWell/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): _____

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1550

Time Completed: _____

Total Purge Time: _____ min

Purge Method: _____

Pump Setting (depth): _____

Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1550	37.5	32.2	1372	7.05				

SAMPLING INFORMATION AND SAMPLE RECORD

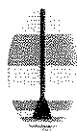
Time Started: 1550Time Completed: 1551

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW- <u>MO-2PT</u>		PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW- <u>MO-2PT</u>		PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-906765

Well Name: MO-2007-2

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 08 / 09 /2007

Recorder/Sampler: NB

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 575

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____

Time Completed: _____

Total Purge Time: 22 min

Purge Method: _____

Pump Setting (depth): _____

Total Purge Volume: 550 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1451		29.9	1013	7.06				Cloudy, non-transparent
1453		31.8	1135	7.06				Cloudy, somewhat transparent
1458		32.1	1260	7.09				Slightly cloudy
1501		32.2	1267	7.09				Clear
1505		32.2	1271	7.11				Clear

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: _____

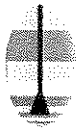
Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-MO-2007-2	1510	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-MO-2007-2	1510	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: MD-3-1

Well Name: MD-2007-3C

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 6/28/2007

Recorder/Sampler: GS/MA

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): _____

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
16:00		32.2	570	7.93				

SAMPLING INFORMATION AND SAMPLE RECORD

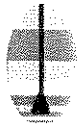
Time Started: _____ Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW- MD-3-1 FGW	16:00	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW- MD-3 16W	16:00	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-907211

Well Name: MO-2007-4C

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 08 / 16 / 2007

Recorder/Sampler: N.J. Babb

WELL INFORMATION

Total Well Depth ("a", ft): 1140' to cc

Casing Diameter ("d", in.): 5" in. Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA 1140' to cc Depth to Water ("b", ft): 307.13' ft to cc

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = 849.5$ Gallons, (3 Casing Volumes 2550 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 7:48 Time Completed: 11:50 Total Purge Time: 182 min

Purge Method: 4" in. 10-hp Grundfos Pump Setting (depth): 429' ft to cc Total Purge Volume: 9147 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other turbidity	D.O. (mg/L)	Odor	Notes
7:48	15 gpm	26.0	467	7.58	12.2 NTU	N/A	No	clear discharge 900
8:27	"	28.7	471	7.83	8.52	"	"	" 60 min @ 15 gpm = 900 gal
8:49	27 gpm	30.1	477	7.75	7.95	"	"	clear discharge
9:15	"	31.5	473	7.70	5.06	"	"	"
9:50	55 gpm	32.1	474	7.71	4.72	"	"	" 60 min @ 55 gpm = 1650 gal
10:20	"	33.7	"	7.63	9.61	"	"	clear discharge
11:36	"	35.2	472	7.62	4.87	"	"	
11:50	"							obtained samples: (SO ₄ , ANIONS, METALS) 120 mins @ 55 gpm = 6600
2 hrs @ 55 gpm = 6600								

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 11:50 Time Completed: 11:50

Sampling Method, Type of Sampling Pump or Bailer: 4" in. 10-hp Grundfos w/ sampling port

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-907211	11:50	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO ₃	FILTERED
UGW-907211	"	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time
N/A			



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-

Well Name: MO-2007-5C

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 8/23/2007

Recorder/Sampler: M. Aaneson

WELL INFORMATION

Total Well Depth ("a", ft): 1370

Casing Diameter ("d", in.): 5

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA

Depth to Water ("b", ft): 294.04

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other <i>Turb (NTU)</i>	D.O. (mg/L)	Odor	Notes
1625	21	32.5	930	7.47	4.10			<i>Sample was collected during doublet testing</i>
1702		33.0	952	7.43	5.52			
1730		33.2	956	7.47	2.93			

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1430 Time Completed: 1432

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW- <u>MO-2007-5C</u>	<u>1430</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO ₃	FILTERED
UGW- <u>MO-2007-5C</u>	<u>1430</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-605898

