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

Analytical Report

March 13, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.0
ACZ Project ID: L67881

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 28, 2008. This project has been assigned to ACZ's project number, L67881. 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 L67881. 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 April 13, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Sue Webber has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.0
Sample ID: TM-6

ACZ Sample ID: ***L67881-01***
Date Sampled: *02/27/08 08:45*
Date Received: *02/28/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	42.2			mg/L	0.2	1	03/03/08 14:09	aeh/erf
Magnesium, dissolved	M200.7 ICP	19.0			mg/L	0.2	1	02/29/08 18:34	aeh/erf
Potassium, dissolved	M200.7 ICP	1.7	B		mg/L	0.3	2	02/29/08 18:34	aeh/erf
Sodium, dissolved	M200.7 ICP	54.3			mg/L	0.3	2	02/29/08 18:34	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		218			mg/L	2	20	03/04/08 0:00	jlfr
Carbonate as CaCO3			U		mg/L	2	20	03/04/08 0:00	jlfr
Hydroxide as CaCO3			U		mg/L	2	20	03/04/08 0:00	jlfr
Total Alkalinity		218			mg/L	2	20	03/04/08 0:00	jlfr
Cation-Anion Balance	Calculation								
Cation-Anion Balance		10.9			%			03/13/08 12:36	calc
Sum of Anions		4.9			meq/L	0.1	0.5	03/13/08 12:36	calc
Sum of Cations		6.1			meq/L	0.1	0.5	03/13/08 12:36	calc
Chloride	M300.0 - Ion Chromatography	7.1			mg/L	0.5	3	03/10/08 16:54	aml
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	03/07/08 18:25	aml
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.96			mg/L	0.02	0.1	03/13/08 12:36	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.96			mg/L	0.02	0.1	02/28/08 18:22	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	02/28/08 18:22	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	310			mg/L	10	20	02/29/08 11:23	cas
Sulfate	300.0 - Ion Chromatography	13.9			mg/L	0.5	3	03/10/08 16:54	aml
TDS (calculated)	Calculation	274			mg/L	10	50	03/13/08 12:36	calc
TDS (ratio - measured/calculated)	Calculation	1.13						03/13/08 12:36	calc

Arizona license number: AZ0102

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Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.0
Sample ID: TM-15

ACZ Sample ID: ***L67881-02***
Date Sampled: *02/27/08 10:07*
Date Received: *02/28/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	32.9			mg/L	0.2	1	03/03/08 14:12	aeh/erf
Magnesium, dissolved	M200.7 ICP	18.0			mg/L	0.2	1	02/29/08 18:38	aeh/erf
Potassium, dissolved	M200.7 ICP	2.0			mg/L	0.3	2	02/29/08 18:38	aeh/erf
Sodium, dissolved	M200.7 ICP	32.4			mg/L	0.3	2	02/29/08 18:38	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		181			mg/L	2	20	03/04/08 0:00	jlfr
Carbonate as CaCO3		2	B		mg/L	2	20	03/04/08 0:00	jlfr
Hydroxide as CaCO3			U		mg/L	2	20	03/04/08 0:00	jlfr
Total Alkalinity		183			mg/L	2	20	03/04/08 0:00	jlfr
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.5			%			03/13/08 12:36	calc
Sum of Anions		4.2			meq/L	0.1	0.5	03/13/08 12:36	calc
Sum of Cations		4.6			meq/L	0.1	0.5	03/13/08 12:36	calc
Chloride	M300.0 - Ion Chromatography	7.1			mg/L	0.5	3	03/07/08 19:19	aml
Fluoride	M300.0 - Ion Chromatography	0.4	B		mg/L	0.1	0.5	03/07/08 19:19	aml
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.56			mg/L	0.02	0.1	03/13/08 12:36	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.56			mg/L	0.02	0.1	02/28/08 18:25	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	02/28/08 18:25	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	220			mg/L	10	20	02/29/08 11:24	cas
Sulfate	300.0 - Ion Chromatography	14.0			mg/L	0.5	3	03/07/08 19:19	aml
TDS (calculated)	Calculation	224			mg/L	10	50	03/13/08 12:36	calc
TDS (ratio - measured/calculated)	Calculation	0.98						03/13/08 12:36	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.0

ACZ Project ID: ***L67881***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241115													
WG241115PBW1	PBW	03/04/08 17:29				U	mg/L		-20	20			
WG241115LCSW2	LCSW	03/04/08 17:42	WC080131-1	820		866.9	mg/L	105.7	90	110			
L67884-06DUP	DUP	03/04/08 18:38			58	57.7	mg/L				0.5	20	
WG241115PBW2	PBW	03/04/08 20:01				U	mg/L		-20	20			
WG241115LCSW5	LCSW	03/04/08 20:13	WC080131-1	820		866.3	mg/L	105.6	90	110			
WG241115PBW3	PBW	03/04/08 23:02				U	mg/L		-20	20			
WG241115LCSW8	LCSW	03/04/08 23:14	WC080131-1	820		847.8	mg/L	103.4	90	110			
WG241115LCSW11	LCSW	03/05/08 1:55	WC080131-1	820		872.8	mg/L	106.4	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241029													
WG241029ICV	ICV	03/03/08 12:54	II080115-3	100		99.25	mg/L	99.3	95	105			
WG241029ICB	ICB	03/03/08 12:57				U	mg/L		-0.6	0.6			
WG241029LFB	LFB	03/03/08 13:10	II080214-5	67.97008		71.99	mg/L	105.9	85	115			
L67879-01AS	AS	03/03/08 14:00	II080214-5	67.97008	39.7	110.37	mg/L	104	85	115			
L67879-01ASD	ASD	03/03/08 14:03	II080214-5	67.97008	39.7	110.88	mg/L	104.7	85	115	0.46	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241250													
WG241250ICV	ICV	03/07/08 13:17	WI080220-1	19.98		20.24	mg/L	101.3	90	110			
WG241250ICB	ICB	03/07/08 13:35				U	mg/L		-1.5	1.5			
WG241250LFB	LFB	03/07/08 13:53	WI080306-2	30		29.36	mg/L	97.9	90	110			
WG241250ICV1	ICV	03/10/08 15:05	WI080220-1	19.98		20.03	mg/L	100.3	90	110			
WG241250ICB1	ICB	03/10/08 15:23				U	mg/L		-1.5	1.5			
L67881-01AS	AS	03/10/08 17:12	WI080306-2	30	7.1	37.78	mg/L	102.3	90	110			
L67881-01DUP	DUP	03/10/08 17:30			7.1	7.04	mg/L				0.8	20	

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241250													
WG241250ICV	ICV	03/07/08 13:17	WI080220-1	4		4.07	mg/L	101.8	90	110			
WG241250ICB	ICB	03/07/08 13:35				U	mg/L		-0.3	0.3			
WG241250LFB	LFB	03/07/08 13:53	WI080306-2	1.5		1.56	mg/L	104	90	110			
L67881-01AS	AS	03/07/08 18:43	WI080306-2	1.5	.3	2.31	mg/L	134	90	110			M1
L67881-01DUP	DUP	03/07/08 19:01			.3	.79	mg/L				89.9	20	RA
WG241250ICV1	ICV	03/10/08 15:05	WI080220-1	4		3.91	mg/L	97.8	90	110			
WG241250ICB1	ICB	03/10/08 15:23				U	mg/L		-0.3	0.3			

Hydro Geo Chem, Inc.
Project ID: 872002.0

ACZ Project ID: ***L67881***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240989													
WG240989ICV	ICV	02/29/08 16:40	II080115-3	100		98.03	mg/L	98	95	105			
WG240989ICB	ICB	02/29/08 16:44				U	mg/L		-0.6	0.6			
WG240989LFB	LFB	02/29/08 16:59	II080214-5	54.96908		56.8	mg/L	103.3	85	115			
L67878-02AS	AS	02/29/08 18:00	II080214-5	54.96908	13.3	69.81	mg/L	102.8	85	115			
L67878-02ASD	ASD	02/29/08 18:04	II080214-5	54.96908	13.3	69.12	mg/L	101.5	85	115	0.99	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
WG240966													
WG240966ICV	ICV	02/28/08 17:57	WI071212-1	2.416		2.406	mg/L	99.6	90	110			
WG240966ICB	ICB	02/28/08 17:58				U	mg/L		-0.06	0.06			
WG240966LFB	LFB	02/28/08 17:59	WI070911-4	2		2.005	mg/L	100.3	90	110			
L67881-01DUP	DUP	02/28/08 18:23			.96	1.003	mg/L				4.4	20	
L67874-08AS	AS	02/28/08 18:41	WI070911-4	40	25.9	68.2	mg/L	105.8	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
WG240966													
WG240966ICV	ICV	02/28/08 17:57	WI071212-1	.609		.614	mg/L	100.8	90	110			
WG240966ICB	ICB	02/28/08 17:58				U	mg/L		-0.03	0.03			
WG240966LFB	LFB	02/28/08 17:59	WI070911-4	1		1.018	mg/L	101.8	90	110			
L67874-08AS	AS	02/28/08 18:21	WI070911-4	1	.07	1.088	mg/L	101.8	90	110			
L67881-01DUP	DUP	02/28/08 18:23			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
WG240989													
WG240989ICV	ICV	02/29/08 16:40	II080115-3	20		20.2	mg/L	101	95	105			
WG240989ICB	ICB	02/29/08 16:44				U	mg/L		-0.9	0.9			
WG240989LFB	LFB	02/29/08 16:59	II080214-5	99.76186		105.41	mg/L	105.7	85	115			
L67878-02AS	AS	02/29/08 18:00	II080214-5	99.76186	4.7	111.17	mg/L	106.7	85	115			
L67878-02ASD	ASD	02/29/08 18:04	II080214-5	99.76186	4.7	110.59	mg/L	106.1	85	115	0.52	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240990													
WG240990PBW	PBW	02/29/08 11:00				U	mg/L		-20	20			
WG240990LCSW	LCSW	02/29/08 11:01	PCN28838	260		294	mg/L	113.1	80	120			
L67883-03DUP	DUP	02/29/08 11:29			130	138	mg/L				6	20	

Hydro Geo Chem, Inc.
Project ID: 872002.0

ACZ Project ID: ***L67881***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240989													
WG240989ICV	ICV	02/29/08 16:40	II080115-3	100		99.1	mg/L	99.1	95	105			
WG240989ICV	ICV	02/29/08 16:40	II080115-3	100		100.39	mg/L	100.4	95	105			
WG240989ICB	ICB	02/29/08 16:44				U	mg/L		-6	6			
WG240989ICB	ICB	02/29/08 16:44				U	mg/L		-0.9	0.9			
WG240989LFB	LFB	02/29/08 16:59	II080214-5	98.21624		102.9	mg/L	104.8	85	115			
WG240989LFB	LFB	02/29/08 16:59	II080214-5	98.21624		103.03	mg/L	104.9	85	115			
L67878-02AS	AS	02/29/08 18:00	II080214-5	98.21624	8.9	111.04	mg/L	104	85	115			
L67878-02ASD	ASD	02/29/08 18:04	II080214-5	98.21624	8.9	110.72	mg/L	103.7	85	115	0.29	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241250													
WG241250ICV	ICV	03/07/08 13:17	WI080220-1	50.1		51.6	mg/L	103	90	110			
WG241250ICB	ICB	03/07/08 13:35				U	mg/L		-1.5	1.5			
WG241250LFB	LFB	03/07/08 13:53	WI080306-2	30		30.95	mg/L	103.2	90	110			
WG241250ICV1	ICV	03/10/08 15:05	WI080220-1	50.1		50.62	mg/L	101	90	110			
WG241250ICB1	ICB	03/10/08 15:23				.77	mg/L		-1.5	1.5			
L67881-01AS	AS	03/10/08 17:12	WI080306-2	30	13.9	43.35	mg/L	98.2	90	110			
L67881-01DUP	DUP	03/10/08 17:30			13.9	13.79	mg/L				0.8	20	

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67881***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67881-01	WG241250	Fluoride	M300.0 - Ion Chromatography	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) 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).
	WG240966	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).
L67881-02	WG240966	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).

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67881***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.0

ACZ Project ID: L67881
Date Received: 2/28/2008
Received By:
Date Printed: 2/28/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
2100	2.3	16

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.0

ACZ Project ID: L67881
Date Received: 2/28/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67881-01	TM-6		Y									
L67881-02	TM-15		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: _____

L67881

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson	Address: 51 W. Wetmore Rd
Company: Hydro Geo Chem (HGC)	Tucson AZ 85705
E-mail: dans@hgcinc.com	Telephone: (520) 293-1500 x 133

Copy of Report to:

Name: James Norris	E-mail: jimn@hgcinc.com
Company: HGC	Telephone: (520) 293-1500 x 112

Invoice to:

Name: James Norris	Address: 51 W. Wetmore Rd
Company: above	Tucson AZ 85705
E-mail: jimn@hgcinc.com	Telephone: (520) 293-1500 x 112

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: X; NO:

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

PROJECT INFORMATION

Quote #: FMCQB-GW

Project/PO #: 872002.0

Reporting state for compliance testing: AZ

Sampler's Name: MA + KW

Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca Na Mg ✓	TDS SO_4^{2-} NO_3^- F^- Cl^-	Alk
TM-6	2/27/08 8:45	GW		✓	✓	✓
TM-15	2/27/08 10:07	GW		✓	✓	✓

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
Kevin Wilson	2/27/08 16:35		02/28/08 11:0

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

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

Analytical Report

March 07, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L67843

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 26, 2008. This project has been assigned to ACZ's project number, L67843. 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 L67843. 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 April 07, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Tony Antalek has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: OSBORN

ACZ Sample ID: ***L67843-01***
Date Sampled: *02/25/08 14:30*
Date Received: *02/26/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	84.4			mg/L	0.2	1	02/28/08 17:57	aeh/erf
Magnesium, dissolved	M200.7 ICP	15.4			mg/L	0.2	1	02/28/08 17:57	aeh/erf
Potassium, dissolved	M200.7 ICP	4.3			mg/L	0.3	2	02/28/08 17:57	aeh/erf
Sodium, dissolved	M200.7 ICP	25.2			mg/L	0.3	2	02/28/08 17:57	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		246			mg/L	2	20	02/28/08 0:00	ear/cas
Carbonate as CaCO3		29			mg/L	2	20	02/28/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Total Alkalinity		275		*	mg/L	2	20	02/28/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.8			%			03/07/08 0:00	calc
Sum of Anions		6.6			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		6.7			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	18.2		*	mg/L	0.5	3	03/01/08 0:52	aml
Fluoride	M300.0 - Ion Chromatography	0.3	B		mg/L	0.1	0.5	03/01/08 0:52	aml
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.76			mg/L	0.02	0.1	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.76			mg/L	0.02	0.1	02/26/08 17:47	ccp
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	02/26/08 17:47	ccp
Residue, Filterable (TDS) @180C	160.1 / SM2540C	370			mg/L	10	20	02/28/08 11:01	cas
Sulfate	300.0 - Ion Chromatography	16.4			mg/L	0.5	3	03/01/08 0:52	aml
TDS (calculated)	Calculation	357			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.04						03/07/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67843***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240850													
WG240850PBW2	PBW	02/27/08 20:27				U	mg/L		-20	20			
WG240850LCSW5	LCSW	02/27/08 20:40	WC080131-1	820		816.8	mg/L	99.6	90	110			
WG240850PBW3	PBW	02/27/08 23:55				U	mg/L		-20	20			
WG240850LCSW8	LCSW	02/28/08 0:08	WC080131-1	820		851.3	mg/L	103.8	90	110			
L67847-05DUP	DUP	02/28/08 3:10			U	U	mg/L				0	20	RA
WG240850LCSW11	LCSW	02/28/08 3:23	WC080131-1	820		869.4	mg/L	106	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240946													
WG240946ICV	ICV	02/28/08 16:42	II080115-3	100		96.11	mg/L	96.1	95	105			
WG240946ICB	ICB	02/28/08 16:46				U	mg/L		-0.6	0.6			
WG240946LFB	LFB	02/28/08 17:02	II080214-5	67.97008		69.29	mg/L	101.9	85	115			
L67772-01AS	AS	02/28/08 17:10	II080214-5	67.97008	7.1	74.3	mg/L	98.9	85	115			
L67772-01ASD	ASD	02/28/08 17:14	II080214-5	67.97008	7.1	76.93	mg/L	102.7	85	115	3.48	20	
L67851-01AS	AS	02/28/08 18:05	II080214-5	67.97008	.6	72.66	mg/L	106	85	115			
L67851-01ASD	ASD	02/28/08 18:09	II080214-5	67.97008	.6	71.49	mg/L	104.3	85	115	1.62	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240998													
WG240998ICV	ICV	02/29/08 21:50	WI080220-1	19.98		20.4	mg/L	102.1	90	110			
WG240998ICB	ICB	02/29/08 22:09				U	mg/L		-1.5	1.5			
WG240998LFB	LFB	02/29/08 22:27	WI080128-9	30		29.83	mg/L	99.4	90	110			
L67721-03DUP	DUP	02/29/08 23:03			22	21.7	mg/L				1.4	20	RA
L67837-02AS	AS	03/03/08 12:26	WI080128-9	150	106	256.1	mg/L	100.1	90	110			

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240998													
WG240998ICV	ICV	02/29/08 21:50	WI080220-1	4		3.94	mg/L	98.5	90	110			
WG240998ICB	ICB	02/29/08 22:09				U	mg/L		-0.3	0.3			
WG240998LFB	LFB	02/29/08 22:27	WI080128-9	1.5		1.44	mg/L	96	90	110			
L67721-03DUP	DUP	02/29/08 23:03			9.2	9.09	mg/L				1.2	20	
L67837-02AS	AS	02/29/08 23:39	WI080128-9	1.5	.1	1.58	mg/L	98.7	90	110			

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240946													
WG240946ICV	ICV	02/28/08 16:42	II080115-3	100		96.42	mg/L	96.4	95	105			
WG240946ICB	ICB	02/28/08 16:46				U	mg/L		-0.6	0.6			
WG240946LFB	LFB	02/28/08 17:02	II080214-5	54.96908		56.19	mg/L	102.2	85	115			
L67772-01AS	AS	02/28/08 17:10	II080214-5	54.96908	10.7	63.74	mg/L	96.5	85	115			
L67772-01ASD	ASD	02/28/08 17:14	II080214-5	54.96908	10.7	66.92	mg/L	102.3	85	115	4.87	20	
L67851-01AS	AS	02/28/08 18:05	II080214-5	54.96908	U	57.9	mg/L	105.3	85	115			
L67851-01ASD	ASD	02/28/08 18:09	II080214-5	54.96908	U	57.28	mg/L	104.2	85	115	1.08	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67843***

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
WG240851													
WG240851ICV	ICV	02/26/08 17:23	WI071212-1	2.416		2.444	mg/L	101.2	90	110			
WG240851ICB	ICB	02/26/08 17:25				U	mg/L		-0.06	0.06			
WG240851LFB	LFB	02/26/08 17:28	WI070911-4	2		1.911	mg/L	95.6	90	110			
L67843-01DUP	DUP	02/26/08 17:49			3.76	3.741	mg/L				0.5	20	
L67843-01AS	AS	02/26/08 18:08	WI070911-4	10	3.5	13.58	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
WG240851													
WG240851ICV	ICV	02/26/08 17:23	WI071212-1	.609		.623	mg/L	102.3	90	110			
WG240851ICB	ICB	02/26/08 17:25				U	mg/L		-0.03	0.03			
WG240851LFB	LFB	02/26/08 17:28	WI070911-4	1		.967	mg/L	96.7	90	110			
L67843-01DUP	DUP	02/26/08 17:49			U	U	mg/L				0	20	RA
L67843-01AS	AS	02/26/08 17:50	WI070911-4	1	U	1.026	mg/L	102.6	90	110			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240946													
WG240946ICV	ICV	02/28/08 16:42	II080115-3	20		19.78	mg/L	98.9	95	105			
WG240946ICB	ICB	02/28/08 16:46				U	mg/L		-0.9	0.9			
WG240946LFB	LFB	02/28/08 17:02	II080214-5	99.76186		104.94	mg/L	105.2	85	115			
L67772-01AS	AS	02/28/08 17:10	II080214-5	99.76186	.9	107.94	mg/L	107.3	85	115			
L67772-01ASD	ASD	02/28/08 17:14	II080214-5	99.76186	.9	115.4	mg/L	114.8	85	115	6.68	20	
L67851-01AS	AS	02/28/08 18:05	II080214-5	99.76186	.6	108.52	mg/L	108.2	85	115			
L67851-01ASD	ASD	02/28/08 18:09	II080214-5	99.76186	.6	107.24	mg/L	106.9	85	115	1.19	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240937													
WG240937PBW	PBW	02/28/08 10:45				U	mg/L		-20	20			
WG240937LCSW	LCSW	02/28/08 10:46	PCN28838	260		292	mg/L	112.3	80	120			
L67871-01DUP	DUP	02/28/08 11:14			1150	1150	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
WG240946													
WG240946ICV	ICV	02/28/08 16:42	II080115-3	100		97.2	mg/L	97.2	95	105			
WG240946ICV	ICV	02/28/08 16:42	II080115-3	100		98.84	mg/L	98.8	95	105			
WG240946ICB	ICB	02/28/08 16:46				U	mg/L		-6	6			
WG240946ICB	ICB	02/28/08 16:46				U	mg/L		-0.9	0.9			
WG240946LFB	LFB	02/28/08 17:02	II080214-5	98.21624		103.59	mg/L	105.5	85	115			
WG240946LFB	LFB	02/28/08 17:02	II080214-5	98.21624		102.7	mg/L	104.6	85	115			
L67851-01AS	AS	02/28/08 18:05	II080214-5	98.21624	.4	104.97	mg/L	106.5	85	115			
L67851-01ASD	ASD	02/28/08 18:09	II080214-5	98.21624	.4	103.5	mg/L	105	85	115	1.41	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67843***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240083													
WG240083ICV	ICV	02/07/08 16:57	WI080128-8	50.1		50.44	mg/L	100.7	90	110			
WG240083ICB	ICB	02/07/08 17:15				U	mg/L		-1.5	1.5			
WG240083ICV1	ICV	02/09/08 11:47	WI080128-8	50.1		51.13	mg/L	102.1	90	110			
WG240083ICB1	ICB	02/09/08 12:05				U	mg/L		-1.5	1.5			
WG240998													
WG240998ICV	ICV	02/29/08 21:50	WI080220-1	50.1		52.15	mg/L	104.1	90	110			
WG240998ICB	ICB	02/29/08 22:09				U	mg/L		-1.5	1.5			
WG240998LFB	LFB	02/29/08 22:27	WI080128-9	30		29.71	mg/L	99	90	110			
L67721-03DUP	DUP	02/29/08 23:03			39	37.6	mg/L				3.7	20	
L67837-02AS	AS	03/03/08 12:26	WI080128-9	150	90	238.9	mg/L	99.3	90	110			

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67843***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67843-01	WG240998	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).
	WG240851	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).
	WG240850	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).

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67843***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67843
Date Received: 2/26/2008
Received By:
Date Printed: 2/26/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
NA5556	5.5	15

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67843
Date Received: 2/26/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67843-01	OSBORN		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: _____

L67843

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem (HGC)
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd #101 Tucson AZ 85705
Telephone: (520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC
E-mail: jimn@hgcinc.com
Telephone: (520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC
E-mail: jimn@hgcinc.com
Address: above
Telephone: above

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

PROJECT INFORMATION

Quote #: FMCQB-GW
Project/PO #: 872002.7
Reporting state for compliance testing: AZ
Sampler's Name: KW + MA
Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca Na Mg K	TDS SO4 NO2 NO3 Cl F	Alk						
Osborn	2/25/08 14:30	GW	3	✓	✓	✓						

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

REMARKS/ SAMPLE DISCLOSURES

PAGE 1 of 1

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kim Wilson	2/28/08 4:30		2:26:08 10:12

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

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

Analytical Report

March 07, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L67837

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 25, 2008. This project has been assigned to ACZ's project number, L67837. 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 L67837. 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 April 07, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Tony Antalek has reviewed and approved this report.

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

Case Narrative

Hydro Geo Chem, Inc.

March 07, 2008

Project ID: 872002.2
ACZ Project ID: L67837

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from Hydro Geo Chem, Inc. on February 25, 2008. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L67837. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

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

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: COB-MW-1

ACZ Sample ID: ***L67837-01***
Date Sampled: *02/22/08 08:20*
Date Received: *02/25/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	257			mg/L	0.2	1	02/28/08 15:30	erf
Magnesium, dissolved	M200.7 ICP	64.5			mg/L	0.2	1	02/28/08 15:30	erf
Potassium, dissolved	M200.7 ICP	7.7			mg/L	0.3	2	02/28/08 15:30	erf
Sodium, dissolved	M200.7 ICP	56.5			mg/L	0.3	2	02/28/08 15:30	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		206			mg/L	2	20	02/28/08 0:00	ear/cas
Carbonate as CaCO3		11	B		mg/L	2	20	02/28/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Total Alkalinity		217			mg/L	2	20	02/28/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.5			%			03/07/08 0:00	calc
Sum of Anions		20.2			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		20.8			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	19.8			mg/L	0.5	3	02/29/08 1:49	aml/ccp
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	03/04/08 14:42	cas
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	2.33			mg/L	0.02	0.1	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.33	H	*	mg/L	0.02	0.1	02/26/08 17:36	ccp
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	02/26/08 17:36	ccp
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1360		*	mg/L	10	20	02/28/08 10:54	cas
Sulfate	300.0 - Ion Chromatography	720			mg/L	10	50	02/29/08 20:38	aml/ccp
TDS (calculated)	Calculation	1270			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						03/07/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: WARREN LAGOON-COB

ACZ Sample ID: ***L67837-02***
Date Sampled: *02/22/08 09:10*
Date Received: *02/25/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	128			mg/L	0.2	1	02/28/08 15:42	erf
Magnesium, dissolved	M200.7 ICP	34.3			mg/L	0.2	1	02/28/08 15:42	erf
Potassium, dissolved	M200.7 ICP	7.2			mg/L	0.3	2	02/28/08 15:42	erf
Sodium, dissolved	M200.7 ICP	47.8			mg/L	0.3	2	02/28/08 15:42	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		269			mg/L	2	20	02/28/08 0:00	ear/cas
Carbonate as CaCO3		11	B		mg/L	2	20	02/28/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Total Alkalinity		280			mg/L	2	20	02/28/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.1			%			03/07/08 0:00	calc
Sum of Anions		10.8			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		11.5			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	106		*	mg/L	3	10	03/03/08 12:09	aml
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	03/04/08 14:45	cas
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.91			mg/L	0.02	0.1	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.91	H	*	mg/L	0.02	0.1	02/26/08 17:37	ccp
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	02/26/08 17:37	ccp
Residue, Filterable (TDS) @180C	160.1 / SM2540C	650		*	mg/L	10	20	02/28/08 10:55	cas
Sulfate	300.0 - Ion Chromatography	90			mg/L	3	10	03/03/08 12:09	aml
TDS (calculated)	Calculation	603			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.08						03/07/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: COB-MW-2

ACZ Sample ID: ***L67837-03***
Date Sampled: *02/22/08 10:00*
Date Received: *02/25/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	66.4			mg/L	0.2	1	02/28/08 15:46	erf
Magnesium, dissolved	M200.7 ICP	9.0			mg/L	0.2	1	02/28/08 15:46	erf
Potassium, dissolved	M200.7 ICP	2.1			mg/L	0.3	2	02/28/08 15:46	erf
Sodium, dissolved	M200.7 ICP	25.5			mg/L	0.3	2	02/28/08 15:46	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		156			mg/L	2	20	02/28/08 0:00	ear/cas
Carbonate as CaCO3		12	B		mg/L	2	20	02/28/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Total Alkalinity		168			mg/L	2	20	02/28/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			03/07/08 0:00	calc
Sum of Anions		5.2			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		5.2			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	19.4		*	mg/L	0.5	3	02/29/08 23:57	aml
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	03/04/08 14:50	cas
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	6.49			mg/L	0.06	0.3	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	6.49	H	*	mg/L	0.06	0.3	02/26/08 18:03	ccp
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	02/26/08 17:44	ccp
Residue, Filterable (TDS) @180C	160.1 / SM2540C	340		*	mg/L	10	20	02/28/08 10:56	cas
Sulfate	300.0 - Ion Chromatography	41.0			mg/L	0.5	3	02/29/08 23:57	aml
TDS (calculated)	Calculation	298			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						03/07/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: DUP022208

ACZ Sample ID: ***L67837-04***
Date Sampled: *02/22/08 00:00*
Date Received: *02/25/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	65.7			mg/L	0.2	1	02/28/08 15:58	erf
Magnesium, dissolved	M200.7 ICP	8.9			mg/L	0.2	1	02/28/08 15:58	erf
Potassium, dissolved	M200.7 ICP	2.1			mg/L	0.3	2	02/28/08 15:58	erf
Sodium, dissolved	M200.7 ICP	25.2			mg/L	0.3	2	02/28/08 15:58	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		156			mg/L	2	20	02/28/08 0:00	ear/cas
Carbonate as CaCO3		12	B		mg/L	2	20	02/28/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Total Alkalinity		169		*	mg/L	2	20	02/28/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.0			%			03/07/08 0:00	calc
Sum of Anions		5.2			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		5.1			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	19.3		*	mg/L	0.5	3	03/01/08 0:15	aml
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	03/04/08 14:54	cas
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	6.53			mg/L	0.06	0.3	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	6.53	H	*	mg/L	0.06	0.3	02/26/08 18:05	ccp
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	02/26/08 17:45	ccp
Residue, Filterable (TDS) @180C	160.1 / SM2540C	330		*	mg/L	10	20	02/28/08 10:58	cas
Sulfate	300.0 - Ion Chromatography	41.0			mg/L	0.5	3	03/01/08 0:15	aml
TDS (calculated)	Calculation	297			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.11						03/07/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: FB022208