Well Name: NP-2

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 08 / 13 /2007

Recorder/Sampler: MB

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____ Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): 352

One Wetted Casing Volume: $(a-b) \cdot d2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0828 Time Completed: _____ Total Purge Time: 68 min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: 3,060 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C)	Conductivity (uhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
0832		26.3	413	7.22				Clear
0840		25.8	415	7.25				Clear
0848		25.7	419	7.25				Clear
0858		25.7	428	7.24				Clear
0906		25.8	433	7.24				Clear
0913		25.8	437	7.23				Clear
0921		25.8	440	7.21				Clear
0929		25.8	442	7.19				Clear
0936		26.0	441	7.16				Clear

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: _____ Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-NP-2	0940	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-NP-2	0940	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

This pump runs 3 times Per day
It was off when we got this place
and turned it on at 10:20 am.

KE 7/19/07

Well No: ~~GW-605898~~ 624028

Well Name: NP-2 [FICO]

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18/2007

Recorder/Sampler: MA/JS

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): Last wt 20/1/07 = 138.00

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 10:20 Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
10:24	28	26.7	851	7.24				
10:29		23.5	834	7.26				
10:35		22.8	816	7.26				
10:40		23.2	816	7.30				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 10:45 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-605898-624028		PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-605898-624028		PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-599350 ✓

Well Name: Private [Roberts]

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7 / 12 / 2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth (ft): 357

Casing Diameter ("d", in.): 8" Screened Interval (ft): From: _____ To: _____

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 2/2/07=251.30]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1110 Time Completed: 1135 Total Purge Time: 25 min

Purge Method: Drain Tank Pump Setting (depth): _____ Total Purge Volume: 50 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1110</u>	<u>2</u>	<u>36.1</u>	<u>395</u>	<u>7.51</u>			<u>None</u>	<u>clear</u>
<u>1115</u>		<u>29.8</u>	<u>403</u>	<u>7.50</u>				
<u>1125</u>		<u>29.5</u>	<u>404</u>	<u>7.48</u>				
<u>1130</u>		<u>29.5</u>	<u>405</u>	<u>7.49</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

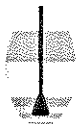
Time Started: 1135 Time Completed: 1139

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
<u>UG-599350-</u>	<u>1135</u>	<u>PLASTIC</u>	<u>250</u>	<u>1</u>	<u>300.0</u>	<u>NONE</u>	<u>UNFILTERED</u>
<u>FGW-599350-</u>	<u>1135</u>	<u>PLASTIC</u>	<u>125 / 250</u>	<u>2</u>	<u>300.1 / 200.7</u>	<u>HNO3 / NONE</u>	<u>FILTERED</u>

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-608521

Well Name: RRQC-1

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 2/17/2007

Recorder/Sampler: IMA

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____ Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____ Depth to Water ("b", ft): last WL on 2/28/07 = 257.44

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

No Purge Rec'd

Time Started: 0910 Time Completed: 0925 Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
915	600	32.8	652	7.74				
920		32.3	651	8.18				
922		32.2	657	8.20				

SAMPLING INFORMATION AND SAMPLE RECORD

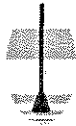
Time Started: 0925 Time Completed: 0930

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-608521-_____	0925	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
UGW-608521-_____	0925	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-608597 ✓

Well Name: RRQC-4

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/17/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): _____

Casing Diameter ("d", in.): _____

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): Last WLO on 2/27/07 = 280.20

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 0953 Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>954</u>	<u>300</u>	<u>28.9</u>	<u>439</u>	<u>7.64</u>			<u>None</u>	<u>Clear</u>
<u>1000</u>		<u>26.5</u>	<u>438</u>	<u>7.70</u>				
<u>1005</u>		<u>26.5</u>	<u>439</u>	<u>7.69</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1010 Time Completed: 1015

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-608597-_____	<u>1010</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-608597-_____	<u>1016</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-623982 ✓

Well Name: S-19A FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18 /2007

Recorder/Sampler: MA/JS

WELL INFORMATION

Total Well Depth ("a", ft): 2280

No Purge Requ.