ACZ Sample ID: ***L67837-05***
Date Sampled: *02/22/08 00:00*
Date Received: *02/25/08*
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	02/28/08 16:02	erf
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	02/28/08 16:02	erf
Potassium, dissolved	M200.7 ICP		U		mg/L	0.3	2	02/28/08 16:02	erf
Sodium, dissolved	M200.7 ICP	0.3	B		mg/L	0.3	2	02/28/08 16:02	erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Carbonate as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	ear/cas
Total Alkalinity			U	*	mg/L	2	20	02/28/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		n/a			%			03/07/08 0:00	calc
Sum of Anions			U		meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations			U		meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography		U	*	mg/L	0.5	3	03/01/08 0:34	aml
Fluoride	SM4500F-C		U	*	mg/L	1	5	03/04/08 15:01	cas
Lab Filtration	SM 3030 B			*				02/27/08 8:33	wpl
Lab Filtration & Acidification	SM 3030 B			*				02/27/08 7:55	wpl
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.03	B		mg/L	0.02	0.1	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.03	BH	*	mg/L	0.02	0.1	02/26/08 18:04	ccp
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.01	0.05	02/26/08 17:46	ccp
Residue, Filterable (TDS) @180C	160.1 / SM2540C	20	B	*	mg/L	10	20	02/28/08 10:59	cas
Sulfate	300.0 - Ion Chromatography		U		mg/L	0.5	3	03/01/08 0:34	aml
TDS (calculated)	Calculation		U		mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	n/a						03/07/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67837***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240850													
WG240850PBW2	PBW	02/27/08 20:27				U	mg/L		-20	20			
WG240850LCSW5	LCSW	02/27/08 20:40	WC080131-1	820		816.8	mg/L	99.6	90	110			
WG240850PBW3	PBW	02/27/08 23:55				U	mg/L		-20	20			
WG240850LCSW8	LCSW	02/28/08 0:08	WC080131-1	820		851.3	mg/L	103.8	90	110			
L67837-03DUP	DUP	02/28/08 1:51			168	168.7	mg/L				0.4	20	
L67847-05DUP	DUP	02/28/08 3:10			U	U	mg/L				0	20	RA
WG240850LCSW11	LCSW	02/28/08 3:23	WC080131-1	820		869.4	mg/L	106	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240944													
WG240944ICV1	ICV	02/28/08 13:59	II080115-3	100		98.01	mg/L	98	95	105			
WG240944ICB	ICB	02/28/08 14:03				U	mg/L		-0.6	0.6			
WG240944LFB	LFB	02/28/08 14:19	II080214-5	67.97008		69.14	mg/L	101.7	85	115			
L67837-03AS	AS	02/28/08 15:50	II080214-5	67.97008	66.4	130.76	mg/L	94.7	85	115			
L67837-03ASD	ASD	02/28/08 15:54	II080214-5	67.97008	66.4	133.18	mg/L	98.2	85	115	1.83	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240945													
WG240945ICV	ICV	02/28/08 17:58	WI080220-1	19.98		19.85	mg/L	99.3	90	110			
WG240945ICB	ICB	02/28/08 18:16				U	mg/L		-1.5	1.5			
WG240945LFB	LFB	02/28/08 18:34	WI080128-9	30		28.85	mg/L	96.2	90	110			
L67745-06AS	AS	02/28/08 23:24	WI080128-9	30	21.4	50.76	mg/L	97.9	90	110			
L67745-06DUP	DUP	02/28/08 23:42			21.4	21.49	mg/L				0.4	20	
WG240945ICV1	ICV	02/29/08 19:07	WI080220-1	19.98		20.3	mg/L	101.6	90	110			
WG240945ICB1	ICB	02/29/08 19:25				U	mg/L		-1.5	1.5			
WG240998													
WG240998ICV	ICV	02/29/08 21:50	WI080220-1	19.98		20.4	mg/L	102.1	90	110			
WG240998ICB	ICB	02/29/08 22:09				U	mg/L		-1.5	1.5			
WG240998LFB	LFB	02/29/08 22:27	WI080128-9	30		29.83	mg/L	99.4	90	110			
L67721-03DUP	DUP	02/29/08 23:03			22	21.7	mg/L				1.4	20	RA
L67837-02AS	AS	03/03/08 12:26	WI080128-9	150	106	256.1	mg/L	100.1	90	110			

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241077													
WG241077ICV	ICV	03/04/08 10:46	WC080227-1	2		2	mg/L	100	90	110			
WG241077ICB	ICB	03/04/08 10:53				U	mg/L		-0.3	0.3			
WG241077LFB1	LFB	03/04/08 10:58	WC080226-1	5		5.14	mg/L	102.8	90	110			
WG241077LFB2	LFB	03/04/08 12:32	WC080226-1	5		5.02	mg/L	100.4	90	110			
L67831-04AS	AS	03/04/08 14:19	WC080226-1	5	.3	5.52	mg/L	104.4	90	110			
L67831-04DUP	DUP	03/04/08 14:25			.3	.31	mg/L				3.3	20	RA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67837***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240944													
WG240944ICV1	ICV	02/28/08 13:59	II080115-3	100		99.99	mg/L	100	95	105			
WG240944ICB	ICB	02/28/08 14:03				U	mg/L		-0.6	0.6			
WG240944LFB	LFB	02/28/08 14:19	II080214-5	54.96908		57.01	mg/L	103.7	85	115			
L67837-03AS	AS	02/28/08 15:50	II080214-5	54.96908	9	64.27	mg/L	100.5	85	115			
L67837-03ASD	ASD	02/28/08 15:54	II080214-5	54.96908	9	65.86	mg/L	103.4	85	115	2.44	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
WG240851													
WG240851ICV	ICV	02/26/08 17:23	WI071212-1	2.416		2.444	mg/L	101.2	90	110			
WG240851ICB	ICB	02/26/08 17:25				U	mg/L		-0.06	0.06			
WG240851LFB	LFB	02/26/08 17:28	WI070911-4	2		1.911	mg/L	95.6	90	110			
L67774-05DUP	DUP	02/26/08 17:35			.12	.119	mg/L				0.8	20	RA
L67684-01AS	AS	02/26/08 18:00	WI070911-4	2	1.82	3.684	mg/L	93.2	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
WG240851													
WG240851ICV	ICV	02/26/08 17:23	WI071212-1	.609		.623	mg/L	102.3	90	110			
WG240851ICB	ICB	02/26/08 17:25				U	mg/L		-0.03	0.03			
WG240851LFB	LFB	02/26/08 17:28	WI070911-4	1		.967	mg/L	96.7	90	110			
L67684-01AS	AS	02/26/08 17:31	WI070911-4	1	U	.969	mg/L	96.9	90	110			
L67774-05DUP	DUP	02/26/08 17:54			.12	.115	mg/L				4.3	20	

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240944													
WG240944ICV1	ICV	02/28/08 13:59	II080115-3	20		20.55	mg/L	102.8	95	105			
WG240944ICB	ICB	02/28/08 14:03				U	mg/L		-0.9	0.9			
WG240944LFB	LFB	02/28/08 14:19	II080214-5	99.76186		106.11	mg/L	106.4	85	115			
L67837-03AS	AS	02/28/08 15:50	II080214-5	99.76186	2.1	106.21	mg/L	104.4	85	115			
L67837-03ASD	ASD	02/28/08 15:54	II080214-5	99.76186	2.1	109.14	mg/L	107.3	85	115	2.72	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240937													
WG240937PBW	PBW	02/28/08 10:45				U	mg/L		-20	20			
WG240937LCSW	LCSW	02/28/08 10:46	PCN28838	260		292	mg/L	112.3	80	120			
L67837-05DUP	DUP	02/28/08 11:00			20	U	mg/L				200	20	RA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67837***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240944													
WG240944ICV1	ICV	02/28/08 13:59	II080115-3	100		101.56	mg/L	101.6	95	105			
WG240944ICB	ICB	02/28/08 14:03				U	mg/L		-0.9	0.9			
WG240944LFB	LFB	02/28/08 14:19	II080214-5	98.21624		103.41	mg/L	105.3	85	115			
L67837-03AS	AS	02/28/08 15:50	II080214-5	98.21624	25.5	123.85	mg/L	100.1	85	115			
L67837-03ASD	ASD	02/28/08 15:54	II080214-5	98.21624	25.5	126.72	mg/L	103.1	85	115	2.29	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240083													
WG240083ICV	ICV	02/07/08 16:57	WI080128-8	50.1		50.44	mg/L	100.7	90	110			
WG240083ICB	ICB	02/07/08 17:15				U	mg/L		-1.5	1.5			
WG240083ICV1	ICV	02/09/08 11:47	WI080128-8	50.1		51.13	mg/L	102.1	90	110			
WG240083ICB1	ICB	02/09/08 12:05				U	mg/L		-1.5	1.5			
WG240945													
WG240945ICV	ICV	02/28/08 17:58	WI080220-1	50.1		50.62	mg/L	101	90	110			
WG240945ICB	ICB	02/28/08 18:16				U	mg/L		-1.5	1.5			
WG240945LFB	LFB	02/28/08 18:34	WI080128-9	30		28.4	mg/L	94.7	90	110			
WG240945ICV1	ICV	02/29/08 19:07	WI080220-1	50.1		52.07	mg/L	103.9	90	110			
WG240945ICB1	ICB	02/29/08 19:25				U	mg/L		-1.5	1.5			
L67745-06AS	AS	02/29/08 20:02	WI080128-9	300	398	694	mg/L	98.7	90	110			
L67745-06DUP	DUP	02/29/08 20:20			398	398.4	mg/L				0.1	20	
WG240998													
WG240998ICV	ICV	02/29/08 21:50	WI080220-1	50.1		52.15	mg/L	104.1	90	110			
WG240998ICB	ICB	02/29/08 22:09				U	mg/L		-1.5	1.5			
WG240998LFB	LFB	02/29/08 22:27	WI080128-9	30		29.71	mg/L	99	90	110			
L67721-03DUP	DUP	02/29/08 23:03			39	37.6	mg/L				3.7	20	
L67837-02AS	AS	03/03/08 12:26	WI080128-9	150	90	238.9	mg/L	99.3	90	110			

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67837***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67837-01	WG241077	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).
	WG240851	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed 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).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
	WG240937	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).
L67837-02	WG240998	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).
	WG241077	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).
	WG240851	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed 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).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
	WG240937	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).
L67837-03	WG240998	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).
	WG241077	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).
	WG240851	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed 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).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
	WG240937	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).

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Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67837***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67837-04	WG240998	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).
	WG241077	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).
	WG240851	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed 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).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
	WG240937	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).
	WG240850	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).
L67837-05	WG240998	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).
	WG241077	Fluoride	SM4500F-C	DJ	Sample dilution required due to insufficient sample.
			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).
	WG240851	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed 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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
	WG240937	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).
	WG240850	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).

Hydro Geo Chem, Inc. ACZ Project ID: ***L67837***

Wet Chemistry

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

Lab Filtration	SM 3030 B
Lab Filtration & Acidification	SM 3030 B

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67837
Date Received: 2/25/2008
Received By:
Date Printed: 2/25/2008

Receipt Verification

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

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

Some Holddates are past.

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

The client was not contacted.

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
1840	12.1	15

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

Notes

Samples 4 & 5 have no times on containers or COC.

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67837
Date Received: 2/25/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67837-01	COB-MW-1		Y									
L67837-02	WARREN LAGOON-COB		Y									
L67837-03	COB-MW-2		Y									
L67837-04	DUP022208		Y									
L67837-05	FB022208		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: _____

ACZ Laboratories, Inc. L67837

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: (520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: 520) 293-1500 x112

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 [X] NO [ ]

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

PROJECT INFORMATION

Quote #: FMCQB-GW
Project/PO #: 872002.2
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca Na Mg K	TDS $SO_4^{=}$ NO_3^{-} Cl^{-} F^{-}	Alk					
COB-MW-1	2/22/08: 8:20	GW	3	x	x	x					
WARRENLAGOON-COB	2/22/08: 9:10	GW	3	x	x	x					
COB-MW-2	2/22/08: 10:00	GW	3	x	x	x					
DUP022208	2/22/08	GW	3	x	x	x					
FB022208	2/22/08	GW	1	x	x	x					

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	2/22/08: 1340		2-25-08 1128

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

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

Analytical Report

March 05, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L67817

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 22, 2008. This project has been assigned to ACZ's project number, L67817. 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 L67817. 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 April 05, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: LAWSONTVI236

ACZ Sample ID: ***L67817-01***
Date Sampled: *02/21/08 09:50*
Date Received: *02/22/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	41.9			mg/L	0.5	3	02/29/08 0:19	aml/ccp

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L67817***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240083													
WG240083ICV	ICV	02/07/08 16:57	WI080128-8	50.1		50.44	mg/L	100.7	90	110			
WG240083ICB	ICB	02/07/08 17:15				U	mg/L		-1.5	1.5			
WG240083ICV1	ICV	02/09/08 11:47	WI080128-8	50.1		51.13	mg/L	102.1	90	110			
WG240083ICB1	ICB	02/09/08 12:05				U	mg/L		-1.5	1.5			
WG240945													
WG240945ICV	ICV	02/28/08 17:58	WI080220-1	50.1		50.62	mg/L	101	90	110			
WG240945ICB	ICB	02/28/08 18:16				U	mg/L		-1.5	1.5			
WG240945LFB	LFB	02/28/08 18:34	WI080128-9	30		28.4	mg/L	94.7	90	110			
WG240945ICV1	ICV	02/29/08 19:07	WI080220-1	50.1		52.07	mg/L	103.9	90	110			
WG240945ICB1	ICB	02/29/08 19:25				U	mg/L		-1.5	1.5			
L67745-06AS	AS	02/29/08 20:02	WI080128-9	300	398	694	mg/L	98.7	90	110			
L67745-06DUP	DUP	02/29/08 20:20			398	398.4	mg/L				0.1	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67817***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67817***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67817
Date Received: 2/22/2008
Received By:
Date Printed: 2/22/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) 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 (℃)	Rad (µR/hr)
NA5542	1.1	15

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67817
Date Received: 2/22/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67817-01	LAWSONTVI									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. L67817

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro GeoChem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd
Tucson, AZ 85705
Telephone: 520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: Jimn@hgcinc.com/HGC Inc.
E-mail: Jimn@hgcinc.com
Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: Jimn@hgcinc.com
Address: 51 W. Wetmore Rd.
Tucson, AZ 85705
Telephone: 520) 293-1500

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

PROJECT INFORMATION

Quote #: 504-IC
Project/PO #: 872001.0
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? NO

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers		SO_4^-						
~~GOAR MA.~~											
LAWSONTVI	2/21/08 : 0950	GW	1		X						

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	2/21/08:1624	2:22-08	9:45

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

Analytical Report

March 13, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L67989

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 05, 2008. This project has been assigned to ACZ's project number, L67989. 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 L67989. 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 April 13, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Sue Webber has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: COOPER C

ACZ Sample ID: ***L67989-01***
Date Sampled: *03/04/08 09:00*
Date Received: *03/05/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	880			mg/L	10	50	03/10/08 20:31	aml

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L67989***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241250													
WG241250ICV	ICV	03/07/08 13:17	WI080220-1	50.1		51.6	mg/L	103	90	110			
WG241250ICB	ICB	03/07/08 13:35				U	mg/L		-1.5	1.5			
WG241250LFB	LFB	03/07/08 13:53	WI080306-2	30		30.95	mg/L	103.2	90	110			
WG241250ICV1	ICV	03/10/08 15:05	WI080220-1	50.1		50.62	mg/L	101	90	110			
WG241250ICB1	ICB	03/10/08 15:23				.77	mg/L		-1.5	1.5			
L67881-01AS	AS	03/10/08 17:12	WI080306-2	30	13.9	43.35	mg/L	98.2	90	110			
L67881-01DUP	DUP	03/10/08 17:30			13.9	13.79	mg/L				0.8	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67989***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67989***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67989
Date Received: 3/5/2008
Received By:
Date Printed: 3/5/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
NA5594	3.2	16

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67989
Date Received: 3/5/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67989-01	COOPER C									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: _____

L67989

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson	Address: 51 W. Wetmore Rd
Company: Hydro Geo Chem Inc.	Tucson, AZ 85705
E-mail: dans@hgcinc.com	Telephone: 520) 293-1500 x173

Copy of Report to:

Name: Jim Norris	E-mail: Jimn@hgcinc.com
Company: HGC Inc.	Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris	Address: 51 W. Wetmore Rd
Company: HGC Inc.	Tucson, AZ 85705
E-mail: Jimn@hgcinc.com	Telephone: 520) 293-1500 x112

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 [X] NO [ ]

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

PROJECT INFORMATION

Quote #: 504-IC

Project/PO #: 872001.0

Reporting state for compliance testing: AZ

Sampler's Name: Mark Arneson

Are any samples NRC licensable material? N/O

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	1 504								
COOPER C	3/4/08: 9:00	GW	1	X								

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

REMARKS

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3/4/08: 1630	WPL	3-5-08 11:05

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

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

Analytical Report

March 12, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L68039

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 07, 2008. This project has been assigned to ACZ's project number, L68039. 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 L68039. 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 April 12, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Sue Webber has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: CHAMBERS

ACZ Sample ID: ***L68039-01***
Date Sampled: *03/06/08 09:50*
Date Received: *03/07/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	7.7			mg/L	0.5	3	03/11/08 21:29	aml/ccp

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: DUP030608

ACZ Sample ID: ***L68039-02***
Date Sampled: *03/06/08 00:00*
Date Received: *03/07/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	7.7			mg/L	0.5	3	03/11/08 21:47	aml/ccp

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: FB030608

ACZ Sample ID: ***L68039-03***
Date Sampled: *03/06/08 00:00*
Date Received: *03/07/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	0.9	B		mg/L	0.5	3	03/11/08 22:05	aml/ccp

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L68039***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	50.1		51.43	mg/L	102.7	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		32.41	mg/L	108	90	110			
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	50.1		50.87	mg/L	101.5	90	110			
WG241326ICB1	ICB	03/11/08 16:39				.91	mg/L		-1.5	1.5			
L68017-03AS	AS	03/11/08 18:28	WI080306-2	150	76	219.8	mg/L	95.9	90	110			
L68017-03DUP	DUP	03/11/08 18:46			76	73.7	mg/L				3.1	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68039***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68039***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68039
Date Received: 3/7/2008
Received By:
Date Printed: 3/7/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) 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 (℃)	Rad (µR/hr)
NA5609	2	17

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68039
Date Received: 3/7/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68039-01	CHAMBERS									X		
L68039-02	DUP030608									X		
L68039-03	FB030608									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. L68039

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: 520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Address: 51 W. Wetmore Rd. Tucson, AZ 85705
Telephone: 520) 293-1500 x112

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

PROJECT INFORMATION

Quote #: 504-IC
Project/PO #: 872001.0
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO_4^-
CHAMBERS	3/6/08 : 9:50	GW	1	X
DUP030608	3/6/08	GW	1	X
FB030608	3/6/08	GW	1	X

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3/6/08 : 1500	MB	3.7.08 10:03

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

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

Analytical Report

March 20, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L68038

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 07, 2008. This project has been assigned to ACZ's project number, L68038. 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 L68038. 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 April 20, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: TM-19A

ACZ Sample ID: ***L68038-01***
Date Sampled: *03/06/08 11:40*
Date Received: *03/07/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	37.9			mg/L	0.2	1	03/11/08 10:58	aeh/wfg
Magnesium, dissolved	M200.7 ICP	11.6			mg/L	0.2	1	03/11/08 10:58	aeh/wfg
Potassium, dissolved	M200.7 ICP	3.0		*	mg/L	0.3	2	03/11/08 10:58	aeh/wfg
Sodium, dissolved	M200.7 ICP	57.7			mg/L	0.3	2	03/11/08 10:58	aeh/wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		119			mg/L	2	20	03/12/08 0:00	cas
Carbonate as CaCO3		19	B		mg/L	2	20	03/12/08 0:00	cas
Hydroxide as CaCO3			U		mg/L	2	20	03/12/08 0:00	cas
Total Alkalinity		138		*	mg/L	2	20	03/12/08 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		11.3			%			03/20/08 0:00	calc
Sum of Anions		4.3			meq/L	0.1	0.5	03/20/08 0:00	calc
Sum of Cations		5.4			meq/L	0.1	0.5	03/20/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	15.4			mg/L	0.5	3	03/11/08 21:11	aml/ccp
Fluoride	M300.0 - Ion Chromatography	0.1	B	*	mg/L	0.1	0.5	03/11/08 21:11	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.26			mg/L	0.02	0.1	03/20/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.26			mg/L	0.02	0.1	03/07/08 19:13	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	03/07/08 19:13	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	280			mg/L	10	20	03/13/08 13:32	cas
Sulfate	300.0 - Ion Chromatography	56.1			mg/L	0.5	3	03/11/08 21:11	aml/ccp
TDS (calculated)	Calculation	273			mg/L	10	50	03/20/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.03						03/20/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: TM-7

ACZ Sample ID: ***L68038-02***
Date Sampled: *03/06/08 13:50*
Date Received: *03/07/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	49.0			mg/L	0.2	1	03/11/08 11:01	aeh/wfg
Magnesium, dissolved	M200.7 ICP	15.8		*	mg/L	0.2	1	03/11/08 11:01	aeh/wfg
Potassium, dissolved	M200.7 ICP	2.0		*	mg/L	0.3	2	03/11/08 11:01	aeh/wfg
Sodium, dissolved	M200.7 ICP	22.6		*	mg/L	0.3	2	03/11/08 11:01	aeh/wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		133			mg/L	2	20	03/12/08 0:00	cas
Carbonate as CaCO3		9	B		mg/L	2	20	03/12/08 0:00	cas
Hydroxide as CaCO3			U		mg/L	2	20	03/12/08 0:00	cas
Total Alkalinity		142		*	mg/L	2	20	03/12/08 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		11.9			%			03/20/08 0:00	calc
Sum of Anions		3.7			meq/L	0.1	0.5	03/20/08 0:00	calc
Sum of Cations		4.7			meq/L	0.1	0.5	03/20/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	9.0			mg/L	0.5	3	03/12/08 2:19	aml/ccp
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	03/12/08 2:19	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.04			mg/L	0.02	0.1	03/20/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.04			mg/L	0.02	0.1	03/07/08 19:19	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	03/07/08 19:19	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	220			mg/L	10	20	03/13/08 13:33	cas
Sulfate	300.0 - Ion Chromatography	22.5			mg/L	0.5	3	03/12/08 2:19	aml/ccp
TDS (calculated)	Calculation	223			mg/L	10	50	03/20/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	0.99						03/20/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68038***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241427													
WG241427PBW1	PBW	03/12/08 16:53				28.1	mg/L		-20	20			B4
WG241427LCSW2	LCSW	03/12/08 17:03	WC080131-1	820		807.2	mg/L	98.4	90	110			
L68041-08DUP	DUP	03/12/08 19:14			89	100.9	mg/L				12.5	20	
WG241427PBW2	PBW	03/12/08 19:19				20.7	mg/L		-20	20			B4
WG241427LCSW5	LCSW	03/12/08 19:30	WC080131-1	820		797.4	mg/L	97.2	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		97.33	mg/L	97.3	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.6	0.6			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	67.97008		73.52	mg/L	108.2	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	67.97008	225	283.12	mg/L	85.5	85	115			
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	67.97008	225	286.85	mg/L	91	85	115	1.31	20	
L68038-02AS	AS	03/11/08 11:04	II080307-6	67.97008	49	123.78	mg/L	110	85	115			
L68038-02ASD	ASD	03/11/08 11:07	II080307-6	67.97008	49	126.88	mg/L	114.6	85	115	2.47	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	19.98		20.34	mg/L	101.8	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		31.43	mg/L	104.8	90	110			
L68017-03AS	AS	03/11/08 2:52	WI080306-2	30	9.3	37.31	mg/L	93.4	90	110			
L68017-03DUP	DUP	03/11/08 3:10			9.3	9.25	mg/L				0.5	20	
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	19.98		20.24	mg/L	101.3	90	110			
WG241326ICB1	ICB	03/11/08 16:39				U	mg/L		-1.5	1.5			
WG241373													
WG241373ICV	ICV	03/11/08 23:00	WI080220-1	19.98		20.35	mg/L	101.9	90	110			
WG241373ICB	ICB	03/11/08 23:18				U	mg/L		-1.5	1.5			
WG241373LFB	LFB	03/11/08 23:36	WI080306-2	30		28.34	mg/L	94.5	90	110			
L67956-01AS	AS	03/12/08 0:30	WI080306-2	30	26.9	54.66	mg/L	92.5	90	110			
L67956-01DUP	DUP	03/12/08 0:48			26.9	26.83	mg/L				0.3	20	
WG241373ICV1	ICV	03/12/08 15:51	WI080220-1	19.98		20.29	mg/L	101.6	90	110			
WG241373ICB1	ICB	03/12/08 16:09				U	mg/L		-1.5	1.5			

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68038***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	4		4.02	mg/L	100.5	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-0.3	0.3			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	1.5		1.57	mg/L	104.7	90	110			
L68017-03AS	AS	03/11/08 2:52	WI080306-2	1.5	U	1.16	mg/L	77.3	90	110			M2
L68017-03DUP	DUP	03/11/08 3:10			U	U	mg/L				0	20	RA
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	4		3.92	mg/L	98	90	110			
WG241326ICB1	ICB	03/11/08 16:39				U	mg/L		-0.3	0.3			
WG241373													
WG241373ICV	ICV	03/11/08 23:00	WI080220-1	4		4.03	mg/L	100.8	90	110			
WG241373ICB	ICB	03/11/08 23:18				U	mg/L		-0.3	0.3			
WG241373LFB	LFB	03/11/08 23:36	WI080306-2	1.5		1.39	mg/L	92.7	90	110			
L67956-01AS	AS	03/12/08 0:30	WI080306-2	1.5	.2	1.55	mg/L	90	90	110			
L67956-01DUP	DUP	03/12/08 0:48			.2	.23	mg/L				14	20	RA
WG241373ICV1	ICV	03/12/08 15:51	WI080220-1	4		3.94	mg/L	98.5	90	110			
WG241373ICB1	ICB	03/12/08 16:09				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
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		100.15	mg/L	100.2	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.6	0.6			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	49.96908		55.13	mg/L	110.3	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	49.96908	51.7	105.65	mg/L	108	85	115			
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	49.96908	51.7	105.46	mg/L	107.6	85	115	0.18	20	
L68038-02AS	AS	03/11/08 11:04	II080307-6	49.96908	15.8	72.5	mg/L	113.5	85	115			
L68038-02ASD	ASD	03/11/08 11:07	II080307-6	49.96908	15.8	73.87	mg/L	116.2	85	115	1.87	20	MA

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
WG241286													
WG241286ICV	ICV	03/07/08 19:01	WI071212-1	2.416		2.25	mg/L	93.1	90	110			
WG241286ICB	ICB	03/07/08 19:03				U	mg/L		-0.06	0.06			
WG241286LFB	LFB	03/07/08 19:06	WI070911-4	2		1.976	mg/L	98.8	90	110			
L68036-01AS	AS	03/07/08 19:12	WI070911-4	2	.37	2.396	mg/L	101.3	90	110			
L68038-01DUP	DUP	03/07/08 19:15			.26	.253	mg/L				2.7	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
WG241286													
WG241286ICV	ICV	03/07/08 19:01	WI071212-1	.609		.583	mg/L	95.7	90	110			
WG241286ICB	ICB	03/07/08 19:03				U	mg/L		-0.03	0.03			
WG241286LFB	LFB	03/07/08 19:06	WI070911-4	1		1.003	mg/L	100.3	90	110			
L68036-01AS	AS	03/07/08 19:12	WI070911-4	1		1.045	mg/L	104.5	90	110			
L68038-01DUP	DUP	03/07/08 19:15			U	U	mg/L				0	20	RA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68038***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	20		20.4	mg/L	102	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.9	0.9			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	99.76186		112.02	mg/L	112.3	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	99.76186	13.4	129.03	mg/L	115.9	85	115			MA
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	99.76186	13.4	127.97	mg/L	114.8	85	115	0.82	20	
L68038-02AS	AS	03/11/08 11:04	II080307-6	99.76186	2	118.84	mg/L	117.1	85	115			M1
L68038-02ASD	ASD	03/11/08 11:07	II080307-6	99.76186	2	119.55	mg/L	117.8	85	115	0.6	20	M1

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241499													
WG241499PBW	PBW	03/13/08 13:30				U	mg/L		-20	20			
WG241499LCSW	LCSW	03/13/08 13:31	PCN28837	260		282	mg/L	108.5	80	120			
L68055-01DUP	DUP	03/13/08 13:45			3160	3076	mg/L				2.7	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		101.49	mg/L	101.5	95	105			
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		99.2	mg/L	99.2	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-6	6			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.9	0.9			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	98.21624		107.4	mg/L	109.4	85	115			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	98.21624		109.7	mg/L	111.7	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	98.21624	30.7	142.67	mg/L	114	85	115			
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	98.21624	30.7	141.24	mg/L	112.5	85	115	1.01	20	
L68038-02AS	AS	03/11/08 11:04	II080307-6	98.21624	22.6	135.87	mg/L	115.3	85	115			
L68038-02ASD	ASD	03/11/08 11:07	II080307-6	98.21624	22.6	137.09	mg/L	116.6	85	115	0.89	20	MA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68038***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	50.1		51.43	mg/L	102.7	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		32.41	mg/L	108	90	110			
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	50.1		50.87	mg/L	101.5	90	110			
WG241326ICB1	ICB	03/11/08 16:39				.91	mg/L		-1.5	1.5			
L68017-03AS	AS	03/11/08 18:28	WI080306-2	150	76	219.8	mg/L	95.9	90	110			
L68017-03DUP	DUP	03/11/08 18:46			76	73.7	mg/L				3.1	20	
WG241373													
WG241373ICV	ICV	03/11/08 23:00	WI080220-1	50.1		51.34	mg/L	102.5	90	110			
WG241373ICB	ICB	03/11/08 23:18				.93	mg/L		-1.5	1.5			
WG241373LFB	LFB	03/11/08 23:36	WI080306-2	30		29.1	mg/L	97	90	110			
WG241373ICV1	ICV	03/12/08 15:51	WI080220-1	50.1		51.49	mg/L	102.8	90	110			
WG241373ICB1	ICB	03/12/08 16:09				.92	mg/L		-1.5	1.5			
WG241373LFB	LFB	03/12/08 16:27	WI080306-2	30		31.99	mg/L	106.6	90	110			
L67956-01AS	AS	03/12/08 17:03	WI080306-2	600	890	1520	mg/L	105	90	110			
L67956-01DUP	DUP	03/12/08 17:21			890	882	mg/L				0.9	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68038***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L68038-01	WG241325	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.
	WG241326	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG241286	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).
	WG241427	Total Alkalinity	SM2320B - Titration	B4	Target analyte detected in blank at or above the acceptance criteria.
L68038-02	WG241325	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	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
		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.
	WG241373	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).
	WG241286	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).
	WG241427	Total Alkalinity	SM2320B - Titration	B4	Target analyte detected in blank at or above the acceptance criteria.

ACZ Laboratories, Inc.
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Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68038***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L68038
Date Received: 3/7/2008
Received By:
Date Printed: 3/7/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?			
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 (℃)	Rad (µR/hr)
NA5609	2	17

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L68038
Date Received: 3/7/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68038-01	TM-19A		Y									
L68038-02	TM-7		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: _____

ACZ Laboratories, Inc. L68038

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: 520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC Inc.
E-mail: Jimn@hgcinc.com
Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: Jimn@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: (520) 293-1500 x112

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 [X] NO [ ]

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

PROJECT INFORMATION

Quote #: FMCQB-GW
Project/PO #: 8720022
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Mg Ca Na K	TDS $SO_4^{=}$ NO_2^- NO_3^- Cl^- F^-	Alk					
TM-19A	3/6/08 : 1140	GW		X	X	X					
TM-7	3/6/08 : 1350	GW		X	X	X					

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3/6/08 : 1500	MSS	3-7-08 10:03

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

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

Analytical Report

March 12, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L68020

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 06, 2008. This project has been assigned to ACZ's project number, L68020. 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 L68020. 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 April 12, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Sue Webber has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: HOWARD

ACZ Sample ID: ***L68020-01***
Date Sampled: *03/04/08 18:10*
Date Received: *03/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	571			mg/L	5	30	03/11/08 20:35	aml/ccp

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: METZLER

ACZ Sample ID: ***L68020-02***
Date Sampled: *03/05/08 10:10*
Date Received: *03/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	317			mg/L	5	30	03/11/08 20:53	aml/ccp

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L68020***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	50.1		51.43	mg/L	102.7	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		32.41	mg/L	108	90	110			
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	50.1		50.87	mg/L	101.5	90	110			
WG241326ICB1	ICB	03/11/08 16:39				.91	mg/L		-1.5	1.5			
L68017-03AS	AS	03/11/08 18:28	WI080306-2	150	76	219.8	mg/L	95.9	90	110			
L68017-03DUP	DUP	03/11/08 18:46			76	73.7	mg/L				3.1	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68020***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68020***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68020
Date Received: 3/6/2008
Received By:
Date Printed: 3/6/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
2111	1.6	14

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68020
Date Received: 3/6/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68020-01	HOWARD									X		
L68020-02	METZLER									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: _____

L68020

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro GeoChem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd
Tucson, AZ 85705
Telephone: 520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC Inc.
E-mail: Jimn@hgcinc.com
Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc
E-mail: Jimn@hgcinc.com
Address: 51 W. Wetmore Rd
Tucson, AZ 85705
Telephone: 520) 293-1500 x112

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?
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.