Casing Diameter ("d", in.): 20

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): [Last WL on 2/21/07=228 ft]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
8:25	1500	38.7	566	8.50				<i>No Purge Required</i>
8:27		38.6	564	8.59				
8:30		38.5	568	8.59				
8:32		38.7	565	8.57				

SAMPLING INFORMATION AND SAMPLE RECORD

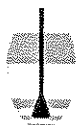
Time Started: 8:35 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-623982-_____	<u>8:35</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-623982-_____	<u>8:35</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-623991 ✓

Well Name: S-40 FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18/2007

Recorder/Sampler: MA/JS

WELL INFORMATION

Total Well Depth ("a", ft): 1525

No Purge Required

Casing Diameter ("d", in.): 20

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): [Last WL on 2/21/07=161 ft]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

No purge Req'd

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
8:02	1200	26.3	682	7.02				
8:05		26.0	704	7.30				
8:07		25.8	693	7.32				
8:09		25.8	696	7.31				

SAMPLING INFORMATION AND SAMPLE RECORD

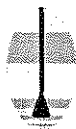
Time Started: 8:12am Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-623991-_____		PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-623991-_____		PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-623994 ✓

Well Name: S-44 FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18 / 2007

Recorder/Sampler: MA/JS

WELL INFORMATION

Total Well Depth ("a", ft): 1200

Casing Diameter ("d", in.): 20 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____ Depth to Water ("b", ft): [Last WL on 2/21/07=211 ft]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
8:47		30.2	⁷⁵ 682 710	7.46				No Purge Required
8:49		27.0	683	7.46				
8:51		26.3	689	7.46				
8:53		26.0	694	7.46				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 8:55 am Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-623994-_____	8:55	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-623994-_____	8:55	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

ADWR 550533

Well No.: SAH-1

Project Name/Number: 78306.2

Date: 7-25-07

Recorder/Sampler: MA

WELL INFORMATION

• Total Well Depth (ft): 500

Casing Diameter ("d", in.): 4"

Screened Interval (ft): From: To:

Well/Packer Depth ("a", ft):

Depth to Water ("b", ft) (1/25 408.25) 411.38

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 = 58$ Gallons, (3 Casing Volumes 175 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 827 Time Completed: 852 Total Purge Time: 25 min

Purge Method: Pump Setting (depth): Total Purge Volume: 375 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
827	15	29.6	695	7.18			None	Clear
830	1	29.5	861	7.67				Clear
835	1	29.9	851	7.67				Slight reddish brown
840	1	29.8	830	7.66				" " "
845	1	29.9	824	7.64				More clear
850	1	29.8	818	7.65				

SAMPLING INFORMATION AND SAMPLE RECORD

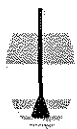
Time Started: 8:52 Time Completed: 8:54

Sampling Method, Type of Sampling Pump or Bailer:

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FGW-550533	852	plastic	125ml	1		HNO ₃	metals/filtered
FGW-550533	852	plastic	250ml	1		None	Anions/filtered
UGW-550533	852	plastic	250ml	1		Raw	SO ₄ unfiltered

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-635386

Well Name: Santa Rita Ranch 1

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/17/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 500

Casing Diameter ("d", in.): 8 Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____ Depth to Water ("b", ft): last WL on 2/15/07 = 316.03 ft 316.75

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 480 Gallons, (3 Casing Volumes) 1445 gal

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1225 Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1230	7	30.3	318	7.90			None	Clear
1240	7	28.9	331	7.83			None	Rusty
1250	7	26.6	331	7.81			"	clear
1355	7	26.4	337	7.81			"	"
1432	7	26.4	332	7.84			"	"
1500	7	26.4	339	7.87				
1530		26.4	336	7.86				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1532 Time Completed: 1536