YES: X
NO:

PROJECT INFORMATION

Quote #: SO4-TC
Project/PO #: 872001.0
Reporting state for compliance testing: AZ
Sampler's Name: [redacted]
Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO4
HOWARD	3/4/08: 1810	GW	1	X
METZLER	3/5/08: 1010	GW	1	X

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

REMARKS

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[redacted]	3/5/08: 1610	WL	3-6-08 10:41

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

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

Analytical Report

March 21, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L68019

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 06, 2008. This project has been assigned to ACZ's project number, L68019. 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 L68019. 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 April 21, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: TM-16

ACZ Sample ID: ***L68019-01***
Date Sampled: *03/05/08 13:20*
Date Received: *03/06/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	225			mg/L	0.2	1	03/11/08 10:15	aeh/wfg
Magnesium, dissolved	M200.7 ICP	51.7			mg/L	0.2	1	03/11/08 10:15	aeh/wfg
Potassium, dissolved	M200.7 ICP	13.4		*	mg/L	0.3	2	03/11/08 10:15	aeh/wfg
Sodium, dissolved	M200.7 ICP	30.7			mg/L	0.3	2	03/11/08 10:15	aeh/wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		205			mg/L	2	20	03/07/08 0:00	ear/cas
Carbonate as CaCO3			U		mg/L	2	20	03/07/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	03/07/08 0:00	ear/cas
Total Alkalinity		205			mg/L	2	20	03/07/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.2			%			03/21/08 0:00	calc
Sum of Anions		15.8			meq/L	0.1	0.5	03/21/08 0:00	calc
Sum of Cations		17.2			meq/L	0.1	0.5	03/21/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	28.9			mg/L	0.5	3	03/11/08 3:46	aml/ccp
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	03/11/08 3:46	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	6.8			mg/L	0.1	0.5	03/21/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	6.9			mg/L	0.1	0.5	03/06/08 18:54	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.01	B	*	mg/L	0.01	0.05	03/06/08 18:38	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1030			mg/L	10	20	03/11/08 14:14	ear
Sulfate	300.0 - Ion Chromatography	497			mg/L	5	30	03/11/08 19:22	aml/ccp
TDS (calculated)	Calculation	1000			mg/L	10	50	03/21/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.03						03/21/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: TM-42

ACZ Sample ID: ***L68019-02***
Date Sampled: *03/05/08 14:40*
Date Received: *03/06/08*
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	03/13/08 12:49	aeh/erf
Magnesium, dissolved	M200.7 ICP	55.8			mg/L	0.2	1	03/13/08 12:49	aeh/erf
Potassium, dissolved	M200.7 ICP	10.4			mg/L	0.3	2	03/13/08 12:49	aeh/erf
Sodium, dissolved	M200.7 ICP	37.9			mg/L	0.3	2	03/13/08 12:49	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		186			mg/L	2	20	03/07/08 0:00	ear/cas
Carbonate as CaCO3			U		mg/L	2	20	03/07/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	03/07/08 0:00	ear/cas
Total Alkalinity		186			mg/L	2	20	03/07/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.3			%			03/21/08 0:00	calc
Sum of Anions		15.1			meq/L	0.1	0.5	03/21/08 0:00	calc
Sum of Cations		15.8			meq/L	0.1	0.5	03/21/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	27.0			mg/L	0.5	3	03/17/08 15:20	aml
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	03/11/08 4:04	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	6.55			mg/L	0.06	0.3	03/21/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	6.55			mg/L	0.06	0.3	03/06/08 18:56	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	03/06/08 18:41	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	980			mg/L	10	20	03/11/08 14:16	ear
Sulfate	300.0 - Ion Chromatography	482			mg/L	5	30	03/19/08 18:37	aml
TDS (calculated)	Calculation	939			mg/L	10	50	03/21/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.04						03/21/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68019***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241225													
WG241225PBW2	PBW	03/06/08 19:30				U	mg/L		-20	20			
WG241225LCSW5	LCSW	03/06/08 19:43	WC080131-1	820		840.2	mg/L	102.5	90	110			
WG241225PBW3	PBW	03/06/08 22:18				U	mg/L		-20	20			
WG241225LCSW8	LCSW	03/06/08 22:31	WC080131-1	820		827	mg/L	100.9	90	110			
L68019-02DUP	DUP	03/07/08 2:21			186	177.6	mg/L				4.6	20	
WG241225LCSW11	LCSW	03/07/08 2:33	WC080131-1	820		777.3	mg/L	94.8	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		97.33	mg/L	97.3	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.6	0.6			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	67.97008		73.52	mg/L	108.2	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	67.97008	225	283.12	mg/L	85.5	85	115			
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	67.97008	225	286.85	mg/L	91	85	115	1.31	20	
WG241493													
WG241493ICV	ICV	03/13/08 12:29	II080115-3	100		101.12	mg/L	101.1	95	105			
WG241493ICB	ICB	03/13/08 12:33				U	mg/L		-0.6	0.6			
WG241493LFB	LFB	03/13/08 12:46	II080312-2	67.97008		68.03	mg/L	100.1	85	115			
L68060-01AS	AS	03/13/08 12:59	II080312-2	67.97008	42.9	109.4	mg/L	97.8	85	115			
L68060-01ASD	ASD	03/13/08 13:02	II080312-2	67.97008	42.9	109.14	mg/L	97.5	85	115	0.24	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	19.98		20.34	mg/L	101.8	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		31.43	mg/L	104.8	90	110			
L68017-03AS	AS	03/11/08 2:52	WI080306-2	30	18.6	37.31	mg/L	93.4	90	110			
L68017-03DUP	DUP	03/11/08 3:10			18.6	9.25	mg/L				0.5	20	
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	19.98		20.24	mg/L	101.3	90	110			
WG241326ICB1	ICB	03/11/08 16:39				U	mg/L		-1.5	1.5			
WG241583													
WG241583ICV	ICV	03/17/08 14:08	WI080220-1	19.98		18.97	mg/L	94.9	90	110			
WG241583ICB	ICB	03/17/08 14:26				U	mg/L		-1.5	1.5			
WG241583LFB	LFB	03/17/08 14:44	WI080306-2	30		28.26	mg/L	94.2	90	110			
L68019-02AS	AS	03/17/08 15:38	WI080306-2	30	27	54.45	mg/L	91.5	90	110			
L68019-02DUP	DUP	03/17/08 15:56			27	27.19	mg/L				0.7	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68019***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	4		4.02	mg/L	100.5	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-0.3	0.3			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	1.5		1.57	mg/L	104.7	90	110			
L68017-03AS	AS	03/11/08 2:52	WI080306-2	1.5	U	1.16	mg/L	77.3	90	110			M2
L68017-03DUP	DUP	03/11/08 3:10			U	U	mg/L				0	20	RA
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	4		3.92	mg/L	98	90	110			
WG241326ICB1	ICB	03/11/08 16:39				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
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		100.15	mg/L	100.2	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.6	0.6			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	49.96908		55.13	mg/L	110.3	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	49.96908	51.7	105.65	mg/L	108	85	115			
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	49.96908	51.7	105.46	mg/L	107.6	85	115	0.18	20	
WG241493													
WG241493ICV	ICV	03/13/08 12:29	II080115-3	100		102.8	mg/L	102.8	95	105			
WG241493ICB	ICB	03/13/08 12:33				U	mg/L		-0.6	0.6			
WG241493LFB	LFB	03/13/08 12:46	II080312-2	49.96908		50.63	mg/L	101.3	85	115			
L68060-01AS	AS	03/13/08 12:59	II080312-2	49.96908	1.3	54.23	mg/L	105.9	85	115			
L68060-01ASD	ASD	03/13/08 13:02	II080312-2	49.96908	1.3	53.93	mg/L	105.3	85	115	0.55	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
WG241233													
WG241233ICV	ICV	03/06/08 18:13	WI071212-1	2.416		2.294	mg/L	95	90	110			
WG241233ICB	ICB	03/06/08 18:14				U	mg/L		-0.06	0.06			
WG241233LFB	LFB	03/06/08 18:18	WI070911-4	2		1.997	mg/L	99.9	90	110			
L68019-01AS	AS	03/06/08 18:55	WI070911-4	10	6.9	17.3	mg/L	104	90	110			
L68019-02DUP	DUP	03/06/08 18:58			6.55	6.555	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
WG241233													
WG241233ICV	ICV	03/06/08 18:13	WI071212-1	.609		.6	mg/L	98.5	90	110			
WG241233ICB	ICB	03/06/08 18:14				.011	mg/L		-0.03	0.03			
WG241233LFB	LFB	03/06/08 18:18	WI070911-4	1		.997	mg/L	99.7	90	110			
L68019-01AS	AS	03/06/08 18:40	WI070911-4	1	.01	1.008	mg/L	99.8	90	110			
L68019-02DUP	DUP	03/06/08 18:42			U	U	mg/L				0	20	RA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68019***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	20		20.4	mg/L	102	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.9	0.9			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	99.76186		112.02	mg/L	112.3	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	99.76186	13.4	129.03	mg/L	115.9	85	115			MA
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	99.76186	13.4	127.97	mg/L	114.8	85	115	0.82	20	
WG241493													
WG241493ICV	ICV	03/13/08 12:29	II080115-3	20		21.06	mg/L	105.3	95	105			
WG241493ICB	ICB	03/13/08 12:33				U	mg/L		-0.9	0.9			
WG241493LFB	LFB	03/13/08 12:46	II080312-2	99.76186		102.69	mg/L	102.9	85	115			
L68060-01AS	AS	03/13/08 12:59	II080312-2	99.76186	.4	108.65	mg/L	108.5	85	115			
L68060-01ASD	ASD	03/13/08 13:02	II080312-2	99.76186	.4	108.22	mg/L	108.1	85	115	0.4	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241381													
WG241381PBW	PBW	03/11/08 14:05				U	mg/L		-20	20			
WG241381LCSW	LCSW	03/11/08 14:07	PCN28837	260		294	mg/L	113.1	80	120			
L68037-02DUP	DUP	03/11/08 14:33			120	130	mg/L				8	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241325													
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		101.49	mg/L	101.5	95	105			
WG241325ICV	ICV	03/11/08 9:55	II080115-3	100		99.2	mg/L	99.2	95	105			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-0.9	0.9			
WG241325ICB	ICB	03/11/08 9:58				U	mg/L		-6	6			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	98.21624		107.4	mg/L	109.4	85	115			
WG241325LFB	LFB	03/11/08 10:12	II080307-6	98.21624		109.7	mg/L	111.7	85	115			
L68019-01AS	AS	03/11/08 10:18	II080307-6	98.21624	30.7	142.67	mg/L	114	85	115			
L68019-01ASD	ASD	03/11/08 10:21	II080307-6	98.21624	30.7	141.24	mg/L	112.5	85	115	1.01	20	
WG241493													
WG241493ICV	ICV	03/13/08 12:29	II080115-3	100		101.8	mg/L	101.8	95	105			
WG241493ICV	ICV	03/13/08 12:29	II080115-3	100		103.93	mg/L	103.9	95	105			
WG241493ICB	ICB	03/13/08 12:33				U	mg/L		-6	6			
WG241493ICB	ICB	03/13/08 12:33				U	mg/L		-0.9	0.9			
WG241493LFB	LFB	03/13/08 12:46	II080312-2	98.21624		98.3	mg/L	100.1	85	115			
WG241493LFB	LFB	03/13/08 12:46	II080312-2	98.21624		101.01	mg/L	102.8	85	115			
L68060-01AS	AS	03/13/08 12:59	II080312-2	98.21624	16.2	120.51	mg/L	106.2	85	115			
L68060-01ASD	ASD	03/13/08 13:02	II080312-2	98.21624	16.2	119.25	mg/L	104.9	85	115	1.05	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68019***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	50.1		51.43	mg/L	102.7	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		32.41	mg/L	108	90	110			
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	50.1		50.87	mg/L	101.5	90	110			
WG241326ICB1	ICB	03/11/08 16:39				.91	mg/L		-1.5	1.5			
L68017-03AS	AS	03/11/08 18:28	WI080306-2	150	152	219.8	mg/L	95.9	90	110			
L68017-03DUP	DUP	03/11/08 18:46			152	73.7	mg/L				3.1	20	
WG241583													
WG241583ICV1	ICV	03/19/08 17:24	WI080220-1	50.1		50.2	mg/L	100.2	90	110			
WG241583ICB1	ICB	03/19/08 17:43				U	mg/L		-1.5	1.5			
WG241583LFB2	LFB	03/19/08 18:01	WI080306-2	30		29.95	mg/L	99.8	90	110			
L68019-02AS	AS	03/19/08 18:55	WI080306-2	300	482	771.9	mg/L	96.6	90	110			
L68019-02DUP	DUP	03/19/08 19:13			482	453.5	mg/L				6.1	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68019***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L68019-01	WG241325	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.
	WG241326	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG241233	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).
L68019-02	WG241326	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG241233	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).

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Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68019***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L68019
Date Received: 3/6/2008
Received By:
Date Printed: 3/6/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
2111	1.6	14

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L68019
Date Received: 3/6/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68019-01	TM-16		Y									
L68019-02	TM-42		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: _____

L68019

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson	Address: 51 W. Wetmore Rd
Company: Hydro GeoChem Inc.	Tucson, AZ 85705
E-mail: dans@hgcinc.com	Telephone: 520) 293-1500 x133

Copy of Report to:

Name: Jim Norris	E-mail: jimn@hgcinc.com
Company: HGC Inc.	Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris	Address: 51 W. Wetmore Rd
Company: HGC Inc.	Tucson, AZ 85705
E-mail: jimn@hgcinc.com	Telephone: 520) 293-1500 x112

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: X NO:

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

PROJECT INFORMATION

Quote #: FMCQB-GW

Project/PO #: 872002.2

Reporting state for compliance testing: AZ

Sampler's Name: [redacted]

Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Mg Na Ca K	TDS $SO_4^{=}$ NO_3^- Cl^- F	Alk					
TM-16	[redacted] : 1320	GW	3	X	X	X					
TM-42	[redacted] : 1440	GW	3	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

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	3/5/08: 1610	WSPL	3-6-08 10:41

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

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

Analytical Report

March 13, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L67990

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 05, 2008. This project has been assigned to ACZ's project number, L67990. 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 L67990. 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 April 13, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Sue Webber has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: BF-1

ACZ Sample ID: ***L67990-01***
Date Sampled: *03/04/08 13:10*
Date Received: *03/05/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	621			mg/L	0.2	1	03/06/08 18:31	aeh/erf
Magnesium, dissolved	M200.7 ICP	100			mg/L	0.2	1	03/06/08 18:31	aeh/erf
Potassium, dissolved	M200.7 ICP	4.5			mg/L	0.3	2	03/06/08 18:31	aeh/erf
Sodium, dissolved	M200.7 ICP	60.2			mg/L	0.3	2	03/06/08 18:31	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		610			mg/L	2	20	03/06/08 0:00	ear/cas
Carbonate as CaCO3			U		mg/L	2	20	03/06/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	03/06/08 0:00	ear/cas
Total Alkalinity		610		*	mg/L	2	20	03/06/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.4			%			03/12/08 0:00	calc
Sum of Anions		40.8			meq/L	0.1	0.5	03/12/08 0:00	calc
Sum of Cations		42.0			meq/L	0.1	0.5	03/12/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	30.4			mg/L	0.5	3	03/11/08 0:27	aml/ccp
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	03/11/08 0:27	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.92			mg/L	0.02	0.1	03/12/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.92			mg/L	0.02	0.1	03/05/08 19:40	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	03/05/08 19:40	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	2850			mg/L	10	20	03/07/08 9:19	cas
Sulfate	300.0 - Ion Chromatography	1320			mg/L	30	100	03/11/08 17:15	aml/ccp
TDS (calculated)	Calculation	2510			mg/L	10	50	03/12/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.14						03/12/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: GL-3

ACZ Sample ID: ***L67990-02***
Date Sampled: *03/04/08 11:55*
Date Received: *03/05/08*
Sample Matrix: *Ground Water*

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	03/06/08 18:35	aeh/erf
Magnesium, dissolved	M200.7 ICP	22.8			mg/L	0.2	1	03/06/08 18:35	aeh/erf
Potassium, dissolved	M200.7 ICP	2.6			mg/L	0.3	2	03/06/08 18:35	aeh/erf
Sodium, dissolved	M200.7 ICP	18.7			mg/L	0.3	2	03/06/08 18:35	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		192			mg/L	2	20	03/06/08 0:00	ear/cas
Carbonate as CaCO3			U		mg/L	2	20	03/06/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	03/06/08 0:00	ear/cas
Total Alkalinity		192		*	mg/L	2	20	03/06/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.0			%			03/12/08 0:00	calc
Sum of Anions		4.8			meq/L	0.1	0.5	03/12/08 0:00	calc
Sum of Cations		5.1			meq/L	0.1	0.5	03/12/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	20.3			mg/L	0.5	3	03/11/08 0:45	aml/ccp
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	03/11/08 0:45	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	0.75			mg/L	0.02	0.1	03/12/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.77			mg/L	0.02	0.1	03/05/08 19:42	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.02	B	*	mg/L	0.01	0.05	03/05/08 19:42	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	260			mg/L	10	20	03/07/08 9:20	cas
Sulfate	300.0 - Ion Chromatography	20.3			mg/L	0.5	3	03/11/08 0:45	aml/ccp
TDS (calculated)	Calculation	250			mg/L	10	50	03/12/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.04						03/12/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: TM-2A

ACZ Sample ID: ***L67990-03***
Date Sampled: *03/04/08 14:25*
Date Received: *03/05/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	12.6			mg/L	0.2	1	03/06/08 18:39	aeh/erf
Magnesium, dissolved	M200.7 ICP	5.8			mg/L	0.2	1	03/06/08 18:39	aeh/erf
Potassium, dissolved	M200.7 ICP	2.2			mg/L	0.3	2	03/06/08 18:39	aeh/erf
Sodium, dissolved	M200.7 ICP	58.0			mg/L	0.3	2	03/06/08 18:39	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		146			mg/L	2	20	03/06/08 0:00	ear/cas
Carbonate as CaCO3		9	B		mg/L	2	20	03/06/08 0:00	ear/cas
Hydroxide as CaCO3			U		mg/L	2	20	03/06/08 0:00	ear/cas
Total Alkalinity		155		*	mg/L	2	20	03/06/08 0:00	ear/cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.4			%			03/12/08 0:00	calc
Sum of Anions		3.6			meq/L	0.1	0.5	03/12/08 0:00	calc
Sum of Cations		3.7			meq/L	0.1	0.5	03/12/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	8.6			mg/L	0.5	3	03/11/08 1:39	aml/ccp
Fluoride	M300.0 - Ion Chromatography	0.3	B	*	mg/L	0.1	0.5	03/11/08 1:39	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		U		mg/L	0.02	0.1	03/12/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.02	B		mg/L	0.02	0.1	03/05/08 19:45	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.02	B	*	mg/L	0.01	0.05	03/05/08 19:45	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	190			mg/L	10	20	03/07/08 9:22	cas
Sulfate	300.0 - Ion Chromatography	12.3			mg/L	0.5	3	03/11/08 1:39	aml/ccp
TDS (calculated)	Calculation	196			mg/L	10	50	03/12/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	0.97						03/12/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67990***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241225													
WG241225PBW2	PBW	03/06/08 19:30				U	mg/L		-20	20			
WG241225LCSW5	LCSW	03/06/08 19:43	WC080131-1	820		840.2	mg/L	102.5	90	110			
L67991-03DUP	DUP	03/06/08 21:12			8	7.6	mg/L				5.1	20	RA
WG241225PBW3	PBW	03/06/08 22:18				U	mg/L		-20	20			
WG241225LCSW8	LCSW	03/06/08 22:31	WC080131-1	820		827	mg/L	100.9	90	110			
WG241225LCSW11	LCSW	03/07/08 2:33	WC080131-1	820		777.3	mg/L	94.8	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241214													
WG241214ICV	ICV	03/06/08 16:38	II080115-3	100		98.6	mg/L	98.6	95	105			
WG241214ICB	ICB	03/06/08 16:41				U	mg/L		-0.6	0.6			
WG241214LFB	LFB	03/06/08 16:57	II080214-5	67.97008		70.38	mg/L	103.5	85	115			
L67978-04AS	AS	03/06/08 17:57	II080214-5	67.97008	4.8	76.89	mg/L	106.1	85	115			
L67978-04ASD	ASD	03/06/08 18:01	II080214-5	67.97008	4.8	76.73	mg/L	105.8	85	115	0.21	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	19.98		20.34	mg/L	101.8	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		31.43	mg/L	104.8	90	110			
L67954-01AS	AS	03/10/08 22:38	WI080306-2	600	480	1073	mg/L	98.8	90	110			
L67954-01DUP	DUP	03/10/08 22:56			480	481	mg/L				0.2	20	
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	19.98		20.24	mg/L	101.3	90	110			
WG241326ICB1	ICB	03/11/08 16:39				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
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	4		4.02	mg/L	100.5	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-0.3	0.3			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	1.5		1.57	mg/L	104.7	90	110			
L67954-01AS	AS	03/10/08 22:38	WI080306-2	30	U	31.7	mg/L	105.7	90	110			
L67954-01DUP	DUP	03/10/08 22:56			U	U	mg/L				0	20	RA
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	4		3.92	mg/L	98	90	110			
WG241326ICB1	ICB	03/11/08 16:39				U	mg/L		-0.3	0.3			

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67990***

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241214													
WG241214ICV	ICV	03/06/08 16:38	II080115-3	100		100.25	mg/L	100.3	95	105			
WG241214ICB	ICB	03/06/08 16:41				U	mg/L		-0.6	0.6			
WG241214LFB	LFB	03/06/08 16:57	II080214-5	54.96908		58.67	mg/L	106.7	85	115			
L67978-04AS	AS	03/06/08 17:57	II080214-5	54.96908	2	60.41	mg/L	106.3	85	115			
L67978-04ASD	ASD	03/06/08 18:01	II080214-5	54.96908	2	60.86	mg/L	107.1	85	115	0.74	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
WG241168													
WG241168ICV	ICV	03/05/08 19:14	WI071212-1	2.416		2.32	mg/L	96	90	110			
WG241168ICB	ICB	03/05/08 19:16				U	mg/L		-0.06	0.06			
WG241168LFB	LFB	03/05/08 19:19	WI070911-4	2		2.015	mg/L	100.8	90	110			
L67990-01AS	AS	03/05/08 19:41	WI070911-4	2	.92	2.905	mg/L	99.3	90	110			
L67990-02DUP	DUP	03/05/08 19:43			.77	.771	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
WG241168													
WG241168ICV	ICV	03/05/08 19:14	WI071212-1	.609		.576	mg/L	94.6	90	110			
WG241168ICB	ICB	03/05/08 19:16				.011	mg/L		-0.03	0.03			
WG241168LFB	LFB	03/05/08 19:19	WI070911-4	1		.997	mg/L	99.7	90	110			
L67990-01AS	AS	03/05/08 19:41	WI070911-4	1	U	1.018	mg/L	101.8	90	110			
L67990-02DUP	DUP	03/05/08 19:43			.02	.021	mg/L				4.9	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241214													
WG241214ICV	ICV	03/06/08 16:38	II080115-3	20		20.18	mg/L	100.9	95	105			
WG241214ICB	ICB	03/06/08 16:41				U	mg/L		-0.9	0.9			
WG241214LFB	LFB	03/06/08 16:57	II080214-5	99.76186		107.63	mg/L	107.9	85	115			
L67978-04AS	AS	03/06/08 17:57	II080214-5	99.76186	.6	107.06	mg/L	106.7	85	115			
L67978-04ASD	ASD	03/06/08 18:01	II080214-5	99.76186	.6	108.19	mg/L	107.8	85	115	1.05	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241240													
WG241240PBW	PBW	03/07/08 9:00				U	mg/L		-20	20			
WG241240LCSW	LCSW	03/07/08 9:01	PCN28837	260		268	mg/L	103.1	80	120			
L68017-04DUP	DUP	03/07/08 9:29			5190	5150	mg/L				0.8	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67990***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241214													
WG241214ICV	ICV	03/06/08 16:38	II080115-3	100		100.13	mg/L	100.1	95	105			
WG241214ICB	ICB	03/06/08 16:41				U	mg/L		-0.9	0.9			
WG241214LFB	LFB	03/06/08 16:57	II080214-5	98.21624		106.05	mg/L	108	85	115			
L67978-04AS	AS	03/06/08 17:57	II080214-5	98.21624	3.4	106.81	mg/L	105.3	85	115			
L67978-04ASD	ASD	03/06/08 18:01	II080214-5	98.21624	3.4	108.06	mg/L	106.6	85	115	1.16	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241326													
WG241326ICV	ICV	03/10/08 21:26	WI080220-1	50.1		51.43	mg/L	102.7	90	110			
WG241326ICB	ICB	03/10/08 21:44				U	mg/L		-1.5	1.5			
WG241326LFB	LFB	03/10/08 22:02	WI080306-2	30		32.41	mg/L	108	90	110			
L67954-01AS	AS	03/10/08 22:38	WI080306-2	600	270	847	mg/L	96.2	90	110			
L67954-01DUP	DUP	03/10/08 22:56			270	275	mg/L				1.8	20	
WG241326ICV1	ICV	03/11/08 16:21	WI080220-1	50.1		50.87	mg/L	101.5	90	110			
WG241326ICB1	ICB	03/11/08 16:39				.91	mg/L		-1.5	1.5			

ACZ Laboratories, Inc.
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Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67990***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67990-01	WG241326	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).
	WG241168	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).
	WG241225	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).
L67990-02	WG241326	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).
	WG241168	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).
	WG241225	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).
L67990-03	WG241326	Fluoride	M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG241168	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).
	WG241225	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).

ACZ Laboratories, Inc.
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Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67990***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67990
Date Received: 3/5/2008
Received By:
Date Printed: 3/5/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
NA5594	3.2	16

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67990
Date Received: 3/5/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67990-01	BF-1		Y									
L67990-02	GL-3		Y									
L67990-03	TM-2A		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: _____

L67990

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name:	Dan Simpson	Address:	51 West Wetmore Rd
Company:	Hydro Geo Chem Inc.		Tucson, AZ 85705
E-mail:	dans@hgcinc.com	Telephone:	(520) 293-1500 X1133

Copy of Report to:

Name:	Jim Norris	E-mail:	jimn@hgcinc.com
Company:	HGC Inc.	Telephone:	520) 293-1500 X112

Invoice to:

Name:	Jim Norris	Address:	51 W. Wetmore Rd
Company:	HGC Inc.		Tucson, AZ 85705
E-mail:	jimn@hgcinc.com	Telephone:	520) 293-1500 X112

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 [X] NO [ ]

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

PROJECT INFORMATION

Quote #: FMCQB-GW

Project/PO #: 872002.2

Reporting state for compliance testing: AZ

Sampler's Name: Mark Arneson

Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca Mg Na K	TDS SO_4 NO_2-NO_3	Cl F Alk						
BF-1	3/4/08 : 1310	GW	3	X	X	X						
GL-3	3/4/08 : 1155	GW	3	X	X	X						
TM-2A	3/4/08 : 1425	GW	3	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

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	3/4/08 : 1630	[signature]	3-5-08 11:05

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

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

Analytical Report

March 21, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L68145

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 13, 2008. This project has been assigned to ACZ's project number, L68145. 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 L68145. 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 April 21, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: EPPELE 641

ACZ Sample ID: ***L68145-01***
Date Sampled: *03/11/08 13:30*
Date Received: *03/13/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	21.7			mg/L	0.5	3	03/19/08 19:31	aml

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L68145***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241583													
WG241583ICV1	ICV	03/19/08 17:24	WI080220-1	50.1		50.2	mg/L	100.2	90	110			
WG241583ICB1	ICB	03/19/08 17:43				U	mg/L		-1.5	1.5			
WG241583LFB2	LFB	03/19/08 18:01	WI080306-2	30		29.95	mg/L	99.8	90	110			
L68019-02AS	AS	03/19/08 18:55	WI080306-2	300	482	771.9	mg/L	96.6	90	110			
L68019-02DUP	DUP	03/19/08 19:13			482	453.5	mg/L				6.1	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68145***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68145***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68145
Date Received: 3/13/2008
Received By:
Date Printed: 3/13/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
NA5651	1.2	19

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68145
Date Received: 3/13/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68145-01	EPPELE									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. L68145

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson	Address: 51 W. Wetmore Rd
Company: Hydro Geo Chem Inc.	Tucson, AZ 85705
E-mail: dans@hgcinc.	Telephone (520) 293-1500 x 133

Copy of Report to:

Name: Jim Norris	E-mail: jimn@hgcinc.com
Company: HGC Inc.	Telephone: 520 293-1500 x 112

Invoice to:

Name: Jim Norris	Address: 51 W. Wetmore Rd
Company: Hydro Geo Chem Inc.	Tucson, AZ 85705
E-mail: jimn@hgcinc.com	Telephone: (520) 293-1500 x 112

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 [X] NO [ ]

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

PROJECT INFORMATION

Quote #: 504-IC

Project/PO #: 872001.0

Reporting state for compliance testing: AZ

Sampler's Name: M. Arneson

Are any samples NRC licensable material? NO

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO4 -
EPPELE	3-11-08:1330	GW	1	X

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3-12-08:1350	WPC	3-13-08 10:5

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

Analytical Report

April 08, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L68297

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 21, 2008. This project has been assigned to ACZ's project number, L68297. 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 L68297. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after May 08, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: ANDERSON

ACZ Sample ID: ***L68297-01***
Date Sampled: *03/20/08 11:35*
Date Received: *03/21/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	431			mg/L	8	40	04/05/08 18:34	aml

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

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

Inorganic QC Summary

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L68297***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG242493													
WG242493ICV	ICV	04/04/08 11:39	WI080318-6	50.1		50.15	mg/L	100.1	90	110			
WG242493ICB	ICB	04/04/08 11:57				U	mg/L		-1.5	1.5			
WG242493LFB	LFB	04/04/08 12:15	WI080306-2	30		29.44	mg/L	98.1	90	110			
L68295-01AS	AS	04/05/08 16:10	WI080306-2	150	123	275	mg/L	101.3	90	110			
L68295-01DUP	DUP	04/05/08 16:28			123	119.4	mg/L				3	20	

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68297***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68297***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68297
Date Received: 3/21/2008
Received By:
Date Printed: 3/21/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) 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 (℃)	Rad (µR/hr)
NA5711	0	21

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L68297
Date Received: 3/21/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68297-01	ANDERSON									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: _____

L68297

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: (520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Telephone: (520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Address: 51 W. Wetmore Rd. Tucson, AZ 85705
Telephone: (520) 293-1500 x112

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

PROJECT INFORMATION

Quote #: SO4-TC
Project/PO #: 872001.0
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO_4^-
ANDERSON	3/20/08 : 1135	GW	1	X

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3/20/08 : 1615	[illegible]	3-21-08 10:38

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

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

Analytical Report

April 08, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L68296

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 21, 2008. This project has been assigned to ACZ's project number, L68296. 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 L68296. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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

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

All samples and sub-samples associated with this project will be disposed of after May 08, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed and approved this report.

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: ROGERS 803

ACZ Sample ID: ***L68296-01***
Date Sampled: *03/20/08 07:45*
Date Received: *03/21/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	94.0		*	mg/L	0.2	1	03/24/08 22:59	aeh/erf
Magnesium, dissolved	M200.7 ICP	11.7			mg/L	0.2	1	03/21/08 20:32	aeh/wfg
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	03/21/08 20:32	aeh/wfg
Sodium, dissolved	M200.7 ICP	26.6			mg/L	0.3	2	03/21/08 20:32	aeh/wfg

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		148			mg/L	2	20	03/24/08 0:00	jlf
Carbonate as CaCO3			U		mg/L	2	20	03/24/08 0:00	jlf
Hydroxide as CaCO3			U		mg/L	2	20	03/24/08 0:00	jlf
Total Alkalinity		148			mg/L	2	20	03/24/08 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.5			%			04/08/08 14:30	calc
Sum of Anions		6.3			meq/L	0.1	0.5	04/08/08 14:30	calc
Sum of Cations		6.9			meq/L	0.1	0.5	04/08/08 14:30	calc
Chloride	M300.0 - Ion Chromatography	13.2			mg/L	0.5	3	03/26/08 19:04	aml
Fluoride	M300.0 - Ion Chromatography	0.2	B	*	mg/L	0.1	0.5	04/01/08 21:49	aml
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	4.69			mg/L	0.04	0.2	04/08/08 14:30	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	4.71			mg/L	0.04	0.2	03/21/08 21:49	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.02	B	*	mg/L	0.01	0.05	03/21/08 21:42	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	410	H	*	mg/L	10	20	04/01/08 15:22	jlf
Sulfate	300.0 - Ion Chromatography	125			mg/L	1	5	04/05/08 17:58	aml
TDS (calculated)	Calculation	383			mg/L	10	50	04/08/08 14:30	calc
TDS (ratio - measured/calculated)	Calculation	1.07						04/08/08 14:30	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: LAWSON TVI 236

ACZ Sample ID: ***L68296-02***
Date Sampled: *03/20/08 08:30*
Date Received: *03/21/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	70.5			mg/L	0.2	1	03/27/08 2:25	aeh
Magnesium, dissolved	M200.7 ICP	9.3			mg/L	0.2	1	03/27/08 2:25	aeh
Potassium, dissolved	M200.7 ICP	1.9	B		mg/L	0.3	2	03/27/08 2:25	aeh
Sodium, dissolved	M200.7 ICP	25.6			mg/L	0.3	2	03/27/08 2:25	aeh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		178			mg/L	2	20	03/24/08 0:00	jlf
Carbonate as CaCO3			U		mg/L	2	20	03/24/08 0:00	jlf
Hydroxide as CaCO3			U		mg/L	2	20	03/24/08 0:00	jlf
Total Alkalinity		178			mg/L	2	20	03/24/08 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.9			%			04/08/08 14:30	calc
Sum of Anions		5.2			meq/L	0.1	0.5	04/08/08 14:30	calc
Sum of Cations		5.4			meq/L	0.1	0.5	04/08/08 14:30	calc
Chloride	M300.0 - Ion Chromatography	26.0			mg/L	0.5	3	03/26/08 19:22	aml
Fluoride	M300.0 - Ion Chromatography	0.1	B	*	mg/L	0.1	0.5	04/01/08 22:05	aml
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.90			mg/L	0.02	0.1	04/08/08 14:30	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.93			mg/L	0.02	0.1	03/21/08 21:43	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.03	B	*	mg/L	0.01	0.05	03/21/08 21:43	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	310	H	*	mg/L	10	20	04/01/08 15:23	jlf
Sulfate	300.0 - Ion Chromatography	31.3			mg/L	0.5	3	04/04/08 14:58	aml
TDS (calculated)	Calculation	289			mg/L	10	50	04/08/08 14:30	calc
TDS (ratio - measured/calculated)	Calculation	1.07						04/08/08 14:30	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: COOPER C

ACZ Sample ID: ***L68296-03***
Date Sampled: *03/20/08 13:15*
Date Received: *03/21/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	393			mg/L	0.2	1	03/27/08 2:43	aeh
Magnesium, dissolved	M200.7 ICP	59.8			mg/L	0.2	1	03/27/08 2:43	aeh
Potassium, dissolved	M200.7 ICP	6.0			mg/L	0.3	2	03/27/08 2:43	aeh
Sodium, dissolved	M200.7 ICP	45.0			mg/L	0.3	2	03/27/08 2:43	aeh

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		229			mg/L	2	20	03/24/08 0:00	jlf
Carbonate as CaCO3			U		mg/L	2	20	03/24/08 0:00	jlf
Hydroxide as CaCO3			U		mg/L	2	20	03/24/08 0:00	jlf
Total Alkalinity		229			mg/L	2	20	03/24/08 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.6			%			04/08/08 14:30	calc
Sum of Anions		27.0			meq/L	0.1	0.5	04/08/08 14:30	calc
Sum of Cations		26.7			meq/L	0.1	0.5	04/08/08 14:30	calc
Chloride	M300.0 - Ion Chromatography	49.0			mg/L	0.5	3	03/26/08 20:16	aml
Fluoride	M300.0 - Ion Chromatography		U	*	mg/L	0.1	0.5	04/01/08 22:59	aml
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	3.09			mg/L	0.02	0.1	04/08/08 14:30	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	3.10			mg/L	0.02	0.1	03/21/08 21:48	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	0.01	B	*	mg/L	0.01	0.05	03/21/08 21:48	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	1810	H	*	mg/L	10	20	04/01/08 15:24	jlf
Sulfate	300.0 - Ion Chromatography	990			mg/L	10	50	04/05/08 18:16	aml
TDS (calculated)	Calculation	1690			mg/L	10	50	04/08/08 14:30	calc
TDS (ratio - measured/calculated)	Calculation	1.07						04/08/08 14:30	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68296***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241912													
WG241912PBW1	PBW	03/24/08 11:23				2.3	mg/L		-20	20			
WG241912LCSW2	LCSW	03/24/08 11:36	WC080324-1	820		779.5	mg/L	95.1	90	110			
WG241912PBW2	PBW	03/24/08 13:55				U	mg/L		-20	20			
WG241912LCSW4	LCSW	03/24/08 14:07	WC080324-1	820		783.5	mg/L	95.5	90	110			
WG241912PBW3	PBW	03/24/08 18:01				U	mg/L		-20	20			
WG241912LCSW6	LCSW	03/24/08 18:13	WC080324-1	820		784.1	mg/L	95.6	90	110			
WG241912PBW4	PBW	03/24/08 21:12				U	mg/L		-20	20			
WG241912LCSW8	LCSW	03/24/08 21:25	WC080324-1	820		789.5	mg/L	96.3	90	110			
L68302-01DUP	DUP	03/24/08 23:50			586	588	mg/L				0.3	20	
WG241912LCSW10	LCSW	03/25/08 0:01	WC080324-1	820		790.7	mg/L	96.4	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241932													
WG241932ICV	ICV	03/24/08 20:57	II080115-3	100		96.59	mg/L	96.6	95	105			
WG241932ICB	ICB	03/24/08 21:00				U	mg/L		-0.6	0.6			
WG241932LFB	LFB	03/24/08 21:16	II080319-3	67.97008		70.63	mg/L	103.9	85	115			
L68273-06AS	AS	03/24/08 22:17	II080319-3	67.97008	508	578.49	mg/L	103.7	85	115			
L68273-06ASD	ASD	03/24/08 22:21	II080319-3	67.97008	508	559.01	mg/L	75	85	115	3.43	20	M3
WG242077													
WG242077ICV	ICV	03/27/08 1:54	II080115-3	100		95.53	mg/L	95.5	95	105			
WG242077ICB	ICB	03/27/08 1:58				U	mg/L		-0.6	0.6			
WG242077LFB	LFB	03/27/08 2:12	II080319-3	67.97008		69.6	mg/L	102.4	85	115			
L68296-02AS	AS	03/27/08 2:29	II080319-3	67.97008	70.5	134.18	mg/L	93.7	85	115			
L68296-02ASD	ASD	03/27/08 2:32	II080319-3	67.97008	70.5	137.04	mg/L	97.9	85	115	2.11	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG241917													
WG241917ICV	ICV	03/26/08 16:03	WI080318-6	19.98		20.06	mg/L	100.4	90	110			
WG241917ICB	ICB	03/26/08 16:21				U	mg/L		-1.5	1.5			
WG241917LFB	LFB	03/26/08 16:39	WI080306-2	30		31.21	mg/L	104	90	110			
L68295-01AS	AS	03/26/08 17:15	WI080306-2	30	8.5	37.34	mg/L	96.1	90	110			
L68295-01DUP	DUP	03/26/08 17:33			8.5	8.51	mg/L				0.1	20	
L68307-02AS	AS	03/26/08 21:29	WI080306-2	30	9.9	39.59	mg/L	99	90	110			
L68307-02DUP	DUP	03/26/08 21:47			9.9	9.91	mg/L				0.1	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68296***

Fluoride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG242303													
WG242303ICV	ICV	04/01/08 15:11	WI080318-6	4		3.61	mg/L	90.3	90	110			
WG242303ICB	ICB	04/01/08 15:29				U	mg/L		-0.3	0.3			
WG242303LFB	LFB	04/01/08 15:47	WI080306-2	1.5		1.48	mg/L	98.7	90	110			
L68295-03AS	AS	04/01/08 20:37	WI080306-2	1.5	.7	2.13	mg/L	95.3	90	110			
L68295-03DUP	DUP	04/01/08 20:55			.7	.63	mg/L				10.5	20	RA

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241868													
WG241868ICV	ICV	03/21/08 18:16	II080115-3	100		96.01	mg/L	96	95	105			
WG241868ICB	ICB	03/21/08 18:20				U	mg/L		-0.6	0.6			
WG241868LFB	LFB	03/21/08 18:37	II080319-3	49.96908		50.41	mg/L	100.9	85	115			
L68273-06AS	AS	03/21/08 19:43	II080319-3	49.96908	23.3	73.75	mg/L	101	85	115			
L68273-06ASD	ASD	03/21/08 19:47	II080319-3	49.96908	23.3	75	mg/L	103.5	85	115	1.68	20	
WG242077													
WG242077ICV	ICV	03/27/08 1:54	II080115-3	100		98.91	mg/L	98.9	95	105			
WG242077ICB	ICB	03/27/08 1:58				U	mg/L		-0.6	0.6			
WG242077LFB	LFB	03/27/08 2:12	II080319-3	49.96908		52.19	mg/L	104.4	85	115			
L68296-02AS	AS	03/27/08 2:29	II080319-3	49.96908	9.3	61.43	mg/L	104.3	85	115			
L68296-02ASD	ASD	03/27/08 2:32	II080319-3	49.96908	9.3	61.51	mg/L	104.5	85	115	0.13	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
WG241885													
WG241885ICV	ICV	03/21/08 21:29	WI080312-1	2.416		2.505	mg/L	103.7	90	110			
WG241885ICB	ICB	03/21/08 21:31				U	mg/L		-0.06	0.06			
WG241885LFB	LFB	03/21/08 21:36	WI080312-1	2		2.102	mg/L	105.1	90	110			
L68283-01AS	AS	03/21/08 21:38	WI080312-1	2	.53	2.588	mg/L	102.9	90	110			
L68290-01DUP	DUP	03/21/08 21:41			.95	.952	mg/L				0.2	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
WG241885													
WG241885ICV	ICV	03/21/08 21:29	WI080312-1	.609		.65	mg/L	106.7	90	110			
WG241885ICB	ICB	03/21/08 21:31				U	mg/L		-0.03	0.03			
WG241885LFB	LFB	03/21/08 21:36	WI080312-1	1		1.002	mg/L	100.2	90	110			
L68283-01AS	AS	03/21/08 21:38	WI080312-1	1	U	.971	mg/L	97.1	90	110			
L68290-01DUP	DUP	03/21/08 21:41			U	U	mg/L				0	20	RA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L68296***

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241868													
WG241868ICV	ICV	03/21/08 18:16	II080115-3	20		19.52	mg/L	97.6	95	105			
WG241868ICB	ICB	03/21/08 18:20				U	mg/L		-0.9	0.9			
WG241868LFB	LFB	03/21/08 18:37	II080319-3	99.76186		102.15	mg/L	102.4	85	115			
L68273-06AS	AS	03/21/08 19:43	II080319-3	99.76186	46.5	152.51	mg/L	106.3	85	115			
L68273-06ASD	ASD	03/21/08 19:47	II080319-3	99.76186	46.5	155.27	mg/L	109	85	115	1.79	20	
WG242077													
WG242077ICV	ICV	03/27/08 1:54	II080115-3	20		20.06	mg/L	100.3	95	105			
WG242077ICB	ICB	03/27/08 1:58				U	mg/L		-0.9	0.9			
WG242077LFB	LFB	03/27/08 2:12	II080319-3	99.76186		104.04	mg/L	104.3	85	115			
L68296-02AS	AS	03/27/08 2:29	II080319-3	99.76186	1.9	108.14	mg/L	106.5	85	115			
L68296-02ASD	ASD	03/27/08 2:32	II080319-3	99.76186	1.9	107.36	mg/L	105.7	85	115	0.72	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG242307													
WG242307PBW	PBW	04/01/08 15:00				U	mg/L		-20	20			
WG242307LCSW	LCSW	04/01/08 15:01	PCN29265	260		268	mg/L	103.1	80	120			
L68308-02DUP	DUP	04/01/08 15:29			1190	1168	mg/L				1.9	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241868													
WG241868ICV	ICV	03/21/08 18:16	II080115-3	100		96.81	mg/L	96.8	95	105			
WG241868ICB	ICB	03/21/08 18:20				U	mg/L		-0.9	0.9			
WG241868LFB	LFB	03/21/08 18:37	II080319-3	98.21624		100.21	mg/L	102	85	115			
L68273-06AS	AS	03/21/08 19:43	II080319-3	98.21624	27.5	130.11	mg/L	104.5	85	115			
L68273-06ASD	ASD	03/21/08 19:47	II080319-3	98.21624	27.5	132.43	mg/L	106.8	85	115	1.77	20	
WG242077													
WG242077ICV	ICV	03/27/08 1:54	II080115-3	100		99.91	mg/L	99.9	95	105			
WG242077ICB	ICB	03/27/08 1:58				U	mg/L		-0.9	0.9			
WG242077LFB	LFB	03/27/08 2:12	II080319-3	98.21624		103.02	mg/L	104.9	85	115			
L68296-02AS	AS	03/27/08 2:29	II080319-3	98.21624	25.6	128.25	mg/L	104.5	85	115			
L68296-02ASD	ASD	03/27/08 2:32	II080319-3	98.21624	25.6	127.73	mg/L	104	85	115	0.41	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG242493													
WG242493ICV	ICV	04/04/08 11:39	WI080318-6	50.1		50.15	mg/L	100.1	90	110			
WG242493ICB	ICB	04/04/08 11:57				U	mg/L		-1.5	1.5			
WG242493LFB	LFB	04/04/08 12:15	WI080306-2	30		29.44	mg/L	98.1	90	110			
L68295-01AS	AS	04/05/08 16:10	WI080306-2	150	123	275	mg/L	101.3	90	110			
L68295-01DUP	DUP	04/05/08 16:28			123	119.4	mg/L				3	20	

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Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68296***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L68296-01	WG241932	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG242303	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).
	WG241885	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).
	WG242307	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.
L68296-02	WG242303	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).
	WG241885	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).
	WG242307	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.
L68296-03	WG242303	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).
	WG241885	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).
	WG242307	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.

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Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L68296***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L68296
Date Received: 3/21/2008
Received By:
Date Printed: 3/21/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) 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 (℃)	Rad (µR/hr)
NA5711	0	21

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L68296
Date Received: 3/21/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L68296-01	ROGERS 803		Y									
L68296-02	LAWSON TVI 236		Y									
L68296-03	COOPER C		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: _____

L68296

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson	Address: 51 West Wetmore Rd. Tucson AZ 85705
Company: Hydro GeoChem Inc.	
E-mail: dans@hgcinc.com	Telephone: (520) 293-1500 x133

Copy of Report to:

Name: Jim Norris	E-mail: jimn@hgcinc.com
Company: HGC Inc.	Telephone: (520) 293-1500 x112

Invoice to:

Name: Jim Norris	Address: 51 W. Wetmore Rd Tucson AZ 85705
Company: HGC Inc.	
E-mail: jimn@hgcinc.com	Telephone: 520) 293-1500 x112

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 [X] NO [ ]

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

PROJECT INFORMATION

Quote #: FMCQB-GW

Project/PO #: 872002.2

Reporting state for compliance testing: AZ

Sampler's Name: M. Hineson

Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Mg Na Ca K / TDS $SO_4^{=}$ / NO_2^- NO_3^- Cl^- F^-	Alk						
ROGERS 803	3/20/08 : 7:45	GW	3	X	X	X					
LAWSON TVI236	3/20/08 : 8:30	GW	3	X	X	X					
COOPER C	3/20/08 : 13:15	GW	3	X	X	X					

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	3/20/08: 1615	WRL	3-21-08 10:38

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

Analytical Report

June 19, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872000 T2.2
ACZ Project ID: L69570

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on May 30, 2008. This project has been assigned to ACZ's project number, L69570. 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 L69570. 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 19, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872000 T2.2
Sample ID: ENGLUND

ACZ Sample ID: ***L69570-01***
Date Sampled: *05/29/08 14:10*
Date Received: *05/30/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	520		*	mg/L	10	50	06/15/08 20:34	aml

Arizona license number: AZ0102

Hydro Geo Chem, Inc.
Project ID: 872000 T2.2
Sample ID: DUP052908

ACZ Sample ID: ***L69570-02***
Date Sampled: *05/29/08 00:00*
Date Received: *05/30/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	550		*	mg/L	10	50	06/15/08 20:52	aml

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872000 T2.2
Sample ID: FB052908

ACZ Sample ID: ***L69570-03***
Date Sampled: *05/29/08 00:00*
Date Received: *05/30/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U	*	mg/L	0.5	3	06/15/08 21:10	aml

Arizona license number: AZ0102

ACZ Laboratories, Inc.
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Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872000 T2.2
Sample ID: EQB052908

ACZ Sample ID: ***L69570-04***
Date Sampled: *05/29/08 00:00*
Date Received: *05/30/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography		U	*	mg/L	0.5	3	06/15/08 22:04	aml

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872000 T2.2

ACZ Project ID: ***L69570***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG246357													
WG246357ICV	ICV	06/15/08 14:13	WI080521-1	50.1		50.64	mg/L	101.1	90	110			
WG246357ICB	ICB	06/15/08 14:32				U	mg/L		-1.5	1.5			
WG246357LFB	LFB	06/15/08 14:50	WI080521-3	30		32.63	mg/L	108.8	90	110			
L69541-06AS	AS	06/15/08 19:39	WI080521-3	30	21.9	47.39	mg/L	85	90	110			M2
L69541-06DUP	DUP	06/15/08 19:57			21.9	20.25	mg/L				7.8	20	
WG246357ICV1	ICV	06/16/08 16:08	WI080521-1	50.1		50.45	mg/L	100.7	90	110			
WG246357ICB1	ICB	06/16/08 16:26				.91	mg/L		-1.5	1.5			

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L69570***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L69570-01	WG246357	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L69570-02	WG246357	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L69570-03	WG246357	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L69570-04	WG246357	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872000 T2.2

ACZ Project ID: L69570
Date Received: 5/30/2008
Received By:
Date Printed: 5/30/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) 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)
NA6148	5.7	15

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872000 T2.2

ACZ Project ID: L69570
Date Received: 5/30/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L69570-01	ENGLUND									X		
L69570-02	DUP052908									X		
L69570-03	FB052908									X		
L69570-04	EQB052908									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. L09540

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd. Tucson, AZ 85705
Telephone: (520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: Jimn@hgcinc.com HGC
E-mail: Jimn@hgcinc.com
Telephone: (520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: Jimn@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: (520) 293-1500 x112

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

PROJECT INFORMATION

Quote #: SO4IC
Project/PO #: 8720000 T2.2
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? NO

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO4							
ENGLUND	5-29-09 : 1410	GW	1	X							
DUP 052908	5-29-09 :	GW	1	X							
FB 052908	5-29-08	GW	1	X							
EQB 052908	5-29-08	GW	1	X							

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

REMARKS/ SAMPLE DISCLOSURES

PAGE 1 of 1

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	5-29-09 : 15:30	WIL	5-30-08 10:31

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

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

Analytical Report

February 19, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L67560

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 06, 2008. This project has been assigned to ACZ's project number, L67560. 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 L67560. 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 March 19, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

S. Habermehl

Scott Habermehl has reviewed and approved this report.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: RUIZ

ACZ Sample ID: ***L67560-01***
Date Sampled: *02/05/08 08:50*
Date Received: *02/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	263		*	mg/L	3	10	02/11/08 19:03	aml

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: BLOMMER

ACZ Sample ID: ***L67560-02***
Date Sampled: *02/05/08 10:20*
Date Received: *02/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	206		*	mg/L	3	10	02/11/08 19:21	aml

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: NOTEMAN

ACZ Sample ID: ***L67560-03***
Date Sampled: *02/05/08 12:15*
Date Received: *02/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	310		*	mg/L	10	50	02/11/08 19:39	aml

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: MARTIN

ACZ Sample ID: ***L67560-04***
Date Sampled: *02/05/08 13:50*
Date Received: *02/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	1060		*	mg/L	50	300	02/11/08 19:57	aml

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: CAMPBELL

ACZ Sample ID: ***L67560-05***
Date Sampled: *02/05/08 15:15*
Date Received: *02/06/08*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfate	300.0 - Ion Chromatography	211		*	mg/L	3	10	02/11/08 20:15	aml

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L67560***

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240083													
WG240083ICV	ICV	02/07/08 16:57	WI080128-8	50.1		50.44	mg/L	100.7	90	110			
WG240083ICB	ICB	02/07/08 17:15				U	mg/L		-1.5	1.5			
WG240083ICV1	ICV	02/09/08 11:47	WI080128-8	50.1		51.13	mg/L	102.1	90	110			
WG240083ICB1	ICB	02/09/08 12:05				U	mg/L		-1.5	1.5			
WG240236													
WG240236ICV	ICV	02/09/08 14:30	WI080128-8	50.1		51.88	mg/L	103.6	90	110			
WG240236ICB	ICB	02/09/08 14:48				U	mg/L		-1.5	1.5			
L67529-01AS	AS	02/09/08 19:56	WI080128-9	30	4.6	33.74	mg/L	97.1	90	110			
L67529-01DUP	DUP	02/09/08 20:14			4.6	4.59	mg/L				0.2	20	RA
WG240236ICV1	ICV	02/11/08 18:09	WI080128-8	50.1		51.63	mg/L	103.1	90	110			
WG240236ICB1	ICB	02/11/08 18:27				U	mg/L		-1.5	1.5			
WG240236LFB	LFB	02/11/08 18:45	WI080128-9					106.2	90	110			

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67560***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67560-01	WG240236	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).
L67560-02	WG240236	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).
L67560-03	WG240236	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).
L67560-04	WG240236	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).
L67560-05	WG240236	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).

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67560***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67560
Date Received: 2/6/2008
Received By:
Date Printed: 2/6/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
NA5435	0.3	15

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67560
Date Received: 2/6/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67560-01	RUIZ									X		
L67560-02	BLOMMER									X		
L67560-03	NOTEMAN									X		
L67560-04	MARTIN									X		
L67560-05	CAMPBELL									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: _____

L67560

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: DAN SIMPSON	Address: 51 WEST WETMORE ROAD SUIT 101 TUCSON AZ 85705
Company: HGC	
E-mail: DANS@HGCINC.COM	Telephone: (520) 293 1500 X133

Copy of Report to:

Name: JIM NORRIS	E-mail: JIMN@HGCINC.COM
Company: HYDRO GEO CHEM	Telephone: (520) 293 1500 X 112

Invoice to:

Name: JIM NORRIS	Address: 51 W. WETMORE RD #101 293 1500 X 112
Company: HYDRO GEO CHEM	
E-mail: JIMN@HGCINC.COM	Telephone: (520) 293 1500 X 112

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

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

PROJECT INFORMATION

Quote #: SO4--IC
Project/PO #: 872001.0
Reporting state for compliance testing: AZ
Sampler's Name: ALI PANDAMOUZ
Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO4--							
RUIZ	02/05/2008-0850	GW		✓							
BLOMMER	02/05/2008-1020	GW		✓							
NOTEMAN	02/05/2008-1215	GW		✓							
MARTIN	02/05/2008-1350	GW		✓							
CAMPBELL	02/05/2008-1525	GW		✓							

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
Ali Pandamouz	02/05/2008-1640		2-6-08 11:20

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

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

Analytical Report

March 11, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872001.0
ACZ Project ID: L67684

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 15, 2008. This project has been assigned to ACZ's project number, L67684. 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 L67684. 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 April 11, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Sue Webber has reviewed and approved this report.

Hydro Geo Chem, Inc.

March 11, 2008

Project ID: 872001.0
ACZ Project ID: L67684

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 1 ground water sample from Hydro Geo Chem, Inc. on February 15, 2008. The sample was received in good condition. Upon receipt, the sample custodian removed the sample from the cooler, inspected the contents, and logged the sample into ACZ's computerized Laboratory Information Management System (LIMS). The sample was assigned ACZ LIMS project number L67684. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were not performed within EPA recommended holding times.

1. The TDS analysis was completed past the hold time of 7 days due to a login error. There will be no charge for the analysis.

Sample Analysis

This sample was analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports.

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872001.0
Sample ID: WEED

ACZ Sample ID: ***L67684-01***
Date Sampled: *02/14/08 15:10*
Date Received: *02/15/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	35.6		*	mg/L	0.2	1	02/27/08 12:47	aeh/erf
Magnesium, dissolved	M200.7 ICP	14.5		*	mg/L	0.2	1	02/27/08 12:47	aeh/erf
Potassium, dissolved	M200.7 ICP	2.2		*	mg/L	0.3	2	02/27/08 12:47	aeh/erf
Sodium, dissolved	M200.7 ICP	30.0		*	mg/L	0.3	2	02/27/08 12:47	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		162			mg/L	2	20	02/28/08 0:00	cas
Carbonate as CaCO3		5	B		mg/L	2	20	02/28/08 0:00	cas
Hydroxide as CaCO3			U		mg/L	2	20	02/28/08 0:00	cas
Total Alkalinity		168		*	mg/L	2	20	02/28/08 0:00	cas
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.9			%			03/10/08 0:00	calc
Sum of Anions		3.9			meq/L	0.1	0.5	03/10/08 0:00	calc
Sum of Cations		4.3			meq/L	0.1	0.5	03/10/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	9	B	*	mg/L	5	30	03/06/08 19:27	aml/ccp
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.72			mg/L	0.04	0.2	03/10/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.72	H	*	mg/L	0.04	0.2	02/29/08 18:09	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		UH	*	mg/L	0.02	0.1	02/29/08 18:09	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	230	H	*	mg/L	10	20	02/26/08 8:45	cas
Sulfate	300.0 - Ion Chromatography	11.1		*	mg/L	0.5	3	02/20/08 22:10	aml/ccp
TDS (calculated)	Calculation	212			mg/L	10	50	03/10/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.08						03/10/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L67684***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240956													
WG240956PBW1	PBW	02/28/08 16:33				25.6	mg/L		-20	20			B4
WG240956LCSW2	LCSW	02/28/08 16:45	WC080131-1	820		822	mg/L	100.2	90	110			
L67721-05DUP	DUP	02/28/08 18:40			1260	1253.1	mg/L				0.5	20	
WG240956PBW2	PBW	02/28/08 20:11				U	mg/L		-20	20			
WG240956LCSW5	LCSW	02/28/08 20:24	WC080131-1	820		824.2	mg/L	100.5	90	110			
WG240956PBW3	PBW	02/28/08 23:13				U	mg/L		-20	20			
WG240956LCSW8	LCSW	02/28/08 23:25	WC080131-1	820		826.4	mg/L	100.8	90	110			
WG240956LCSW11	LCSW	02/29/08 1:11	WC080131-1	820		832	mg/L	101.5	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240847													
WG240847ICV	ICV	02/27/08 12:17	II080115-3	100		95.88	mg/L	95.9	95	105			
WG240847ICB	ICB	02/27/08 12:21				U	mg/L		-0.6	0.6			
WG240847LFB	LFB	02/27/08 12:34	II080214-5	67.97008		68.5	mg/L	100.8	85	115			
L67741-01AS	AS	02/27/08 12:54	II080214-5	339.8504	507	810.5	mg/L	89.3	85	115			
L67741-01ASD	ASD	02/27/08 13:03	II080214-5	339.8504	507	824	mg/L	93.3	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
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG240853LFB	LFB	03/06/08 15:32	WI080128-9	30		29.36	mg/L	97.9	90	110			
L67673-03AS	AS	03/06/08 16:44	WI080306-2	30	16.4	44.77	mg/L	94.6	90	110			
L67673-03DUP	DUP	03/06/08 17:02			16.4	16.45	mg/L				0.3	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240847													
WG240847ICV	ICV	02/27/08 12:17	II080115-3	100		97.91	mg/L	97.9	95	105			
WG240847ICB	ICB	02/27/08 12:21				U	mg/L		-0.6	0.6			
WG240847LFB	LFB	02/27/08 12:34	II080214-5	54.96908		56.29	mg/L	102.4	85	115			
L67741-01AS	AS	02/27/08 12:54	II080214-5	274.8454	429	687.3	mg/L	94	85	115			
L67741-01ASD	ASD	02/27/08 13:03	II080214-5	274.8454	429	689.1	mg/L	94.6	85	115	0.26	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
WG241004													
WG241004ICV	ICV	02/29/08 18:02	WI071212-1	2.416		2.262	mg/L	93.6	90	110			
WG241004ICB	ICB	02/29/08 18:04				U	mg/L		-0.06	0.06			
WG241004LFB	LFB	02/29/08 18:07	WI070911-4	2		1.903	mg/L	95.2	90	110			
L67684-01AS	AS	02/29/08 18:10	WI070911-4	4	1.72	5.535	mg/L	95.4	90	110			
L67904-01DUP	DUP	02/29/08 18:12			2.95	2.946	mg/L				0.1	20	

Hydro Geo Chem, Inc.
Project ID: 872001.0

ACZ Project ID: ***L67684***

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
WG241004													
WG241004ICV	ICV	02/29/08 18:02	WI071212-1	.609		.593	mg/L	97.4	90	110			
WG241004ICB	ICB	02/29/08 18:04				U	mg/L		-0.03	0.03			
WG241004LFB	LFB	02/29/08 18:07	WI070911-4	1		.987	mg/L	98.7	90	110			
L67684-01AS	AS	02/29/08 18:10	WI070911-4	2	U	1.913	mg/L	95.7	90	110			
L67904-01DUP	DUP	02/29/08 18:12			.04	.043	mg/L				7.2	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240847													
WG240847ICV	ICV	02/27/08 12:17	II080115-3	20		19.97	mg/L	99.9	95	105			
WG240847ICB	ICB	02/27/08 12:21				U	mg/L		-0.9	0.9			
WG240847LFB	LFB	02/27/08 12:34	II080214-5	99.76186		104.14	mg/L	104.4	85	115			
L67741-01AS	AS	02/27/08 12:54	II080214-5	498.8093	28	549.5	mg/L	104.5	85	115			
L67741-01ASD	ASD	02/27/08 13:03	II080214-5	498.8093	28	547.2	mg/L	104.1	85	115	0.42	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240825													
L67784-01DUP	DUP	02/26/08 9:11			720	726	mg/L				0.8	20	
WG240825LCSW	LCSW	02/26/08 9:42	PCN28838	260		294	mg/L	113.1	80	120			
WG240825PBW	PBW	02/26/08 9:45				U	mg/L		-20	20			

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240847													
WG240847ICV	ICV	02/27/08 12:17	II080115-3	100		99.05	mg/L	99.1	95	105			
WG240847ICB	ICB	02/27/08 12:21				U	mg/L		-0.9	0.9			
WG240847LFB	LFB	02/27/08 12:34	II080214-5	98.21624		102.19	mg/L	104	85	115			
L67741-01AS	AS	02/27/08 12:54	II080214-5	491.0812	133	639.5	mg/L	103.1	85	115			
L67741-01ASD	ASD	02/27/08 13:03	II080214-5	491.0812	133	635.6	mg/L	102.3	85	115	0.61	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240083													
WG240083ICV	ICV	02/07/08 16:57	WI080128-8	50.1		50.44	mg/L	100.7	90	110			
WG240083ICB	ICB	02/07/08 17:15				U	mg/L		-1.5	1.5			
WG240083ICV1	ICV	02/09/08 11:47	WI080128-8	50.1		51.13	mg/L	102.1	90	110			
WG240083ICB1	ICB	02/09/08 12:05				U	mg/L		-1.5	1.5			
WG240628													
WG240628ICV	ICV	02/20/08 16:08	WI080220-1	50.1		50.64	mg/L	101.1	90	110			
WG240628ICB	ICB	02/20/08 16:26				U	mg/L		-1.5	1.5			
WG240628LFB	LFB	02/20/08 16:44	WI080128-9	30		30.49	mg/L	101.6	90	110			
L67668-03AS	AS	02/20/08 21:34	WI080213-1	50	12.6	39.09	mg/L	53	90	110			M2
L67668-03DUP	DUP	02/20/08 21:52			12.6	12.58	mg/L				0.2	20	
WG240628ICV1	ICV	02/21/08 11:56	WI080220-1	50.1		50.19	mg/L	100.2	90	110			
WG240628ICB1	ICB	02/21/08 12:14				U	mg/L		-1.5	1.5			

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67684***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67684-01	WG240847	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.
		Potassium, 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.
	WG241202	Chloride	M300.0 - Ion Chromatography	DJ	Sample dilution required due to insufficient sample.
	WG241004	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	C4	Confirmatory analysis was past holding time.
			M353.2 - Automated Cadmium Reduction	DJ	Sample dilution required due to insufficient sample.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	C4	Confirmatory analysis was past holding time.
			M353.2 - Automated Cadmium Reduction	DJ	Sample dilution required due to insufficient sample.
			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).
	WG240825	Residue, Filterable (TDS) @180C	160.1 / SM2540C	H1	Sample analysis performed past holding time.
	WG240628	Sulfate	300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG240956	Total Alkalinity	SM2320B - Titration	B4	Target analyte detected in blank at or above the acceptance criteria.
			SM2320B - Titration	QA	Sample container with preservation type specified by the method was not available for analysis. Alternate sample container was used.