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-6635386-_____	1532	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-635386-_____	1532	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-635387 ✓

Well Name: Santa Rita Ranch 2

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/17/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth ("a", ft): 225

No Purge Rec'd

Casing Diameter ("d", in.): _____ Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____ Depth to Water ("b", ft): lost when 2/15/07 = 172.80

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1123 Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1123</u>	<u>4</u>	<u>29.1</u>	<u>529</u>	<u>7.62</u>			<u>None</u>	<u>clear</u>
<u>1127</u>		<u>28.2</u>	<u>533</u>	<u>7.64</u>				
<u>1131</u>		<u>28.1</u>	<u>536</u>	<u>7.62</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1135 Time Completed: 1138

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-6635387-_____		PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-635387-_____		PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-208825 ✓

Well Name: SI-WELL

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7 / 11 / 2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth (ft): 650

Casing Diameter ("d", in.): 16" Screened Interval (ft): From: _____ To: _____

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): [Last WL on 4/10/07=238.55]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: No Purge Rec'd min
Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>1014</u>		<u>27.4</u>	<u>381</u>	<u>7.54</u>			<u>None</u>	<u>Slightly cloudy</u>
<u>1019</u>		<u>27.1</u>	<u>389</u>	<u>7.59</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1020 Time Completed: 1023

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
UGW-208825-_____	<u>1020</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
FGW-208825-_____	<u>1020</u>	PLASTIC	125/250	2	200.7/300.1	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project Name/Number: Sierrita GW Monitoring 78306.2

Well No.: TMM-1

Date: 6-19-07

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth (ft): 459

Casing Diameter ("d", in.): 10

Screened Interval (ft): From: To:

Well/Packer Depth ("a", ft):

Depth to Water ("b", ft): 4.32 (432.50 on 6/18/07)

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 110 Gallons, (3 Casing Volumes 330 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1005

Time Completed: 1230

Total Purge Time: 2h25 min

Purge Method: Grundfos

Pump Setting (depth): 444

Total Purge Volume: 290 gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other turbidity	D.O. (mg/L)	Odor	Notes
1020	2	31.4	342	7.83	33.77		None	slightly muddy
1040	2	29.0	352	7.72	81.00		"	mostly clear/some sediments
1100	2	29.6	350	7.78	41.92		"	has very slight brown color
1125	2	29.8	349	7.72	6.31		"	clear
1140	2	29.7	352	7.79	0.00		"	clear
1200	2	29.9	352	7.71	0.00		"	clear
1222	2	29.7	351	7.73	0.00		"	clear

SAMPLING INFORMATION AND SAMPLE RECORD

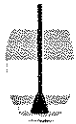
Time Started: 1230 Time Completed: 1232

Sampling Method, Type of Sampling Pump or Bailer: Pump

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
TMM-1	1230	Plastic	125/250	2	200.7/300.0	HNO ₃ /none	Filtered
TMM-1	1230	Plastic	250	1	300.0	none	Unfiltered

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-532595-540451 ^{KG 7/19/07}

Well Name: Private [U of A]

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: 7/16/2007

Recorder/Sampler: MA

WELL INFORMATION

Total Well Depth (ft): 296

Casing Diameter ("d", in.): 9" Screened Interval (ft): From: To:

Well/Packer Depth ("a", ft): NA Depth to Water ("b", ft): Last WL on 1/19/07=186.901

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ 363 Gallons, (3 Casing Volumes 1090 gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1410 Time Completed: 1510 Total Purge Time: min

Purge Method: Pump Setting (depth): Total Purge Volume: gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
1417	20	30.1	459	7.79			None	Clear
1427	20	27.5	477	7.57				
1437	20	27.6	474	7.63				
1452	20	27.5	475	7.66				
1508	20	27.4	475	7.70				