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67684***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67684
Date Received: 2/15/2008
Received By:
Date Printed: 2/15/2008

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id	Temp (℃)	Rad (µR/hr)
1996	1.8	15

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872001.0

ACZ Project ID: L67684
Date Received: 2/15/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67684-01	HULL									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: _____

L67684

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: Hydro Geo Chem (HGC)
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd
Tucson AZ 85705
Telephone: (520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC
E-mail: jimn@hgcinc.com
Telephone: (520) 293-1500 x 112

Invoice to:

Name: Jim Norris
Company: HGC
E-mail: jimn@hgcinc.com
Address: above
Telephone: above

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

PROJECT INFORMATION

Quote #: FMCQB-GW
Project/PO #: 872001.0
Reporting state for compliance testing: AZ
Sampler's Name: KW & AP
Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SO4								
~~HHL~~ WEED SW 3-11-08	2/14/08	GW	1	✓								

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

REMARKS/ SAMPLE DISCLOSURES

PAGE 1 of 1

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Kim Wilson	2/14/08 16:30	[signature]	2-15-08 11:34

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

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

Analytical Report

March 10, 2008

Report to:
Dan Simpson
Hydro Geo Chem, Inc.
51 West Wetmore Road Suite 101
Tuscon, AZ 85705

Bill to:
Accounts Payable
Hydro Geo Chem, Inc.
P. O. Box 97220
Phoenix, AZ 85060

cc: Jim Norris

Project ID: 872002.2
ACZ Project ID: L67812

Dan Simpson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 22, 2008. This project has been assigned to ACZ's project number, L67812. 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 L67812. 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 April 10, 2008. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

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

Tony Antalek has reviewed and approved this report.

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: LAWSONTVI875

ACZ Sample ID: ***L67812-01***
Date Sampled: *02/21/08 09:30*
Date Received: *02/22/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	120			mg/L	0.2	1	02/22/08 19:27	aeh/erf
Magnesium, dissolved	M200.7 ICP	16.1			mg/L	0.2	1	02/22/08 19:27	aeh/erf
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	2	02/25/08 16:10	aeh/erf
Sodium, dissolved	M200.7 ICP	41.1			mg/L	0.3	2	02/25/08 16:10	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		161			mg/L	2	20	02/26/08 0:00	jlf
Carbonate as CaCO3		11	B		mg/L	2	20	02/26/08 0:00	jlf
Hydroxide as CaCO3			U		mg/L	2	20	02/26/08 0:00	jlf
Total Alkalinity		172			mg/L	2	20	02/26/08 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.5			%			03/07/08 0:00	calc
Sum of Anions		9.3			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		9.2			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	20.1		*	mg/L	0.5	3	03/06/08 23:41	aml/ccp
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	02/29/08 12:14	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	2.99			mg/L	0.04	0.2	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	2.99		*	mg/L	0.04	0.2	02/22/08 20:42	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	02/22/08 21:39	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	630		*	mg/L	10	20	02/28/08 10:47	cas
Sulfate	300.0 - Ion Chromatography	244		*	mg/L	3	10	03/06/08 23:59	aml/ccp
TDS (calculated)	Calculation	565			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.12						03/07/08 0:00	calc

Arizona license number: AZ0102

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

Inorganic Analytical Results

Hydro Geo Chem, Inc.
Project ID: 872002.2
Sample ID: GARNER557

ACZ Sample ID: ***L67812-02***
Date Sampled: *02/21/08 13:10*
Date Received: *02/22/08*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	62.2			mg/L	0.2	1	02/22/08 19:31	aeh/erf
Magnesium, dissolved	M200.7 ICP	10.2			mg/L	0.2	1	02/22/08 19:31	aeh/erf
Potassium, dissolved	M200.7 ICP	2.5			mg/L	0.3	2	02/25/08 16:13	aeh/erf
Sodium, dissolved	M200.7 ICP	58.1			mg/L	0.3	2	02/25/08 16:13	aeh/erf

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		171			mg/L	2	20	02/26/08 0:00	jlf
Carbonate as CaCO3		13	B		mg/L	2	20	02/26/08 0:00	jlf
Hydroxide as CaCO3			U		mg/L	2	20	02/26/08 0:00	jlf
Total Alkalinity		184			mg/L	2	20	02/26/08 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.5			%			03/07/08 0:00	calc
Sum of Anions		6.7			meq/L	0.1	0.5	03/07/08 0:00	calc
Sum of Cations		6.5			meq/L	0.1	0.5	03/07/08 0:00	calc
Chloride	M300.0 - Ion Chromatography	14.3		*	mg/L	0.5	3	03/07/08 0:17	aml/ccp
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	02/29/08 12:24	jlf
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2	1.7			mg/L	0.2	1	03/07/08 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1.7		*	mg/L	0.2	1	02/22/08 20:44	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction		U	*	mg/L	0.01	0.05	02/22/08 21:42	pjb
Residue, Filterable (TDS) @180C	160.1 / SM2540C	420		*	mg/L	10	20	02/28/08 10:48	cas
Sulfate	300.0 - Ion Chromatography	123		*	mg/L	1	5	03/07/08 0:35	aml/ccp
TDS (calculated)	Calculation	394			mg/L	10	50	03/07/08 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.07						03/07/08 0:00	calc

Arizona license number: AZ0102

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67812***

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240781													
WG240781PBW2	PBW	02/25/08 15:18				U	mg/L		-20	20			
WG240781LCSW5	LCSW	02/25/08 15:30	WC080131-1	820		860.2	mg/L	104.9	90	110			
WG240781PBW3	PBW	02/25/08 18:42				U	mg/L		-20	20			
WG240781LCSW8	LCSW	02/25/08 18:54	WC080131-1	820		870.7	mg/L	106.2	90	110			
WG240781PBW4	PBW	02/25/08 22:14				U	mg/L		-20	20			
WG240781LCSW11	LCSW	02/25/08 22:28	WC080131-1	820		884.8	mg/L	107.9	90	110			
L67820-03DUP	DUP	02/26/08 8:57			639	694.9	mg/L				8.4	20	
WG240781LCSW14	LCSW	02/26/08 9:10	WC080131-1	820		882.2	mg/L	107.6	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240749													
WG240749ICV	ICV	02/22/08 17:26	II080115-3	100		96.63	mg/L	96.6	95	105			
WG240749ICB	ICB	02/22/08 17:30				U	mg/L		-0.6	0.6			
WG240749LFB	LFB	02/22/08 17:45	II080214-5	67.97008		67.7	mg/L	99.6	85	115			
L67798-02AS	AS	02/22/08 18:46	II080214-5	67.97008	.3	64.8	mg/L	94.9	85	115			
L67798-02ASD	ASD	02/22/08 18:49	II080214-5	67.97008	.3	65.88	mg/L	96.5	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
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	19.98		20.32	mg/L	101.7	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG240853LFB	LFB	03/06/08 15:32	WI080128-9	30		29.36	mg/L	97.9	90	110			
L67781-05AS	AS	03/06/08 21:16	WI080306-2	30	U	30.39	mg/L	101.3	90	110			
L67781-05DUP	DUP	03/06/08 21:34			U	U	mg/L				0	20	RA

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240977													
WG240977ICV	ICV	02/29/08 9:25	WC080227-1	2		2.04	mg/L	102	90	110			
WG240977ICB	ICB	02/29/08 9:32				U	mg/L		-0.3	0.3			
WG240977LFB1	LFB	02/29/08 9:48	WC080226-1	5		5.46	mg/L	109.2	90	110			
WG240977LFB2	LFB	02/29/08 11:16	WC080226-1	5		5.16	mg/L	103.2	90	110			
L67812-01AS	AS	02/29/08 12:17	WC080226-1	5	.2	5.56	mg/L	107.2	90	110			
L67812-01DUP	DUP	02/29/08 12:20			.2	.2	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
WG240749													
WG240749ICV	ICV	02/22/08 17:26	II080115-3	100		99.42	mg/L	99.4	95	105			
WG240749ICB	ICB	02/22/08 17:30				U	mg/L		-0.6	0.6			
WG240749LFB	LFB	02/22/08 17:45	II080214-5	54.96908		55.35	mg/L	100.7	85	115			
L67798-02AS	AS	02/22/08 18:46	II080214-5	54.96908	U	51.42	mg/L	93.5	85	115			
L67798-02ASD	ASD	02/22/08 18:49	II080214-5	54.96908	U	51.82	mg/L	94.3	85	115	0.77	20	

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67812***

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
WG240762													
WG240762ICV	ICV	02/22/08 19:40	WI071212-1	2.416		2.424	mg/L	100.3	90	110			
WG240762ICB	ICB	02/22/08 19:41				U	mg/L		-0.06	0.06			
WG240762LFB	LFB	02/22/08 19:46	WI070911-4	2		2.009	mg/L	100.5	90	110			
WG240762ICV1	ICV	02/22/08 20:32	WI071212-1	2.416		2.404	mg/L	99.5	90	110			
WG240762ICB1	ICB	02/22/08 20:33				U	mg/L		-0.06	0.06			
L67812-01AS	AS	02/22/08 20:43	WI070911-4	4	2.99	7.259	mg/L	106.7	90	110			
L67812-02DUP	DUP	02/22/08 20:45			1.7	1.77	mg/L				4	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
WG240762													
WG240762ICV	ICV	02/22/08 19:40	WI071212-1	.609		.625	mg/L	102.6	90	110			
WG240762ICB	ICB	02/22/08 19:41				U	mg/L		-0.03	0.03			
WG240762LFB	LFB	02/22/08 19:46	WI070911-4	1		1.023	mg/L	102.3	90	110			
WG240762ICV1	ICV	02/22/08 20:32	WI071212-1	.609		.627	mg/L	103	90	110			
WG240762ICB1	ICB	02/22/08 20:33				U	mg/L		-0.03	0.03			
WG240762ICV1	ICV	02/22/08 21:36	WI071212-1	.609		.635	mg/L	104.3	90	110			
WG240762ICB1	ICB	02/22/08 21:38				U	mg/L		-0.03	0.03			
L67812-01AS	AS	02/22/08 21:40	WI070911-4	1	U	1.025	mg/L	102.5	90	110			
L67812-02DUP	DUP	02/22/08 21:43			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
WG240797													
WG240797ICV	ICV	02/25/08 14:33	II080115-3	20		19.95	mg/L	99.8	95	105			
WG240797ICB	ICB	02/25/08 14:37				U	mg/L		-0.9	0.9			
WG240797LFB	LFB	02/25/08 14:49	II080214-5	99.76186		101.04	mg/L	101.3	85	115			
L67797-04AS	AS	02/25/08 15:36	II080214-5	99.76186	10.6	113.13	mg/L	102.8	85	115			
L67797-04ASD	ASD	02/25/08 15:39	II080214-5	99.76186	10.6	115.65	mg/L	105.3	85	115	2.2	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240937													
WG240937PBW	PBW	02/28/08 10:45				U	mg/L		-20	20			
WG240937LCSW	LCSW	02/28/08 10:46	PCN28838	260		292	mg/L	112.3	80	120			
L67837-05DUP	DUP	02/28/08 11:00			20	U	mg/L				200	20	RA

Hydro Geo Chem, Inc.
Project ID: 872002.2

ACZ Project ID: ***L67812***

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG240797													
WG240797ICV	ICV	02/25/08 14:33	II080115-3	100		97.3	mg/L	97.3	95	105			
WG240797ICV	ICV	02/25/08 14:33	II080115-3	100		99.41	mg/L	99.4	95	105			
WG240797ICB	ICB	02/25/08 14:37				U	mg/L		-6	6			
WG240797ICB	ICB	02/25/08 14:37				U	mg/L		-0.9	0.9			
WG240797LFB	LFB	02/25/08 14:49	II080214-5	98.21624		101.64	mg/L	103.5	85	115			
WG240797LFB	LFB	02/25/08 14:49	II080214-5	98.21624		99.1	mg/L	100.9	85	115			
L67797-04AS	AS	02/25/08 15:36	II080214-5	98.21624	161	254.5	mg/L	95.2	85	115			
L67797-04AS	AS	02/25/08 15:36	II080214-5	98.21624	161	249.66	mg/L	90.3	85	115			
L67797-04ASD	ASD	02/25/08 15:39	II080214-5	98.21624	161	255.05	mg/L	95.8	85	115	1.56	20	
L67797-04ASD	ASD	02/25/08 15:39	II080214-5	98.21624	161	258.5	mg/L	99.3	85	115	1.56	20	

Sulfate 300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG241202													
WG241202ICV	ICV	03/06/08 14:56	WI080220-1	50.1		50.51	mg/L	100.8	90	110			
WG241202ICB	ICB	03/06/08 15:14				U	mg/L		-1.5	1.5			
WG240853LFB	LFB	03/06/08 15:32	WI080128-9	30		30.26	mg/L	100.9	90	110			
L67781-05AS	AS	03/06/08 21:16	WI080306-2	30	U	29.59	mg/L	98.6	90	110			
L67781-05DUP	DUP	03/06/08 21:34			U	U	mg/L				0	20	RA

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

Inorganic Extended Qualifier Report

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67812***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L67812-01	WG241202	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).
	WG240977	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).
	WG240762	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).
	WG240937	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).
	WG241202	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).
L67812-02	WG241202	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).
	WG240977	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).
	WG240762	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).
	WG240937	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).
	WG241202	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).

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

Certification Qualifiers

Hydro Geo Chem, Inc.

ACZ Project ID: ***L67812***

No certification qualifiers associated with this analysis

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67812
Date Received: 2/22/2008
Received By:
Date Printed: 2/22/2008

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) 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 (℃)	Rad (µR/hr)
NA5542	1.1	15

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

Notes

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

Sample Receipt

Hydro Geo Chem, Inc.
872002.2

ACZ Project ID: L67812
Date Received: 2/22/2008
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L67812-01	LAWSONTVI875		Y									
L67812-02	GARNER557		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: _____

ACZ Laboratories, Inc. L67812

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

CHAIN of CUSTODY

Report to:

Name: Dan Simpson
Company: HydroGeo Chem Inc.
E-mail: dans@hgcinc.com
Address: 51 W. Wetmore Rd Tucson, AZ 85705
Telephone: 520) 293-1500 x133

Copy of Report to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Telephone: 520) 293-1500 x112

Invoice to:

Name: Jim Norris
Company: HGC Inc.
E-mail: jimn@hgcinc.com
Address: 51 W. Wetmore Rd. Tucson AZ 85705
Telephone: 520) 293-1500 x112

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

PROJECT INFORMATION

Quote #: FMCQB-GW
Project/PO #: 872002.2
Reporting state for compliance testing: AZ
Sampler's Name: Mark Arneson
Are any samples NRC licensable material? No

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Ca Na Mg K	TDS, SO_4^{2-}, NO_3^-, Cl^-, F	Alk					
LAWSONTVI875	2/21/08: 0930	GW	3	X	X	X					
GARNER557	2/21/08: 1310	GW	3	X	X	X					

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

REMARKS/ SAMPLE DISCLOSURES

PAGE of

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	2/21/08: 1624		2/22/08 09:45

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

APPENDIX E

HYDRO GEO CHEM, INC. GROUNDWATER SAMPLING FORMS

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Bill ID:	ANDERSON	Date:	3-20-08
ADWR No.	613396	Weather:	clear
Location:	3272 Naco Hwy S, Bisbee, AZ	Collected By:	MA

WELL DATA

Well Depth (ft bls):	236	Static Water Level (ft bmp):	145.46
Casing Diameter (in):	8"	Date/Time:	3-20-08 10:05
Well Use:	all domestic purposes	Point of Measurement:	TOC
3 Casing Volumes:	236x3 = 709	GPS:	12R 601134 utm 3468816
		Elevation:	4596

FIELD SAMPLING DATA

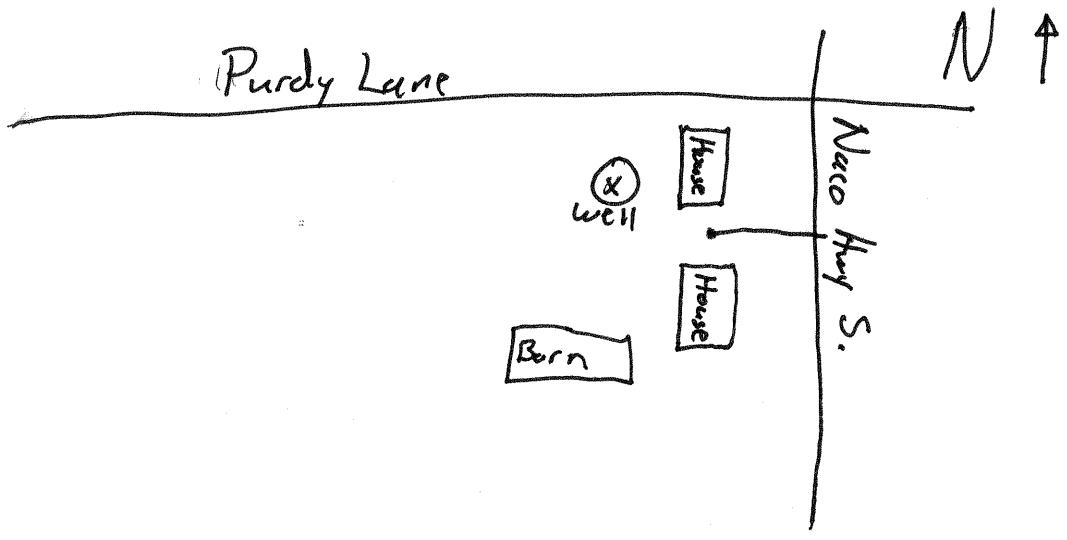
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1010	10	0	7.27	16.0	1154	clear	No	open bib at 1010
1015	"	50	7.25	20.5	1150	"	"	
1030	"	200	7.21	21.5	1176	"	"	
1045	"	350	7.24	21.6	1179	"	"	
1100	"	500	7.27	21.6	1180	"	"	
1115	"	650	7.24	21.2	1169	"	"	
1130	"	800	7.25	21.1	1176	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
ANDERSON	11:35	Plastic	250ml	1	300.0	None	Filtered

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	870001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
ell ID:	BANKS	Date:	2/27/08
ADWR No.	55 - 647986	Weather:	sunny
Location:	620 E Mulberry Lane	Collected By:	MA & KW

WELL DATA

Well Depth (ft bls):	435.8 (owner)	Static Water Level (ft bmp):	+22.97 ← unreliable cant get good reading obstructed
Casing Diameter (in):	6"	Date/Time:	2/27/08 13:21
Well Use:	domestic	Point of Measurement:	T.O.C
3 Casing Volumes:	1 casing 334 x 3 = 1002	GPS:	12R 0606982. UTM 3469205
		Elevation:	4654

FIELD SAMPLING DATA

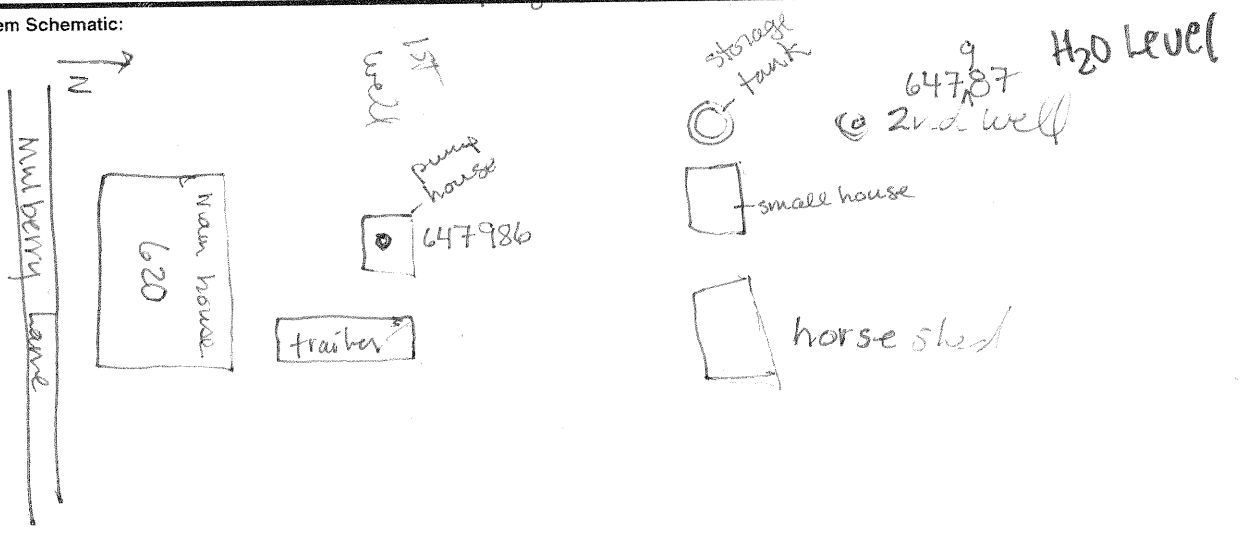
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
14:06	8	0	7.49	21.7	990	none	none	
14:10	8	32	7.51	21.7	991	"	"	
14:15	"	72	7.51	21.9	990	"	"	
14:20	"	122	7.53	21.8	986	"	"	
14:25	"	162	7.53	21.8	980	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BANKS	14:30	plastic	250	1	300.0	N	filtered

Additional Comments: ADWR Reg. - Existing wells reports well depth @ 445' bls. 435.8' is written on pump house. Poss obstruction 143.9. Very dirty. We are using 208' WL from other well for purge time calculation. 2 households using this well

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	BF-1	Date:	03/04/08
ADWR No.	55- 539783	Weather:	Sunny
Location:	D. 23-24- 36bb	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	400	Static Water Level (ft bmp):	348.99
Casing Diameter (in):	4"	Date/Time:	03/04/08 12:39
Well Use:	Monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	33 gal x 3 = 99	GPS:	12R 0604170 x 3472150 UTM
		Elevation:	4807

FIELD SAMPLING DATA

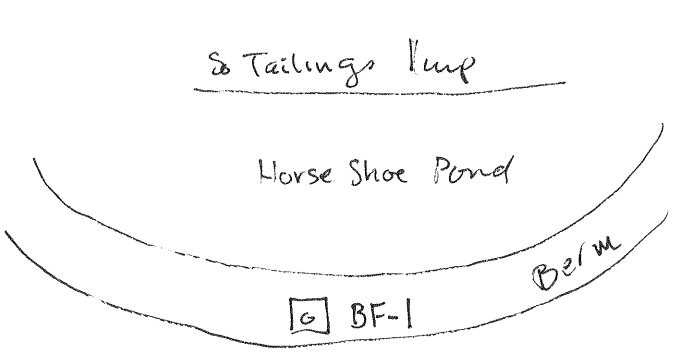
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
12:48	8	0	6.53	21.8	2730	Slightly cldy	none	few dark seeds + light
12:52	"	32	6.43	21.9	2728	"	"	colored suspended fines
12:54	ran out of water							
13:10	8	0	6.46	21.9	2745	"	none	brown flakes
			64					
	Total discharge =		64 gallons					

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BF-1	13:10	plastic	250	3	300.0	Y/N /N	

Additional Comments: Well ran out of water after 8 minutes. Allowed to recharge 15 minutes, purge hose amount, then collect sample

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	55-577927	Date:	2-6-08
ADWR No.	BIMA	Weather:	CLEAR
Location:	Arizona St, Bisbee Junction	Collected By:	API MA

WELL DATA

Well Depth (ft bls):	460'	Static Water Level (ft bmp):	OBSTRUCTION AT 350ft.
Casing Diameter (in):	4"	Date/Time:	2-6-08 1500
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	ap 78 x 3 = 234	GPS: UTM:	3471859 12R 0606003
	234 ÷ 10 = 24 Min	Elevation:	4794

FIELD SAMPLING DATA

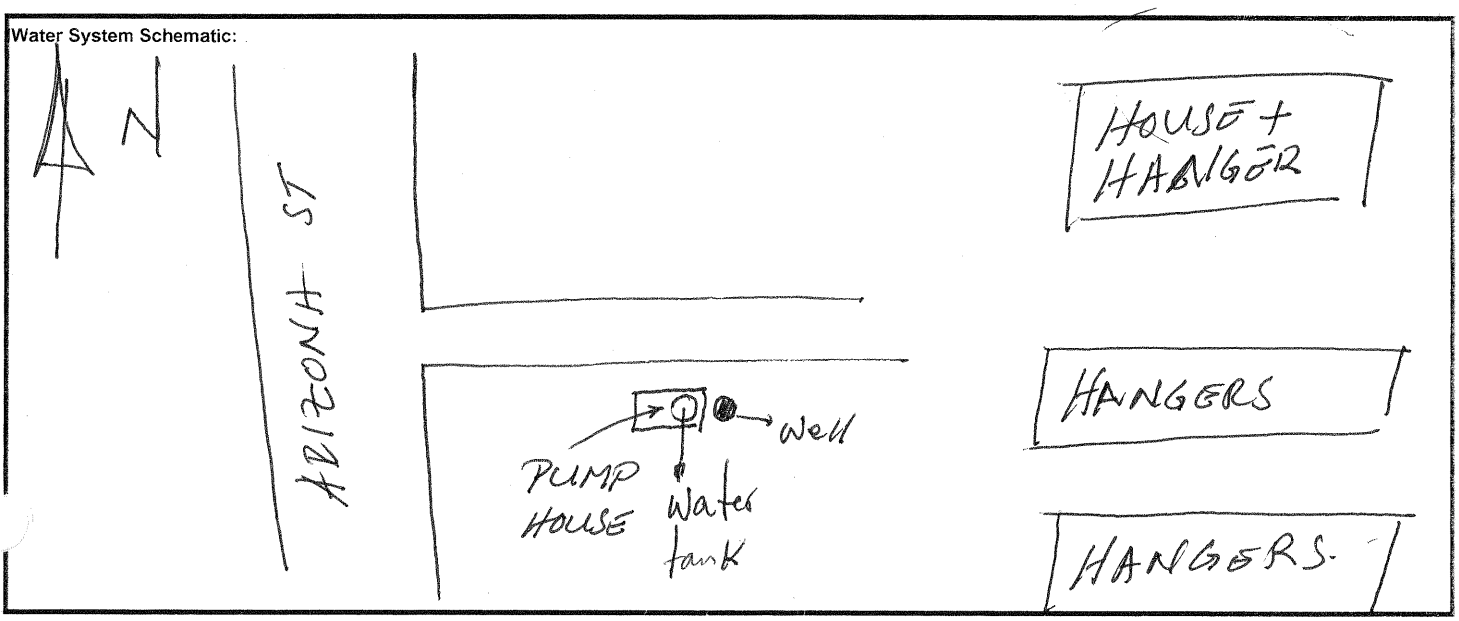
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1523	10		6.79	17.8	1330	CLEAR	N	—
1524	"		6.65	18.5	1335	"	"	—
1527	"		6.68	20.3	1342	"	"	—
1532	"		6.66	21.1	1324	"	"	—
1536	"		6.68	22.0	1342	"	"	—
1545	"		6.69	22.2	1335	"	"	—
	TOTAL DISCHARGE = 980 Gal.							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BIMA	1550	PLASTIC	125/250/500ml	3	300.0	Y/N/N	—
							—

Additional Comments: Mr. Sievold indicated well depth is 460' and well casing is 4"

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001-0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	BLOMMER	Date:	02/05/2008
ADWR No.	~~645536~~ 633472	Weather:	CLEAR
Location:	Barnett Rd San Jose	Collected By:	AP / MA

WELL DATA

Well Depth (ft bls):	350	Static Water Level (ft bmp):	Obstruction at 277'
Casing Diameter (in):	6"	Date/Time:	2-5-08 10:00
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	will purge for stabil.	GPS: UTM	347153 12 R 0602726
		Elevation:	4764 (ft)

FIELD SAMPLING DATA

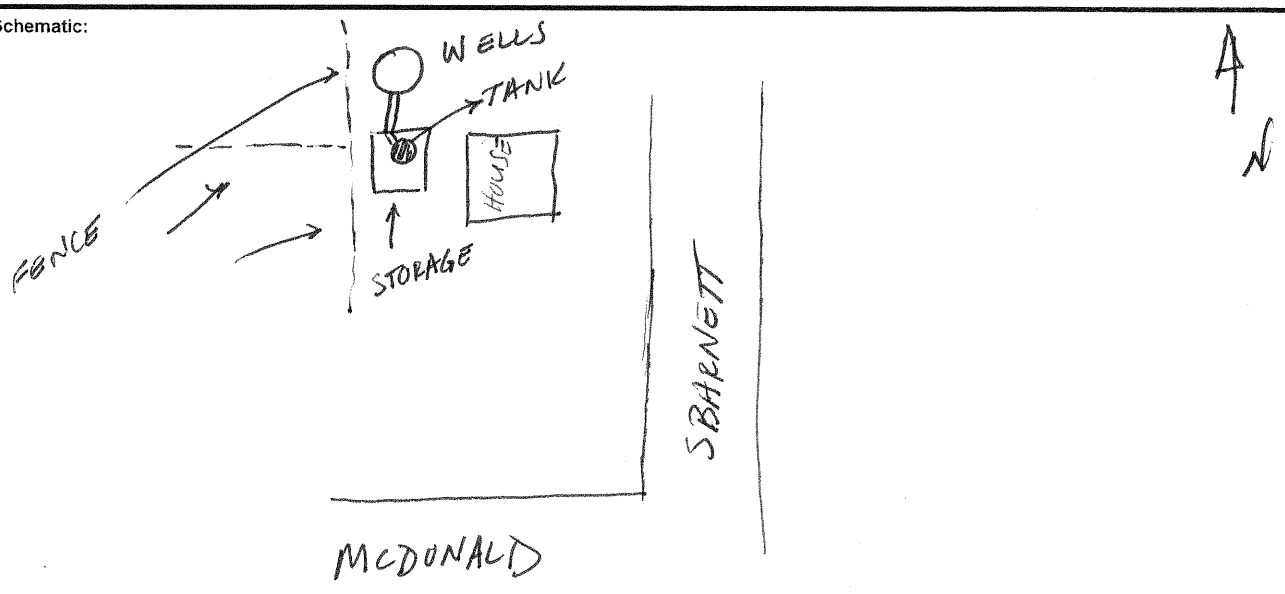
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1000	10		7.34	17.0	720	CLEAR	N	SOME SEDIMENT
1005	"		7.47	17.8	716	"	"	"
1010	"		7.45	20.2	717	"	"	"
1015	"		7.43	20.2	714	CLOUDY	N	BROWNISH and SEDIMENT
TOTAL DISCHARGE = 2006.								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BLOMMER	1020	PLASTIC	250	1	300.0	N	—

Additional Comments: ONLY ONE WELL WAS FOUND ON THE PROPERTY AND IT WAS IDED AS "BLOMMER"

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	BULLARD	Date:	4-23-08
ADWR No.	55-602134	Weather:	Clear
Location:	EAST Hull Ranch Rd.	Collected By:	MB

WELL DATA

Well Depth (ft bls):	300	Static Water Level (ft bmp):	Obstructed at 258'
Casing Diameter (in):	6"	Date/Time:	4-23-08 11:45
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:		GPS:	12R 602133 3470982
		Elevation:	4655

FIELD SAMPLING DATA

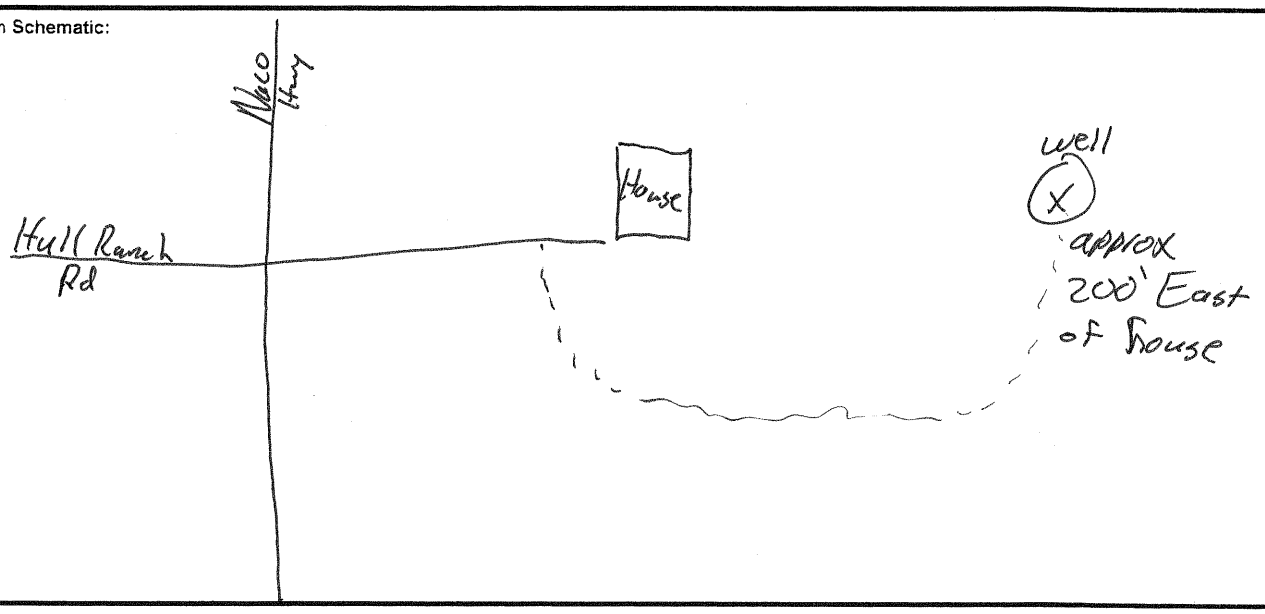
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well is not operational; H_2O level only - OBSTRUCTION

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	BURKE	Date:	02/07/08
ADWR No.	212268	Weather:	CLEAR
Location:		Collected By:	AP/MHRA.

WELL DATA

Well Depth (ft bis):	780	Static Water Level (ft bmp):	~600ft
Casing Diameter (in):	6"	Date/Time:	02/07/08
Well Use:		Point of Measurement:	TOC
3 Casing Volumes:	Bailer	GPS: UTM:	3473031 12R 0602231
		Elevation:	4833

FIELD SAMPLING DATA

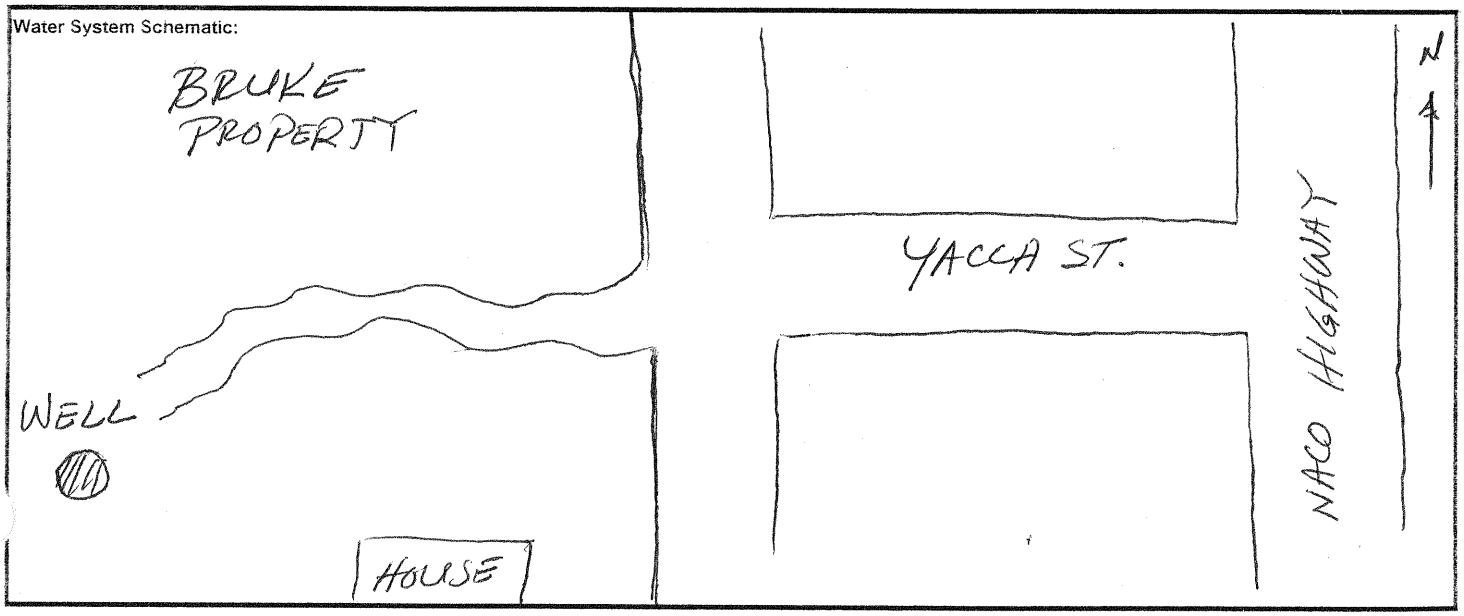
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1235	NA	—	7.17	23.0	411	CLEAR	N	COMPOSITE

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BURKE	1240	PLASTIC	125/250	3	300.0	Y/N/N	
			500				

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	CAMPBELL	Date:	02/05/2008
ADWR No.	215509	Weather:	CLEAR
Location:		Collected By:	A/M

WELL DATA

Well Depth (ft bls):	NA	Static Water Level (ft bmp):	180.60
Casing Diameter (in):	5"	Date/Time:	02/05/2008
Well Use:	DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	Bailer	GPS: UTM	3469322 R12 0606416
		Elevation:	4687

FIELD SAMPLING DATA

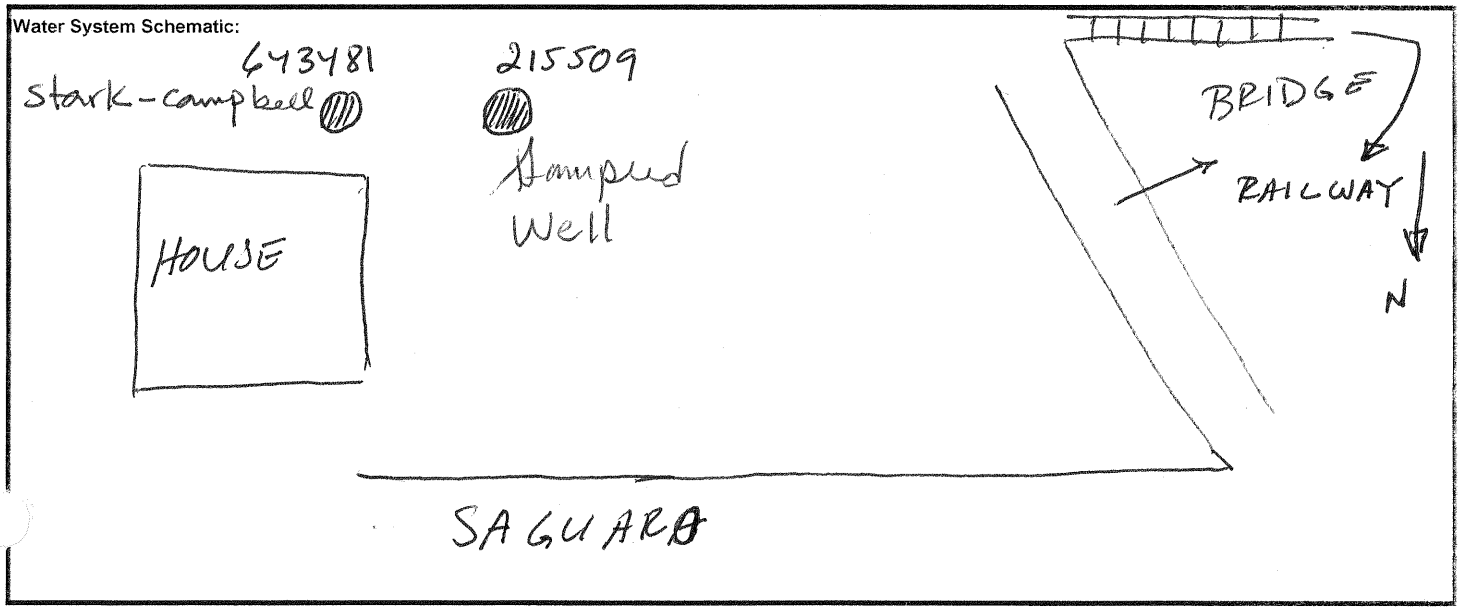
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1500	NA	—	7.87	18.3	823	BROWNISH	N	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CAMPBELL	1515	PLASTIC	250	1	300.0	N	

Additional Comments: THIS WAS COLLECTED BY BAILER
THERE IS NO PUMP AT EITHER WELL

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	CHAMBERS	Date:	3-6-08
ADWR No.	55-629807	Weather:	sunny, cool
Location:	3792 S. Towner	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	245	Static Water Level (ft bmp):	— unable to measure
Casing Diameter (in):	6	Date/Time:	due to well design
Well Use:	domestic	Point of Measurement:	—
3 Casing Volumes:	unknown	GPS:	UTM 3467385 x 0600024
		Elevation:	4592

FIELD SAMPLING DATA

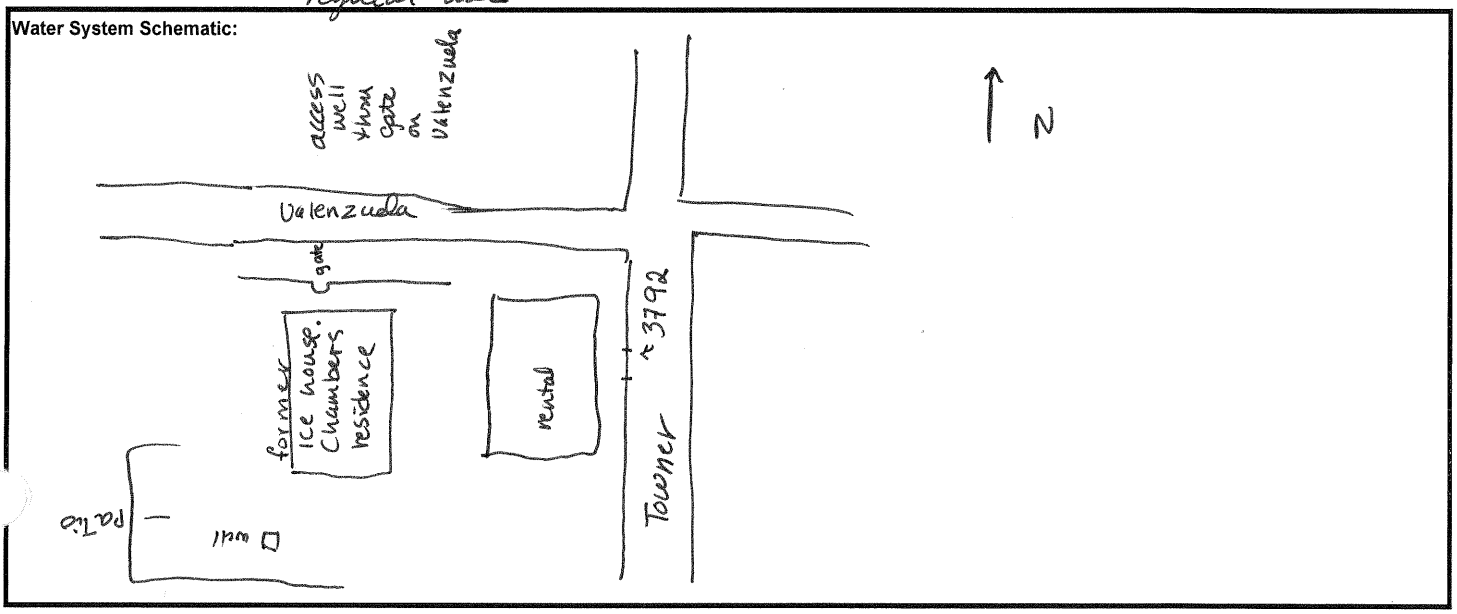
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
930	5	0	7.43	13.1	415	Non clear	None	
932	5	10	7.60	16.4	411	"	"	
937	5	35	7.70	17.4	408	"	"	
942	5	60	7.72	17.5	408	"	"	
947	5	85	7.73	17.8	408	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
CHAMBERS	0950	plastic	250	1	300.0	N	filtered
DUP030608	"	"	"	1	300.0	N	"

Additional Comments: FB030608 — former Sloan property. Old address before the big re-numbering was 221 D Street. D Street now is Towner. Purge for stability. Well in regular use

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	COB MW-1	Date:	2-22-08
ADWR No.	55903992	Weather:	Clear
Location:	Bob Kasan Place at 940 Purdy Ln Bisbee, AZ 85603	Collected By:	Arnesen / Thompson

WELL DATA

Well Depth (ft bls):	420'	Static Water Level (ft bmp):	232.47
Casing Diameter (in):	6"	Date/Time:	2-22-08 / 8:00
Well Use:	Industrial	Point of Measurement:	Top of Casing
3 Casing Volumes:	1469 gal.	GPS:	12R 0603155 UTM 3469888
		Elevation:	4701' amsl

FIELD SAMPLING DATA

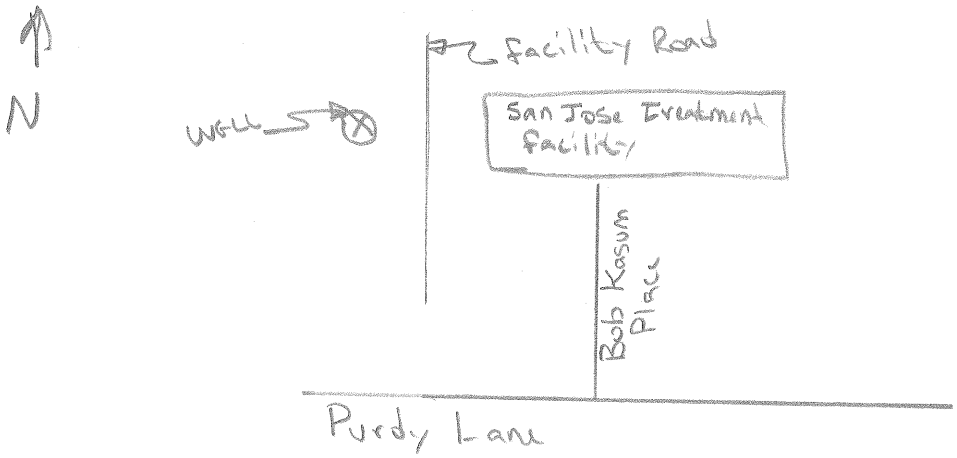
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
811	10	10	6.99	19.5	1412	Clear	None	810 open discharge valve
813	10	30	7.00	20.3	1388	↓	↓	
816	10	60	6.92	21.1	1392			
819	10	90	6.93	21.2	1401	↓	↓	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Pump in Continuous operation for treatment plant water Supply. Calculated purge was not deemed necessary

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	COB-MW-2	Date:	2-22-08
ADWR No.	55-903484	Weather:	Clear
Location:	On Golf Course Property in field east of Golf Cart Road about 60' South of Green Bush Draw	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bls):	162	Static Water Level (ft bmp):	122.85
Casing Diameter (in):	4"	Date/Time:	2-22-08/933
Well Use:	Monitoring	Point of Measurement:	Top of Casing
3 Casing Volumes:	77 gal	GPS:	12R 0600975 UTM 3468117
		Elevation:	4545' AMSL

FIELD SAMPLING DATA

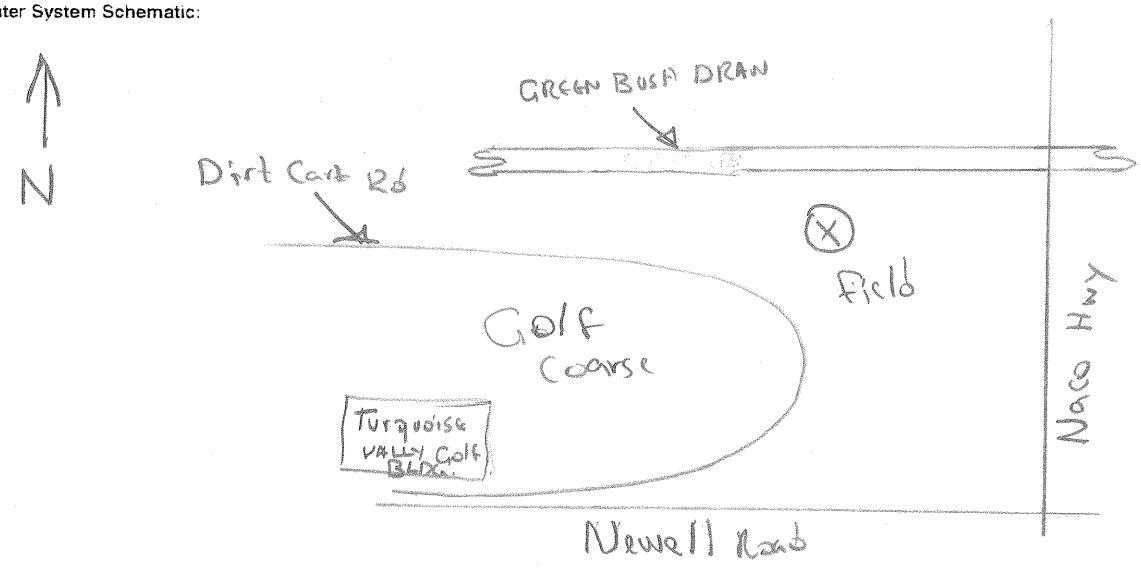
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
951	10	10	7.32	19.3	421	Clear	None	950 Pump on
956	10	60	7.30	20.1	413	↓	↓	
959	10	90	7.28	20.2	417	↓	↓	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
COB-MW-2	10:00	Plastic	125/250/250	3	300.0	NH_4	Full suite
DUP022208	10:00	Plastic	125/250/250	3	300.0	"	Duplicate

Additional Comments: Duplicate Sample Collected at this site
Field blank FB022208

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	871002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	COB - MW-3	Date:	2/28/08
ADWR No.	906823	Weather:	Sunny
Location:	AZ Water Co. D-24-23-13 aac	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	300 (Gaston)	Static Water Level (ft bmp):	120.84
Casing Diameter (in):	4	Date/Time:	2/28/08
Well Use:	monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	116 gal x 3 = 348 117 gal x 3 = 351	GPS:	12R 0599169 x UTM 3468726
		Elevation:	4530

FIELD SAMPLING DATA

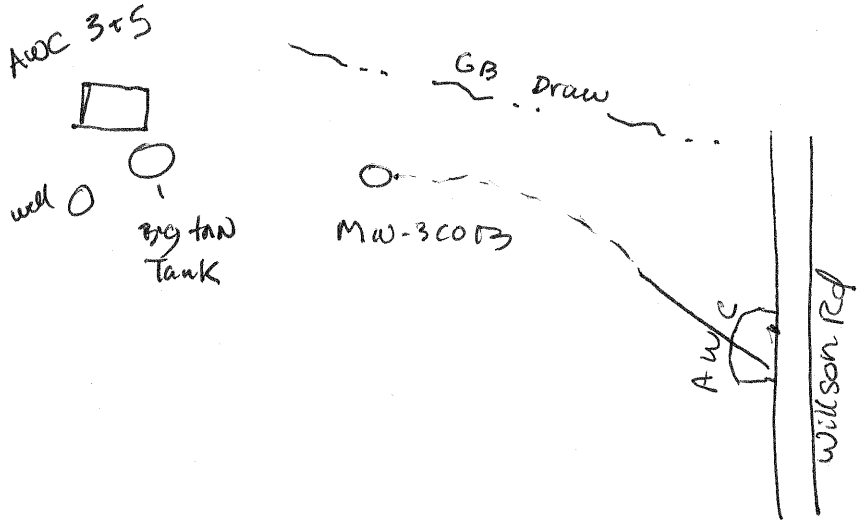
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
10:47	20	20	7.57	21.2	473	none/	none	Pump on 1046
10:51	"	100	7.43	21.0	420	" Clear	"	
10:54	"	160	7.39	21.1	420	"	"	
10:57	"	220	7.42	20.9	420	"	"	
11:00	"	280	7.38	21.1	417	"	"	
11:03	"	340	7.38	21.0	418	"	"	
11:06	"	400	7.39	21.0	416	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
MW-3 COB	11:10	plastic	125 250 250	3	300.0	Y/N/N	

Additional Comments: COB Sentinel well on AWC property. We were escorted by Gaston from SJWWTF

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872003.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	COB - WARREN LAGOON	Date:	2-22-08
ADWR No.	55-593116	Weather:	Clear
Location:	ABout 1/2 mile North of Airport. Then West ON COB Dirt access Road just Southof 4th retention Pond.	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bls):	150'	Static Water Level (ft bmp):	56.50
Casing Diameter (in):	4"	Date/Time:	2-22-08 / 844
Well Use:	Monitoring	Point of Measurement:	Top of Casing
3 Casing Volumes:	183 gal	GPS:	R12 D606356 UTM 3472504
		Elevation:	4847' AMSL

FIELD SAMPLING DATA

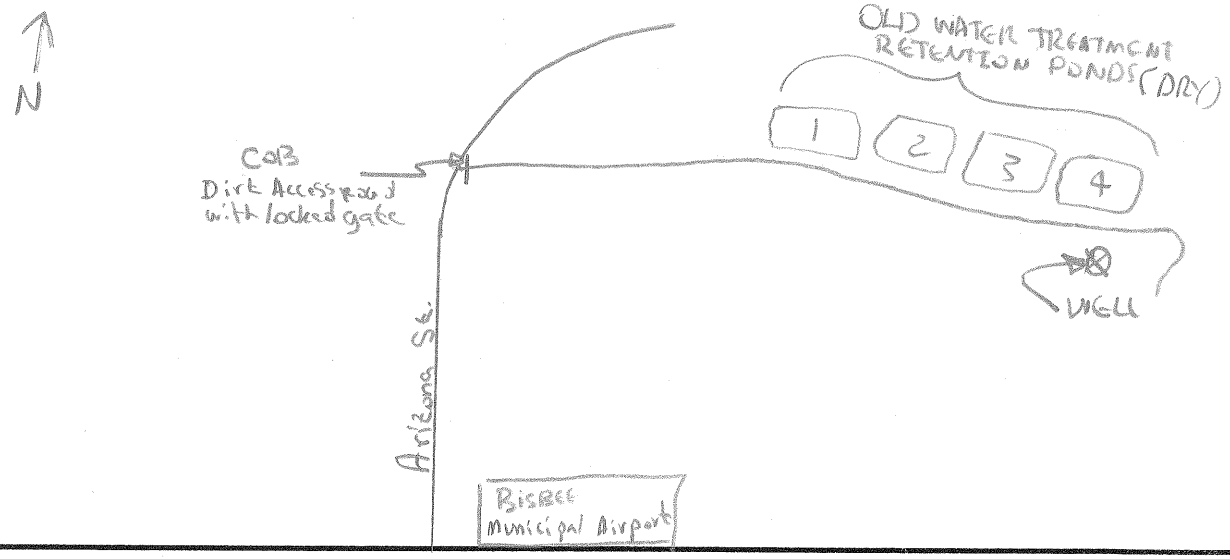
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
855	10	10	7.12	18.9	916	Clear	None	Pump on at 854
857	10	30	7.00	20.1	922	↓	↓	
902	10	80	6.98	20.6	921			
906	10	120	6.99	20.6	919			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
WARREN LAGOONCOB	9:10	Plastic	125/250/250	3	300.0	HNO3/Nonpreserved	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	COOPER, Charles	Date:	03/04/08
ADWR No.	55-637069	Weather:	sunny, cool
Location:	1497 W. Purdy Lane	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	220	Static Water Level (ft bmp):	155.08 bmp
Casing Diameter (in):	6	Date/Time:	03/04/08 8:03
Well Use:	domestic	Point of Measurement:	T.O.C.
3 Casing Volumes:	95.4x3=286	GPS:	12R 0601350 x UTM 3468915
		Elevation:	4607

FIELD SAMPLING DATA

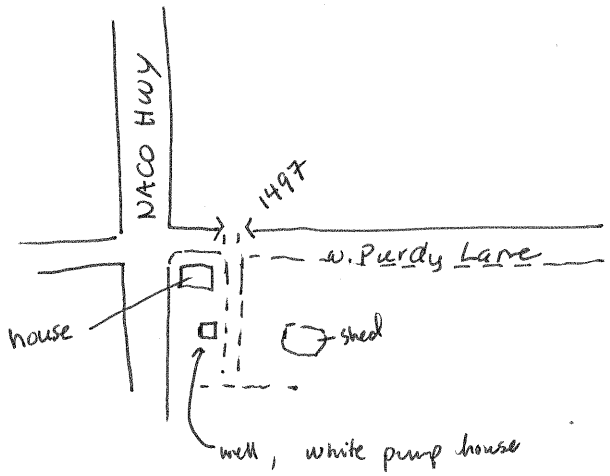
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
8:22	6	6	6.95	19.5	1902	clear	none	few light brown flakes
8:26	"	30	7.01	19.9	1914	"	"	very few flakes
8:30	"	54	7.02	19.9	1914	"	"	" " "
8:34	"	78	7.05	20.4	1908	"	"	" " "
8:41	"	120	7.05	20.0	1910	"	"	no more flakes
8:48	"	162	7.03	20.9	1909	"	"	"
8:55	"	204	7.02	20.8	1892	"	"	"

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
COOPER, C	9:00	plastic	250	1	300.0	N	filtered

Additional Comments: Family of 4, well is well used. When pump is on it pushes water into leaking u.g. pipe behind shed as well as hose. Discharge is therefore greater overall than 7gpm from bib

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FMI Sierrita Operations
Phase No.	2.2	Date:	3/20/08
Well ID:	COOPER C	Weather:	clear
ADWR No.	55-637069	Collected By:	MA

WELL DATA

Well Depth (ft bls):	220	Time:	12:29
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	154.93	GPS:	12R 601350 3468915
1 Casing Volume (gals):	94.5	Elevation:	4607
3 Casing Volumes (gals):	283.6 36 min purge		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1235	8	8	6.88	24.1	2055	clear	None	openbib@ 1234
1237	8	24	6.89	22.2	2065	↓	↓	
1241	8	56	6.92	21.7	2084			
1246	8	96	6.92	21.6	2086			
1251	8	136	6.92	21.5	2082			
1256	8	176	6.95	21.5	2086			
1301	8	216	6.92	21.4	2088			
1306	8	256	6.92	21.3	2080			
1311	8	296	6.93	21.3	2081	↓	↓	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COOPER C	1315	Plastic	125/250ml	2	EPA 300.0	NO3/None	Filtered
COOPER C	1315	Plastic	250/~~500~~ ml	1	EPA 300.0	None	Unfiltered

Additional Comments: Resampled for Full Suite

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	COOPER, Teresa	Date:	2-14-08
ADWR No.	55- 623564	Weather:	windy, pt cloudy
Location:	2171 S. Naco Hwy San Jose	Collected By:	KW & AP

WELL DATA

Well Depth (ft bls):	325	Static Water Level (ft bmp):	unable to measure
Casing Diameter (in):	6"	Date/Time:	2-14-08
Well Use:	domestic	Point of Measurement:	—
3 Casing Volumes:		GPS:	UTM 3471687 12R 0602138
		Elevation:	4759

FIELD SAMPLING DATA

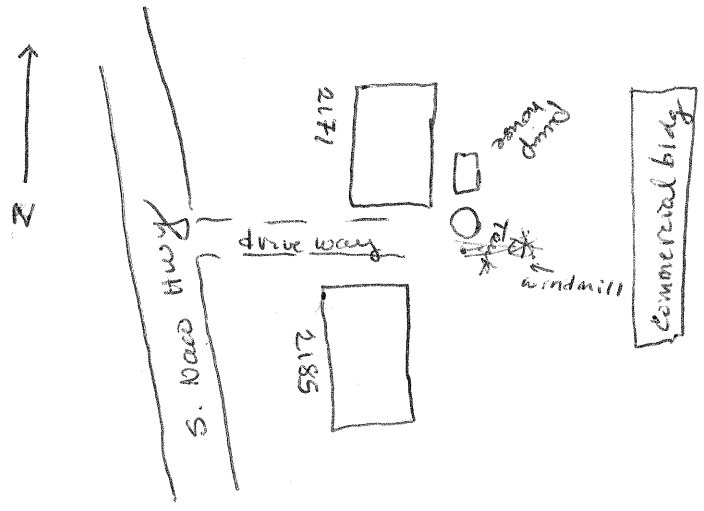
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
9:53	—	—	7.63	14.1	371	clear	none	composite spl
								few brown flakey sediments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
COOPER	10:00	plastic	500/1L/500	3	300.0	Y/N/N	composite