SAMPLING INFORMATION AND SAMPLE RECORD

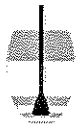
Time Started: 1510 Time Completed: 1514

Sampling Method, Type of Sampling Pump or Bailer:

Sample No.	Time	Container Type	Volume (mL)	No. of Containers	Analysis Method	Preservative	Notes
<u>540451</u> UGW-532595	<u>1510</u>	PLASTIC	250	1	300.0	NONE	UNFILTERED
<u>540451</u> FGW-532595	<u>1510</u>	PLASTIC	125 / 250	2	300.1/200.7	HNO3/NONE	FILTERED

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-624024 ✓

Well Name: W-9 FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18/2007

Recorder/Sampler: MA/JS

WELL INFORMATION

Total Well Depth ("a", ft): 1175

No Purge Required

Casing Diameter ("d", in.): 16

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): [Last WL on 2/21/07=177 ft]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
<u>11:00</u>	<u>1.100</u>	<u>24.9</u>	<u>605</u>	<u>7.56</u>				
<u>11:02</u>		<u>24.3</u>	<u>612</u>	<u>7.57</u>				
<u>11:04</u>		<u>24.0</u>	<u>624</u>	<u>7.57</u>				
<u>11:05</u>		<u>23.7</u>	<u>623</u>	<u>7.56</u>				

SAMPLING INFORMATION AND SAMPLE RECORD

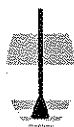
Time Started: 11:10 am Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-624024-_____	<u>11:10</u>	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-624024-_____	<u>11:10</u>	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time
<u>DU071807A</u>			<u>1115</u>



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-624025 ✓

Well Name: W-11 FICO

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18/2007

Recorder/Sampler: MA/SS

WELL INFORMATION

Total Well Depth ("a", ft): 1186

No Purge Required

Casing Diameter ("d", in.): 18

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): (Last WL on 2/21/07=136 ft)

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
11:40	2000	31.3	617	7.51				
11:42		29.7	614	7.56				
11:44		21.6	600	7.49				
11:47		21.0	600	7.50				
11:49		20.9	604	7.50				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 11:50 am Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-624025-_____	11:50	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-624025-_____	11:50	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Well No: GW-624026 ✓

Well Name: W-12 FICOT

Project Name/Number: SIERRITA GW MONITORING (78306.2)

Date: July 18/2007

Recorder/Sampler: HA/JS

WELL INFORMATION

Total Well Depth ("a", ft): 1300

No Purge Required

Casing Diameter ("d", in.): 18

Screened Interval (ft): From: NA To: NA

Well/Packer Depth ("a", ft): _____

Depth to Water ("b", ft): [Last WL on 2/21/07=157 ft]

One Wetted Casing Volume: $(a-b) \cdot d^2 \cdot 0.0408 =$ _____ Gallons, (3 Casing Volumes _____ gal)

PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: _____ Time Completed: _____ Total Purge Time: _____ min

Purge Method: _____ Pump Setting (depth): _____ Total Purge Volume: _____ gal

Actual or Elapsed Time (Min)	Extraction Rate/Vol (gpm)	Temp (°C / °F)	Conductivity (mhos/cm)	pH	Other	D.O. (mg/L)	Odor	Notes
12:05		25.7	572	6.80				
12:07		24.3	590	7.56				
12:09		23.7	590	7.56				
12:10		23.6	589	7.56				

SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 12:15 Time Completed: _____

Sampling Method, Type of Sampling Pump or Bailer: _____

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
UGW-624026-_____	12/15	PLASTIC	125 mL/250 mL	2	300.1/200.7	NONE/HNO3	FILTERED
FGW-624026-_____	12/15	PLASTIC	250 mL	1	300.0	NONE	RAW

QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	Type	QC Sample No.	Time
<u>EQB 071807</u>			12:20
<u>UGW - Blank</u>			
<u>FTB 071807</u>			12:25