Additional Comments: NO access to take WL or sample from well head. Will take composite sample from storage tank. Pressure tank on/off every 5 minutes. 3 people + one commercial venture using this well

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
ell ID:	Dodson	Date:	2/28/08
ADWR No.	55-644927	Weather:	over cast, Windy
Location:	235 Purdy Lane Bisbee AZ 85603	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bls):	200' bls	Static Water Level (ft bmp):	78' bls measured on 06-2002
Casing Diameter (in):	6"	Date/Time:	2/28/08 / NA
Well Use:	Domestic Supply	Point of Measurement:	Top of Casing
3 Casing Volumes:	537 gal	GPS:	12R 0605799 UTM 3469065
		Elevation:	4664 AMSL

FIELD SAMPLING DATA

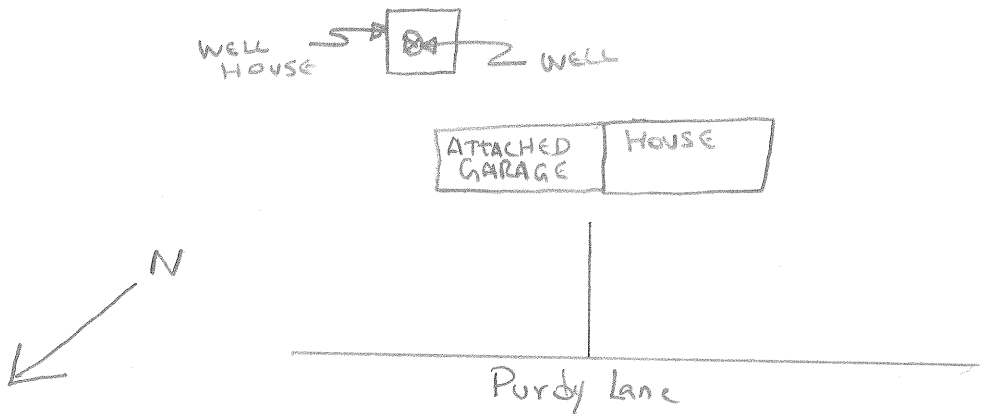
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1136	3	3	7.48	14.1	829	Clear	None	1135 opened hydrant
1140	3	15	7.56	17.6	860	↓	↓	
1144	3	27	7.60	18.1	858	↓	↓	
1147	3	36	7.61	17.3	857	↓	↓	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
DODSON	1150	Plastic	1L/250	3	300.0	HNO3 None	

Additional Comments: Could not sound well as probe was too large for access hole in well cap. → Purged well until Ph/EC and Temp Parameters Stabilized

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	DOUGLASS 791	Date:	2-13-08
ADWR No.	55- 592791	Weather:	Windy, pt. cloudy
Location:	D-24-24-12 bcb NW corner of 40 acre parcel	Collected By:	AP & KW

WELL DATA

Well Depth (ft bls):	200	Static Water Level (ft bmp):	22.11
Casing Diameter (in):	5"	Date/Time:	2-13-08 14:30
Well Use:	unused - future domestic	Point of Measurement:	TOC
3 Casing Volumes:		GPS:	UTM 3470226
		Elevation:	12R 0607629

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

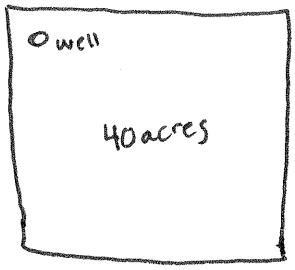
SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well not in use. Water level measured; no sample
No pump, no power. Undeveloped land. Future domestic well

Water System Schematic:

D-24-24-12 BCB



parcel 104-39-004E

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	DOUGLASS 792	Date:	2-13-08
ADWR No.	55-592792	Weather:	windy, partly cloudy
Location:	D-24-24-11dab NW corner of 35.97 acre parcel	Collected By:	AP + KW

WELL DATA

Well Depth (ft bis):	200'	Static Water Level (ft bmp):	87.76
Casing Diameter (in):	5"	Date/Time:	2-13-08
Well Use:	not in use	Point of Measurement:	T.O.C
3 Casing Volumes:		GPS:	UTM 3469831 12R 0607606
		Elevation:	4659

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

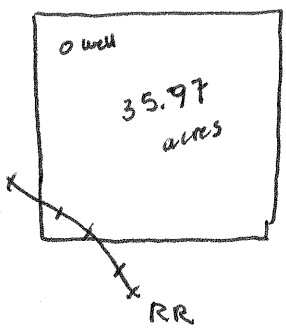
SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well currently not in use. Planned for future domestic use. Measured W.L. only; no sample. No pump, no power. Undeveloped land

Water System Schematic:

D-24-24-11dab



Parcel 101-39-004C

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	EAST	Date:	02/08/2008
ADWR No.	599796	Weather:	CLEAR
Location:	BISBEE JUNCTION	Collected By:	AP/MA

WELL DATA

Well Depth (ft bis):	125 (ft)	Static Water Level (ft bmp):	50.20
Casing Diameter (in):	6"	Date/Time:	02/08/2008
Well Use:		Point of Measurement:	TOC
3 Casing Volumes:	110 x 3 = 330 ÷ 15 = 22 min	GPS: UTM:	3468713 12R 0607076
		Elevation:	

FIELD SAMPLING DATA

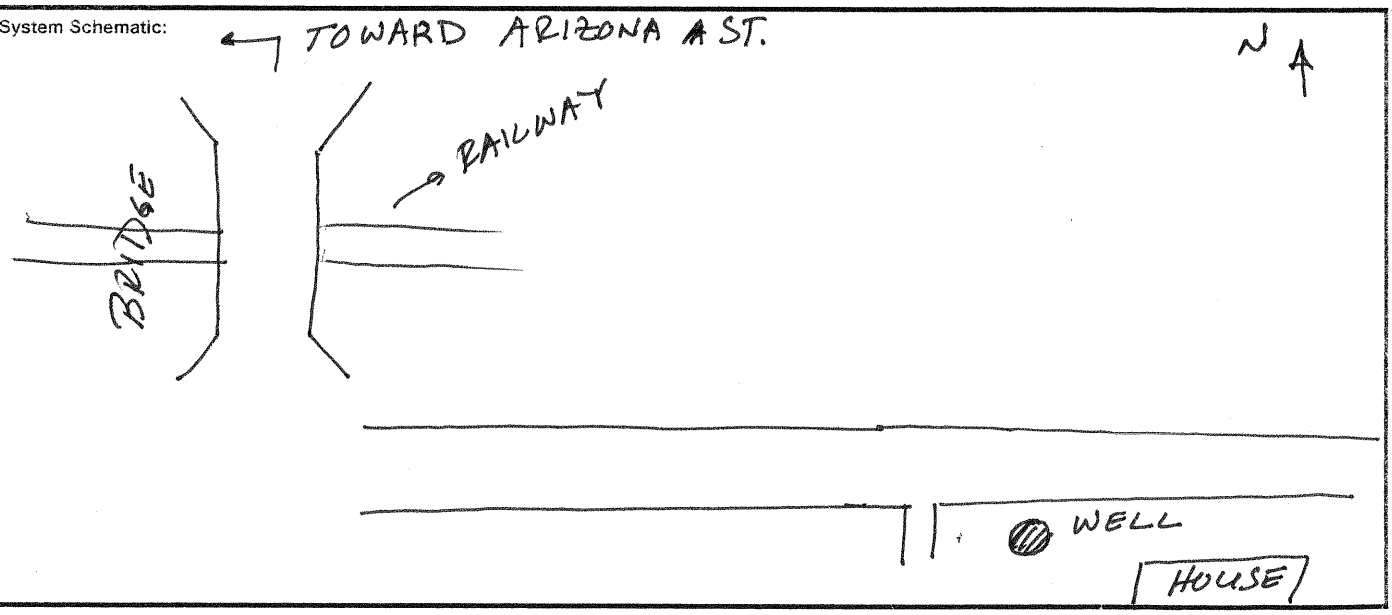
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
0839	15	15	7.07	17.4	562	CLEAR	N	
0841	"	45	7.27	19.1	423	"	"	
0845	"	105	7.42	19.6	416	"	"	
0848	"	150	7.46	19.8	420	"	"	
0856	"	180	7.45	19.9	423	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
EAST	0900	PLASTIC	125/250 500	3	300.0	Y/N/N	-

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	ENGLUND	Date:	02/12/08
ADWR No.	55-565260	Weather:	Sunny, warm
Location:	2331 Coleman Rd San Jose	Collected By:	KW - AP

WELL DATA

Well Depth (ft bls):	320	Static Water Level (ft bmp):	289.47
Casing Diameter (in):	4 1/2	Date/Time:	02/12/08 13:03
Well Use:	~~domestic~~ NDWSW	Point of Measurement:	T.O.C.
3 Casing Volumes:	25 x 3 = 75 7.5 min	GPS:	UTM 3471339 12R 0602548
		Elevation:	4735 ft amsl

FIELD SAMPLING DATA

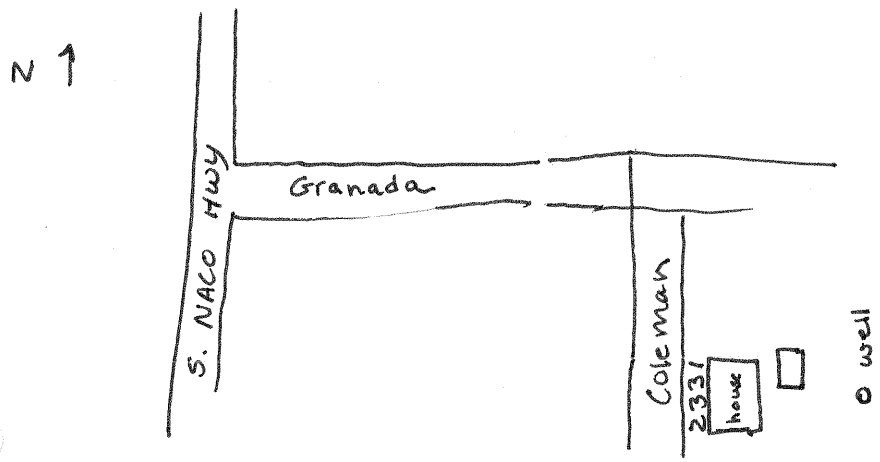
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13.22	10		6.83	21.9	1488	none	none	few brown sediments
13.24	"		6.83	21.7	1470	"	"	few br + wh sediments
13.27	"		6.85	21.6	1469	"	"	trace br + wh seds
13.31	"		6.88	21.6	1467	"	"	"
		TOTAL DISCHARGE = 90 GLS.						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
ENGLUND	13:35	plastic	250	1	300.0	N	

Additional Comments: House for sale, well probably not used for awhile

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	55-805641-L	Date:	3-11-08
ADWR No.	EPPELE	Weather:	Clear, breezy
Location:	8 Mulberry Lane, Bisbee, AZ	Collected By:	MH.

WELL DATA

Well Depth (ft bls):	265	Static Water Level (ft bmp):	29.52
Casing Diameter (in):	8"	Date/Time:	3-11-08
Well Use:	Domestic drinking water / Irrigation	Point of Measurement:	TOC
3 Casing Volumes:	615 = 1 case vol.	GPS:	12R 0607159 UTM 3469230
3 casing Vol = 1845 gal = 205 min		Elevation:	4640

FIELD SAMPLING DATA

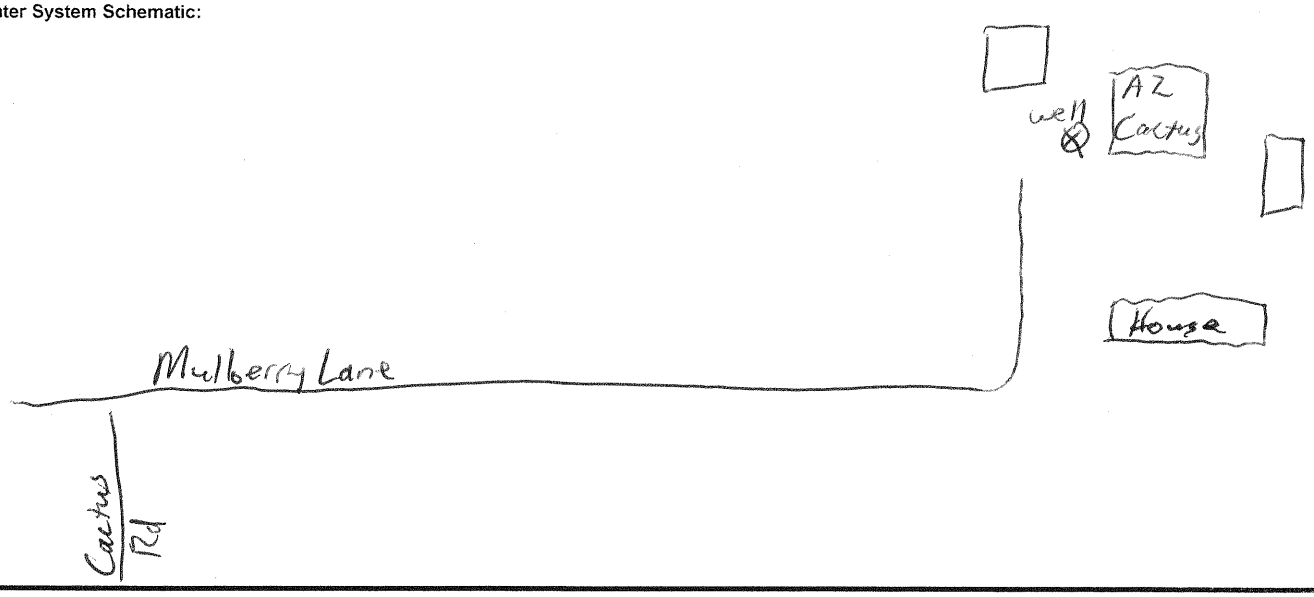
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1143	9	9	7.00	15.6	744	Clear	None	
1146	9	36	7.26	20.1	742			
1151	9	81	7.45	21.2	752			
1203	9	189	7.42	21.6	757			
1212	9	270	7.41	21.3	759			
1243	9	675	7.53	21.4	722			
1255	16	979	7.88	21.4	644	Slight tan	None	
1256	well pumped dry			—	Recovery			
1330			7.98	21.4	646			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
EPPELE 641	1330	Plastic	250ml	1	300.0	None	Filtered 50µ

Additional Comments: Difficult to determine casing dia. but is between 7" and 9"

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	EPPELE642	Date:	3-11-08
ADWR No.	55-805642	Weather:	Clear
Location:	8 Mulberry Lane Bisbee, AZ	Collected By:	MA

WELL DATA

Well Depth (ft bls):	40'	Static Water Level (ft bmp):	20' (1989)
Casing Diameter (in):		Date/Time:	3-11-08 / 1230
Well Use:	Irrigation	Point of Measurement:	
3 Casing Volumes:		GPS:	12R 0607158 UTM 3469173
		Elevation:	4618

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This is a hand-dug well with old windmill retrofitted with a submersable pump but is disconnected and Ted Eppele stated in a phone conversation that this well is no longer in use. The well is covered and I was unable to measure depth to water.

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	EPPELE643	Date:	3-11-08
ADWR No.	55-805643	Weather:	Clear
Location:	8 Mulberry Lane Bisbee, AZ	Collected By:	MA

WELL DATA

Well Depth (ft bls):	165	Static Water Level (ft bmp):	30' (1989)
Casing Diameter (in):	unknown	Date/Time:	3-11-08 / 12:00
Well Use:	Domestic / Irrigation	Point of Measurement:	
3 Casing Volumes:		GPS:	12R 0607219 UTM 3469214
		Elevation:	4593

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well is non-operational and covered by wood flooring of the enclosure, pump wiring and plumbing are disconnected and TEO Eppele stated that this well is no longer in use during phone conversation.

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	FRANCO	Date:	02/06/2008
ADWR No.	500101	Weather:	CLEAR
Location:	3245 S. Franco Loop Bisbee, AZ	Collected By:	API MA

WELL DATA

Well Depth (ft bis):	200'	Static Water Level (ft bmp):	NA
Casing Diameter (in):	6"	Date/Time:	02/06/2008
Well Use:	DOMESTIC	Point of Measurement:	-
3 Casing Volumes:	59x3=177÷25=8 min	GPS: UTM	3468828 12R 0602851
		Elevation:	4619

FIELD SAMPLING DATA

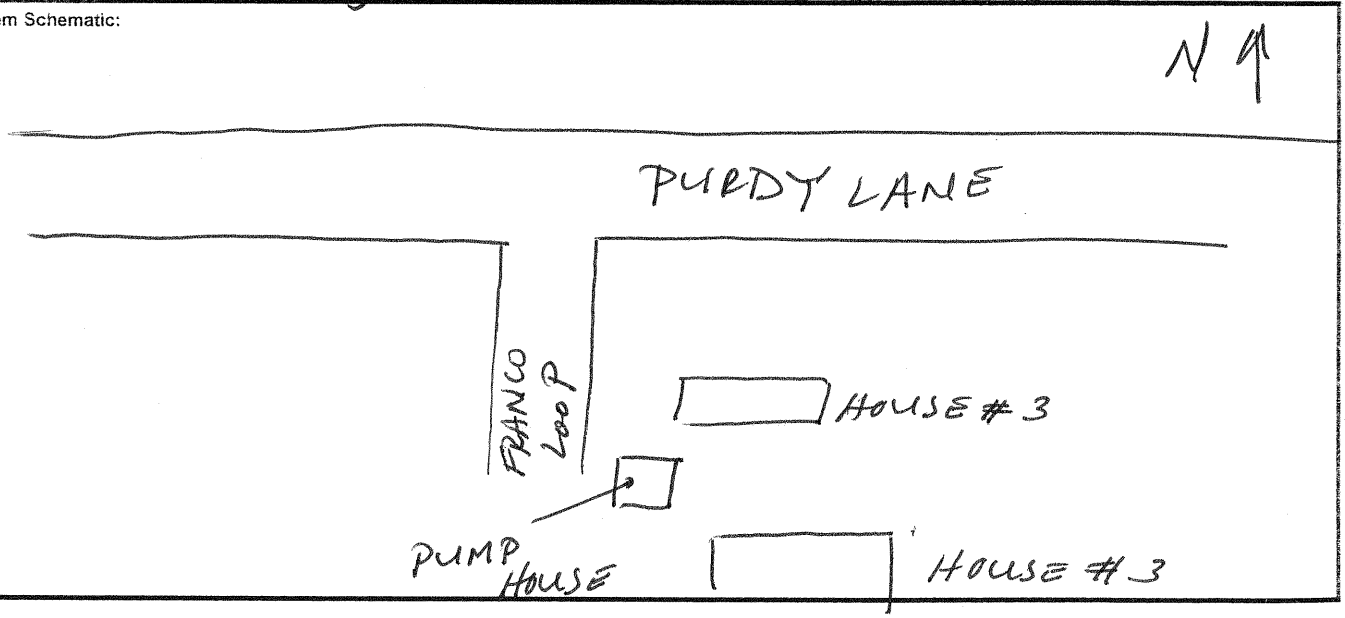
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1128	25		7.48	21.3	1306	~~CLEAR~~ Mag	N	—
1131	"		7.49	20.1	1300	CLEAR	"	—
1134	"		7.47	19.6	1301	"	"	—
TOTAL DISCHARGE = 2006.								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FRANCO	1136	PLASTIC	250	1	300.0	N	

Additional Comments: DUE TO LACK OF A DIRECT OUTLET, A BIB FROM THE HOUSE #3 WAS USED - THE WATER IS USED BY FOUR HOUSES ON THIS PROPERTY. A piece of Rope is blocking hole for w/l measurements - Could not remove

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	FULTZ	Date:	2/27/08
ADWR No.	55- 212447	Weather:	Sunny
Location:	694 E Border Rd Bisbee Junction	Collected By:	KW & MA

WELL DATA

Well Depth (ft bls):	300	Static Water Level (ft bmp):	unable to measure - port hole too tight
Casing Diameter (in):	8	Date/Time:	2/27/08 —
Well Use:	domestic	Point of Measurement:	T.O.C
3 Casing Volumes:	460 gal = 1 casing x3 = 1379	GPS:	12R 0607151 x UTM 3469068
		Elevation:	4694

FIELD SAMPLING DATA

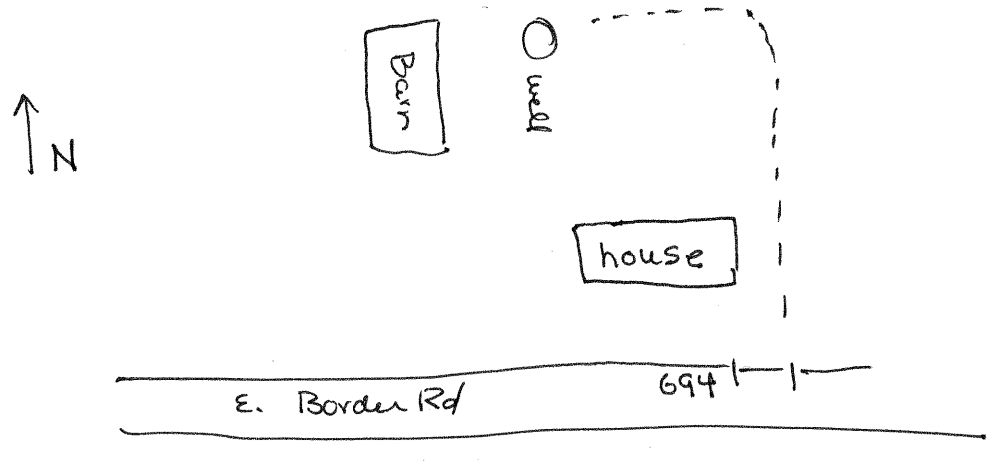
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
15:13	10gpm	10	6.73	18.7	1813	none	none	
15:18		60	6.76	20.6	1824	"	"	
15:23		110	6.78	21.3	1837	"	"	
15:28		160	6.80	21.8	1822	"	"	
15:33		210	6.81	21.7	1818	"	"	
15:38		260	7.03	21.2	1809	"	"	
15:42		310	6.76	21.2	1816	"	"	
15:45		340	6.76	21.1	1827	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
FULTZ	15:45	plastic	250	1	300.0	N	filtered

Additional Comments: 2nd GPS reading 12 R 0607151 . 2006 WL of 124' used for casing volume calculations. House is still connected to NWC. Well drilled in 2006 - used for animals irrigation + some human drinking

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0 / 872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	KW ~~55-502.5 KWT~~ GALLANT	Date:	2/11/08
ADWR No.	55-502527	Weather:	breezy, sunny
Location:	897 E Border RD BISBEE	Collected By:	KW & AP

WELL DATA

Well Depth (ft bls):	190 (ft)	Static Water Level (ft bmp):	28.32 ft bls
Casing Diameter (in):	4"	Date/Time:	2/11/08 14:58
Well Use:	DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	238 X 3 = ~~48~~ 714	GPS:	UTM 3468534S 12R 060777D
	714 ÷ 15 = 47.6 min	Elevation:	4597 / 4600 2nd reading

FIELD SAMPLING DATA

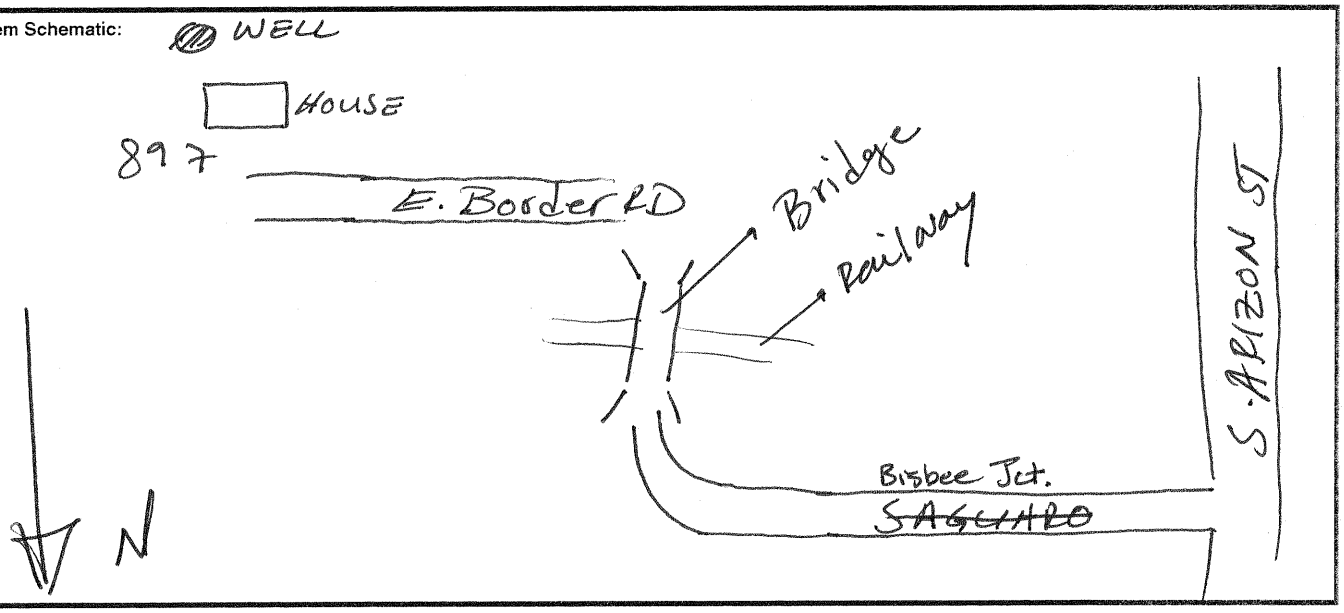
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
15:13	15		7.46	18.1	620	clear	none	few rust flakes
15:16	"		7.47	19.9	599	"	"	few rust, few white flakes
15:22	"		7.52	20.2	602	"	"	
15:27	"		7.49	20.4	606	"	"	few white flakes
15:32	"		7.47	20.3	599	"	"	very few white flakes
15:37	"		7.46	20.2	604	"	"	clear
		TOTAL DISCHARGE = 360 GLS						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
GALLANT	15:40	plastic	125/250/500	3	300.0	Y/N/N	—

Additional Comments: @ request of owner after parameters stable, took sample

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	GARNER 557	Date:	2-21-08
ADWR No.	55-558557	Weather:	Clear
Location:	1027 W Purdy Lane Bisbee, AZ 85603	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bis):	300'	Static Water Level (ft bmp):	191.05
Casing Diameter (in):	6"	Date/Time:	2-21-08 / 12:35
Well Use:	Domestic Supply	Point of Measurement:	Top of Casing
3 Casing Volumes:	480 gal.	GPS:	12R 602652 UTM 3468958
		Elevation:	4625' amsl

FIELD SAMPLING DATA

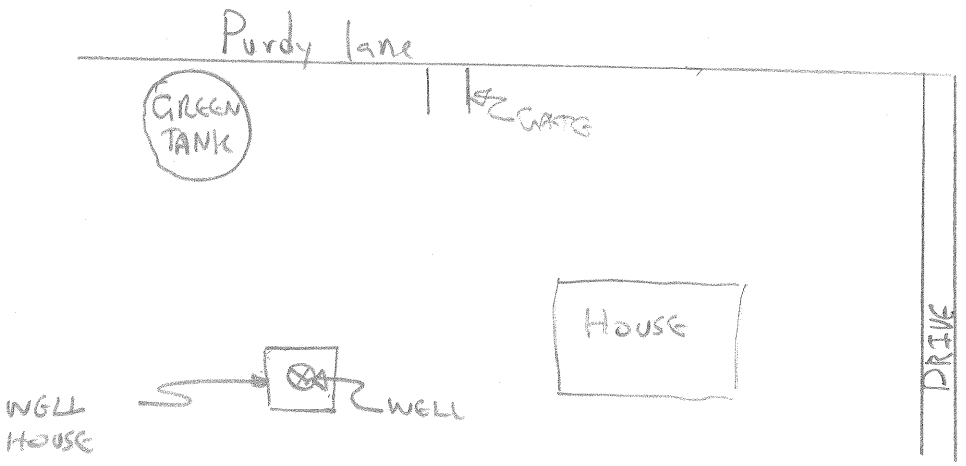
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1255	10	100	6.72	20.9	822	Clear	None	Pump on at 1254
1300	10	600	6.70	20.9	836	Clear	None	
1305								Pump Stopped

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
Garner 557	1310	Plastic	125/250	2		HNO_3/none	Filtered
"	1310	Plastic	250	1		None	UNfiltered

Additional Comments: Pump quit operating at 1305' Mechanical problem.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	GARNER 635	Date:	02/04/2008
ADWR No.	55-587635	Weather:	CLOUDY - WINDY
Location:	1027 W. PURDY LANE BISBEE, AZ	Collected By:	AP/MA

WELL DATA

Well Depth (ft bls):	680	Static Water Level (ft bmp):	193.20
Casing Diameter (in):	12"	Date/Time:	02/04/2008
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	2960X3 = 8580 @ 20gpm	GPS: UTM:	3468972 12R 0602664
730 min purge		Elevation:	4616

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
11:45	20	100	7.71	18.1	473	CLEAR	NO	open b:b at 11:40
11:50	"	200	7.68	21.0	474	"	"	
11:55	"	300	7.70	21.3	478	"	"	
12:00	"	400	7.67	21.3	476	"	"	
12:05	"	500	7.61	22.7	479	"	"	
TOTAL DISCHARGE =						500 G.		

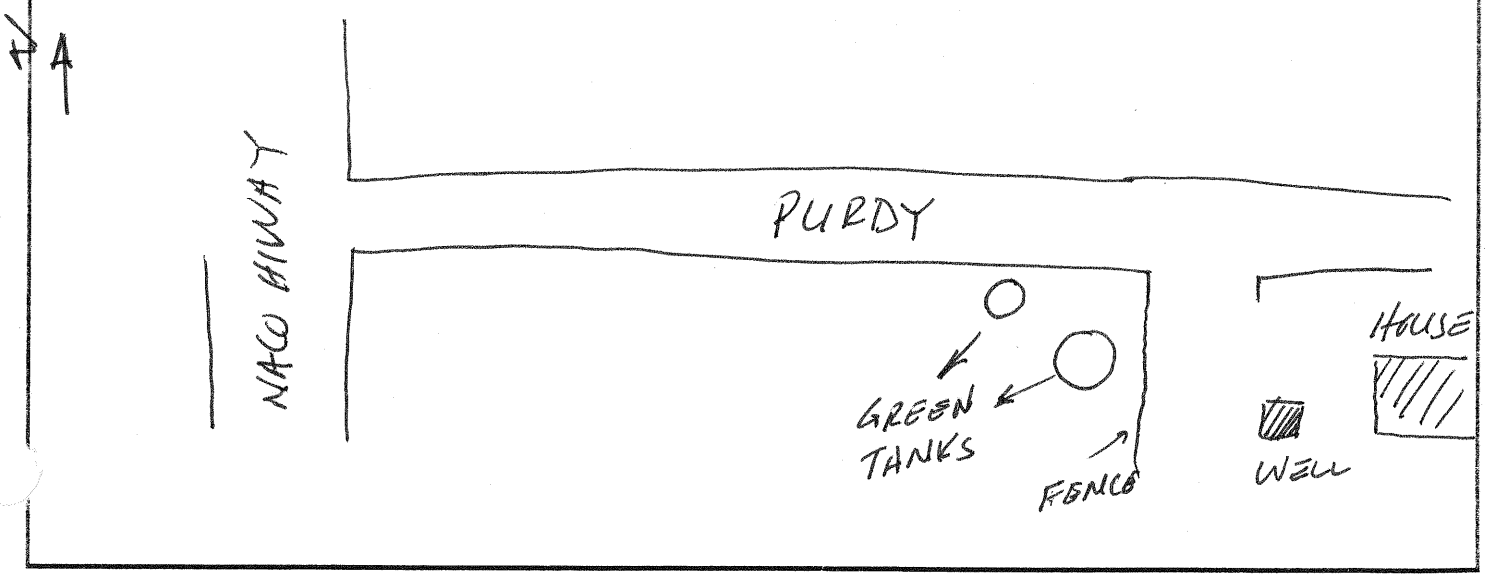
SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
GARNER635	1210	PLASTIC	125/250	1/1	300.0	T/N	
GARNER635	1210	PLASTIC	500	1	300.0	N	

Additional Comments:

* AKA GW-47

Water System Schematic:



HYDRO GEO CHEM. INC.

Groundwater Sampling Form

Project No.	37200 2.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	Galloping Goose 546	Date:	2/21/08
ADWR No.	55-628546	Weather:	Clear windy
Location:	Galloping Goose Properties LLC Woodland Park CO	Collected By:	Not Collected / Arneson / Thompson

WELL DATA

Well Depth (ft bls):	600'	Static Water Level (ft bmp):	Could not sound. Obstruction at 155' btoc
Casing Diameter (in):	6"	Date/Time:	2-21-08
Well Use:	Irrigation	Point of Measurement:	Top of Casing
3 Casing Volumes:	Not Sampled	GPS:	12 R 0606095 UTM 3469735
		Elevation:	4678' AMSL

FIELD SAMPLING DATA

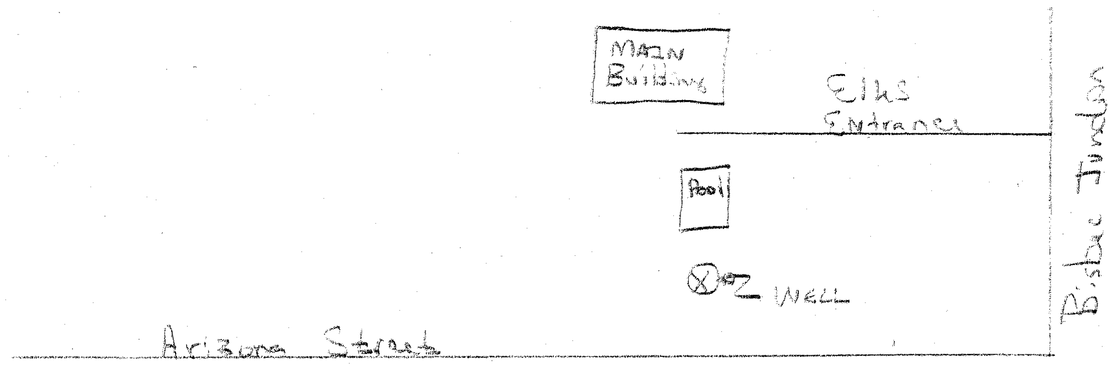
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well is equipped with a pump but power has been disconnected to facility

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	822002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	~~Elks~~ GGOOSE 547 [redacted]	Date:	2-21-08
ADWR No.	55-628547	Weather:	Clear / windy
Location:	BPOE Elks No. 671 Drawer BX, Bisbee, AZ 85603	Collected By:	Not Collected Arnason / Thompson

WELL DATA

Well Depth (ft bls):	800	Static Water Level (ft bmp):	Not Measured - No Sounder access
Casing Diameter (in):	6"	Date/Time:	2-21-08
Well Use:	Supply	Point of Measurement:	
3 Casing Volumes:	Not Sampled	GPS:	12 R 0606255 UTM 3469822
		Elevation:	4704' amsl

FIELD SAMPLING DATA

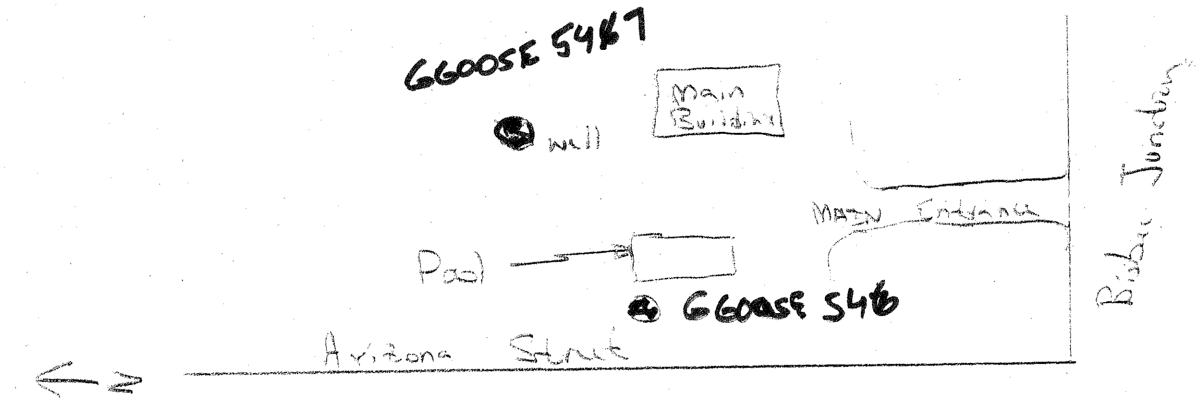
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: We were not able to sound well. No access point for sounder. Well is equipped with a pump but there is no power on site and we were therefore unable to collect a sample.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	GL-3	Date:	03/04/08
ADWR No.	55-539782	Weather:	sunny
Location:	D-23-24-34 bbb *	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	825	Static Water Level (ft bmp):	> 500' bmp
Casing Diameter (in):	4"	Date/Time:	03/04/08 11:03 > 500
Well Use:	monitoring	Point of Measurement:	T.O.C.
3 Casing Volumes:	93 gal x 3 = 279	GPS:	12R 0604387 x 3473747
		Elevation:	4946

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
11:20	8	8	~~6.71~~ 8.20	20.1	457	clear	none	few fine black seds
11:27	8	64	7.72	24.4	201	"	"	" " " "
11:32	"	96	7.60	25.2	199	"	"	" " " "
11:39	"	152	7.36	25.7	368	"	"	very few fine flecks (black)
11:45	"	200	7.38	25.9	400	"	"	" " " " "
11:51	"	248	7.43	25.7	417	slightly brown	slight	" " " " "
11:55	starting to loose flow, drum to abt 3 gpm							
		250						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
GL-3	11:55	plastic	125 250 250	3	300.0	Y/N/N	

Additional Comments: Our sounder is only 500'. WL = > 500'. Screen is 780-820 acc. to well driller's report. 2005 WL = 683

* cadastrals written on box are sec 33 bca

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	GOAR	Date:	2-21-08
ADWR No.	55-610694	Weather:	cloudy
Location:	1185 W. Purdy Lane Bisbee, AZ 85603	Collected By:	MA/WT

WELL DATA

Well Depth (ft bls):	250	Static Water Level (ft bmp):	~~183.90' MA~~ No Access
Casing Diameter (in):	6"	Date/Time:	2-21-08/11:45
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	Not Sampled	GPS:	12R 0602216 UTM 3468913
		Elevation:	4588

FIELD SAMPLING DATA

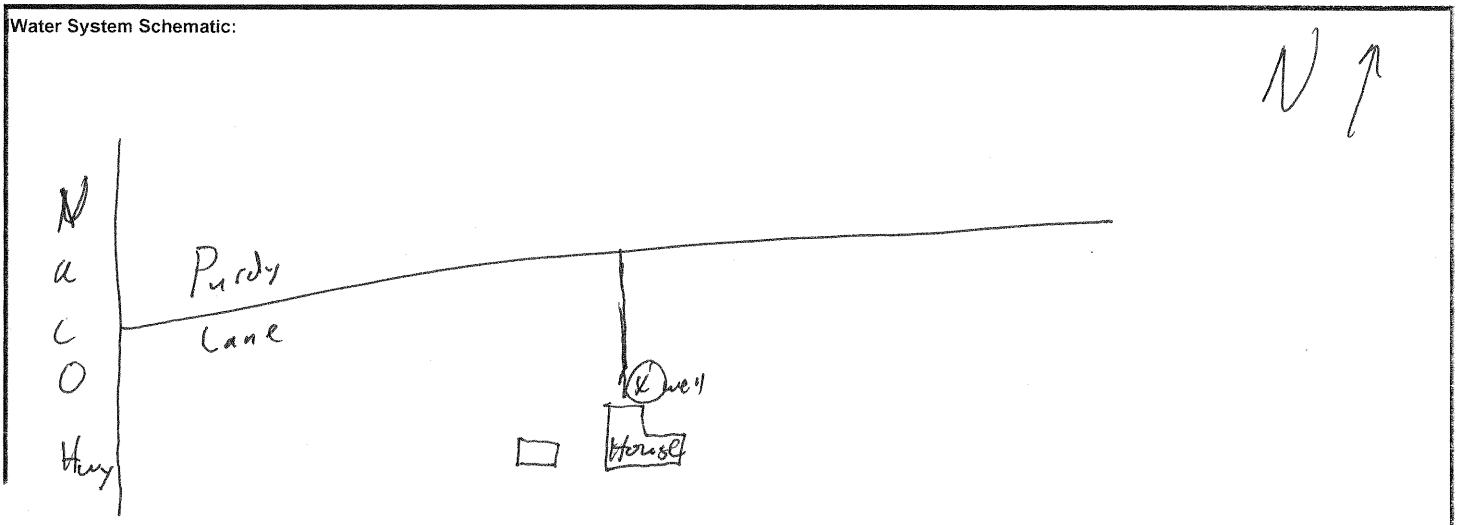
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is not being used

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720010	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	GOAR RANCH	Date:	2-21-08
ADWR No.	55-610695	Weather:	Cloudy
Location:	W. Purdy Lane Bisbee, AZ 85603	Collected By:	MA/WT

WELL DATA

Well Depth (ft bls):	250	Static Water Level (ft bmp):	~~N~~ 183.90
Casing Diameter (in):	7"	Date/Time:	2-21-08/11:35
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	Not Sampled	GPS:	12R 0602449 UTM 3468891
		Elevation:	4596

FIELD SAMPLING DATA

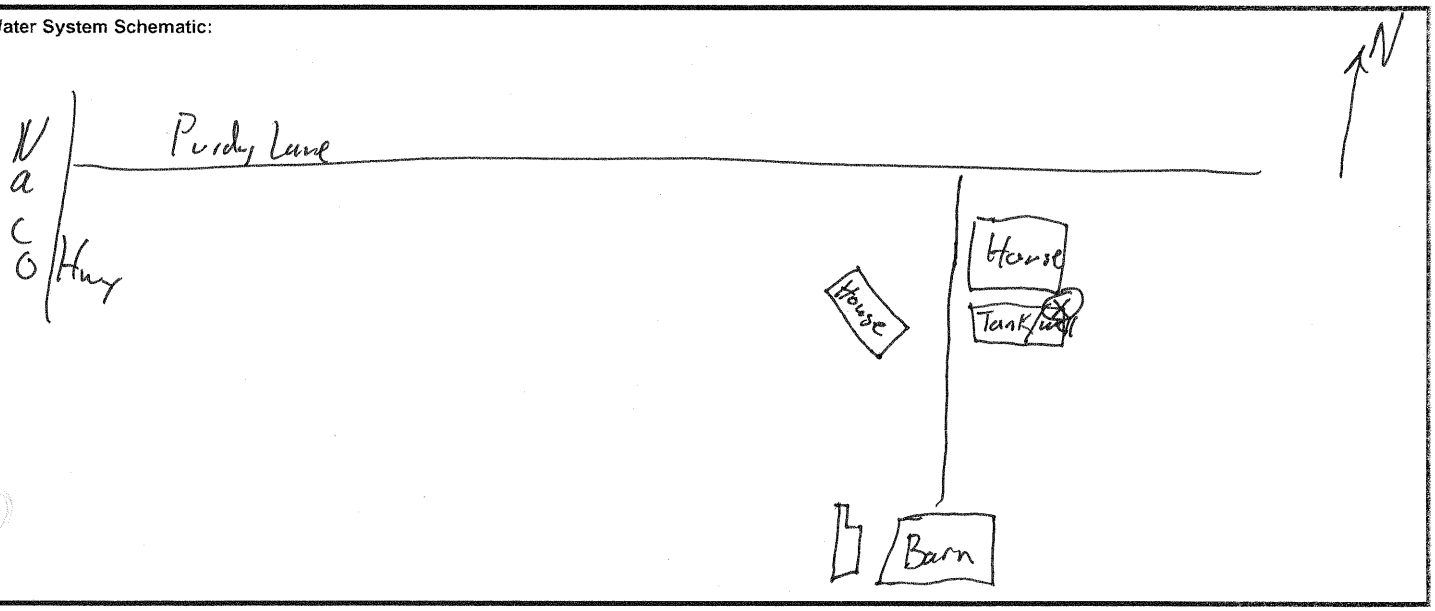
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is not in use

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	GREGG (Former Jenny)	Date:	3/20/08
ADWR No.	570 W. Mulberry Lane	Weather:	clear
Location:	55-630852	Collected By:	MA

WELL DATA

Well Depth (ft bls):	126'	Static Water Level (ft bmp):	Dry
Casing Diameter (in):	8"	Date/Time:	3/20/08 1440
Well Use:	INACTIVE DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	NA	GPS:	12R 0606870 3469216
		Elevation:	4648

FIELD SAMPLING DATA

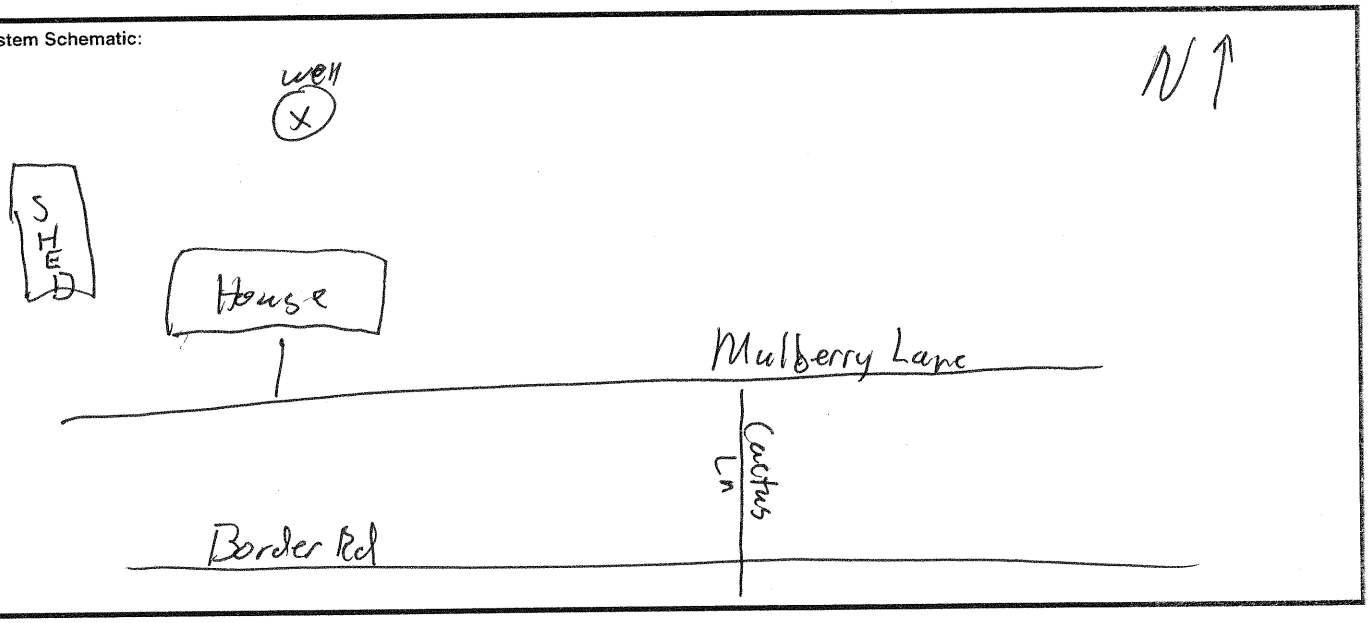
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well has no pump and is Dry

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	HECK	Date:	3-20-08
ADWR No.	507823	Weather:	CLEAR
Location:	2440 So. SUNSET ST. BISBEE, AZ 85603	Collected By:	MA

WELL DATA

Well Depth (ft bls):	313	Static Water Level (ft bmp):	OBSTRUCTIONS @ 232' btoc
Casing Diameter (in):	5"	Date/Time:	3/20/08 1800
Well Use:	INACTIVE DOMPSTIC	Point of Measurement:	TOC
3 Casing Volumes:	NA	GPS:	602054 3471115
		Elevation:	4726

FIELD SAMPLING DATA

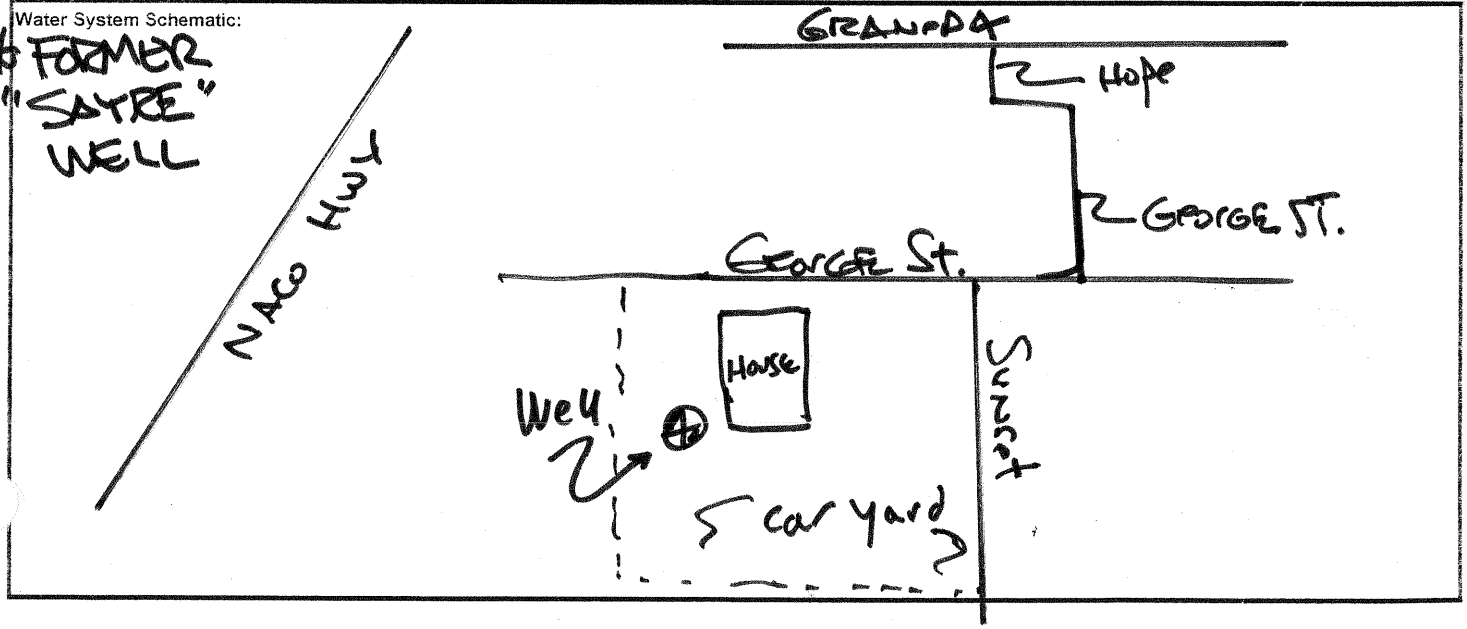
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: WELL NOT OPERATIONAL FOR YEARS ACCORDING TO OWNER: HAROLD HECK

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	HOBAN	Date:	2/27/08
ADWR No.	805290 805290	Weather:	sunny, breezy
Location:	1385 W. Purdy Lane	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	316	Static Water Level (ft bmp):	163.05
Casing Diameter (in):	6	Date/Time:	2/27/08 11:09
Well Use:	domestic	Point of Measurement:	T.O.C.
3 Casing Volumes:	225gal x 3 = 675 gal	GPS:	WTM 346887 8 12R 0601706
	45 min	Elevation:	4588

FIELD SAMPLING DATA

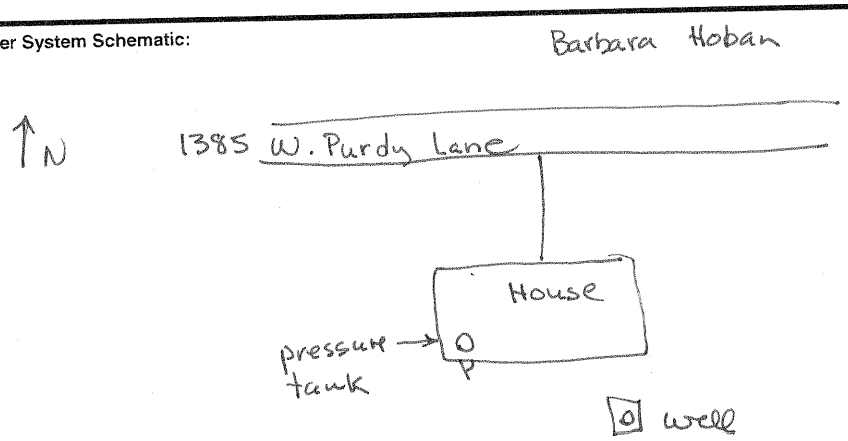
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
11:26	15	45	7.03	19.7	1317	clear	none	
11:31		120	7.00	21.4	1304	"	"	
11:36		195	6.99	21.7	1266	"	"	
11:41		270	7.03	21.5	1283	"	"	
11:46		345	6.98	21.9	1335	"	"	
11:51		420	7.00	21.9	1376	"	"	
11:56		495	6.92	22.2	1377	"	"	
12:01		570	6.94	22.1	1369	"	"	
12:06		645	6.93	22.2	1362	"	"	
12:11		720	6.93	22.1	1359			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
HOBAN	12:15	plastic	250	1	300.0	N	filtered

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	HOWARD	Date:	3-4-08
ADWR No.	No Record	Weather:	Sunny, Cool
Location:	3269 S. Naco Hwy	Collected By:	MA/KW

WELL DATA

Well Depth (ft bis):	est 200' per owner	Static Water Level (ft bmp):	150.10
Casing Diameter (in):	6"	Date/Time:	3-4-08
Well Use:	domestic	Point of Measurement:	TOC
3 Casing Volumes:	73.3 x 3 = 220	GPS:	601291 N 3468769 E
		Elevation:	4595

FIELD SAMPLING DATA

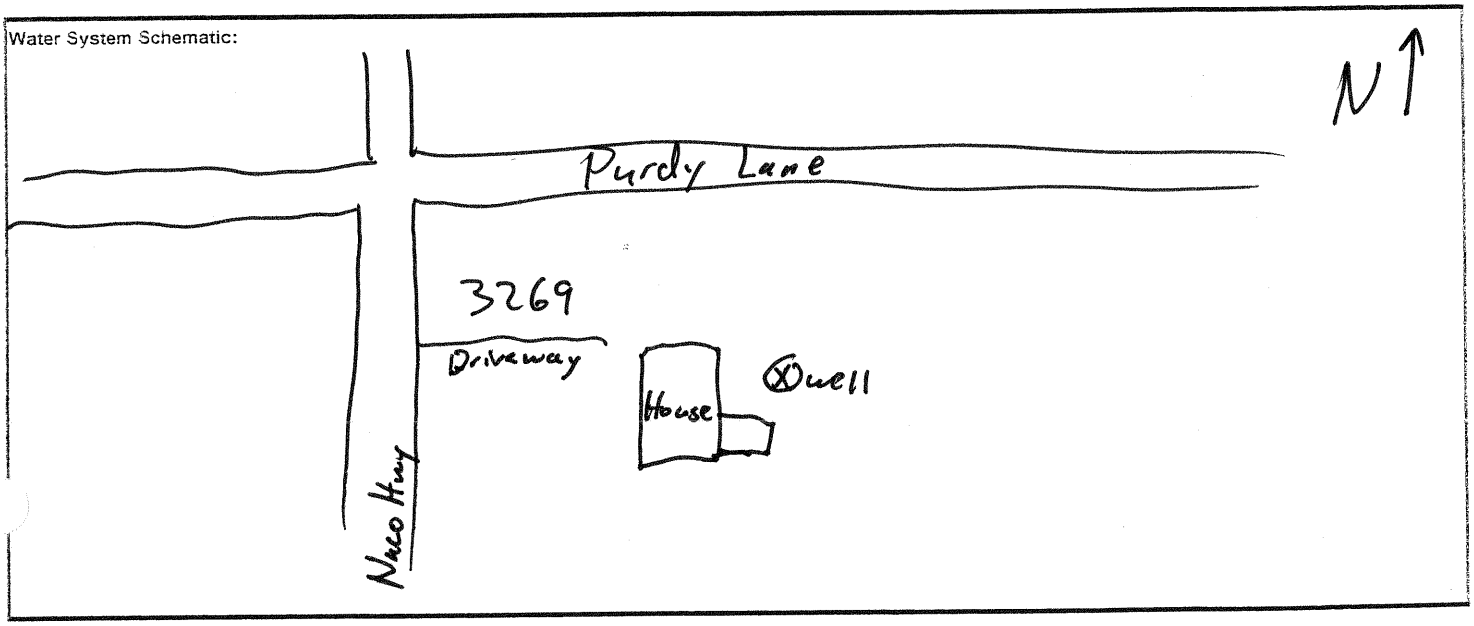
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
17:52	10	16	6.96	20.0	1258	Clear	No	
17:54	"	30	7.03	20.4	1199	"	"	
17:58	"	70	7.04	20.6	1267	"	"	
18:01	"	100	7.06	20.5	1288	"	"	
18:04	"	130	7.06	20.4	1280	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
HOWARD	18:10	Plastic	250	1	300.0	N	

Additional Comments: Receiving bottled water for drinking. Well is in regular use.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	JALYN	Date:	2/12/08
ADWR No.	55 - 209737	Weather:	sunny
Location:	3273 Naco Hwy	Collected By:	KW - AP

WELL DATA

Well Depth (ft bls):	245	Static Water Level (ft bmp):	DO W.L. due to obstruction @
Casing Diameter (in):	8	Date/Time:	2/12/08 10:50 45'
Well Use:	unused, undev land; to be d.w. supply	Point of Measurement:	T.O.C
3 Casing Volumes:		GPS:	UTM 3468699 12R 0601449
		Elevation:	4527

FIELD SAMPLING DATA

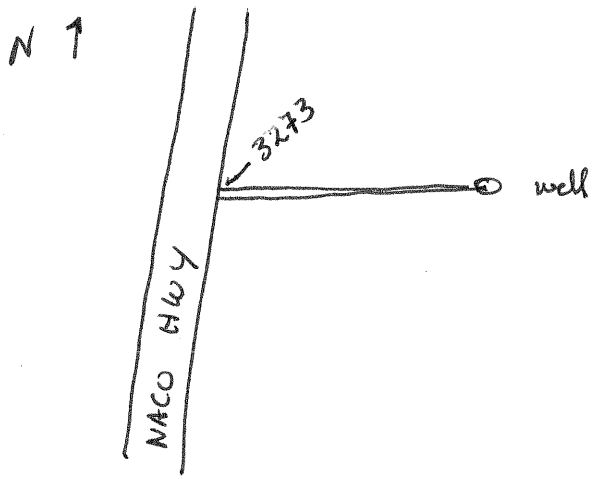
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well is on undeveloped land for sale by JALYN Associates. Will become drinking water supply well when land is developed. Well obstructed @ 45'.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	AP ~~209744~~ KEEFER	Date:	02/06/2008
ADWR No.	209744	Weather:	CLEAR
Location:	NACO, AZ	Collected By:	AP/MA

WELL DATA

Well Depth (ft bis):	250'	Static Water Level (ft bmp):	134.67
Casing Diameter (in):	NA	Date/Time:	02/06/2008
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	PURGED TILL STABILITY	GPS: UTM:	3468112 NR 0599881
		Elevation:	4567

FIELD SAMPLING DATA

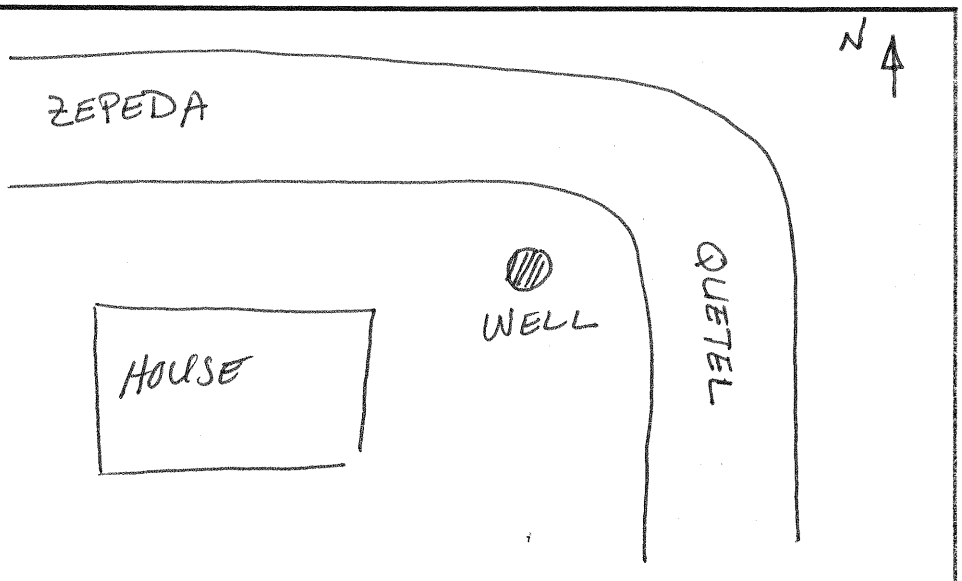
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
0946	14	14	6.75	12.5	396	Clear	None	open b.h at 845
0950	"	70	7.29	17.2	354	"	"	
0952	"		7.53	19.1	372	"	"	
0955	"		7.71	16.9	367	"	"	
0958	"		7.70	19.0	378	"	"	
							AP	
TOTAL		AP ~~GALL~~	DISCHARGE			=	288 G. 336	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
KEEFER	0900	Plastic	250	1	300.0	None	

Additional Comments: This is the only well on this property

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	MCCONNELL 265 Virgin	Date:	2/20/08
ADWR No.	55-539265	Weather:	Cloudy
Location:	1463 Purdy Lane Bisbee, AZ 85603	Collected By:	Aymson / Thompson

WELL DATA

Well Depth (ft bls):	216	Static Water Level (ft bmp):	156.15
Casing Diameter (in):	6"	Date/Time:	2-20-08 / 13:15
Well Use:	Domestic (not currently in use)	Point of Measurement:	Top of Casing
3 Casing Volumes:	264 gal	GPS:	12R 0601463 UTM 3468844
		Elevation:	4604' AMSL

FIELD SAMPLING DATA

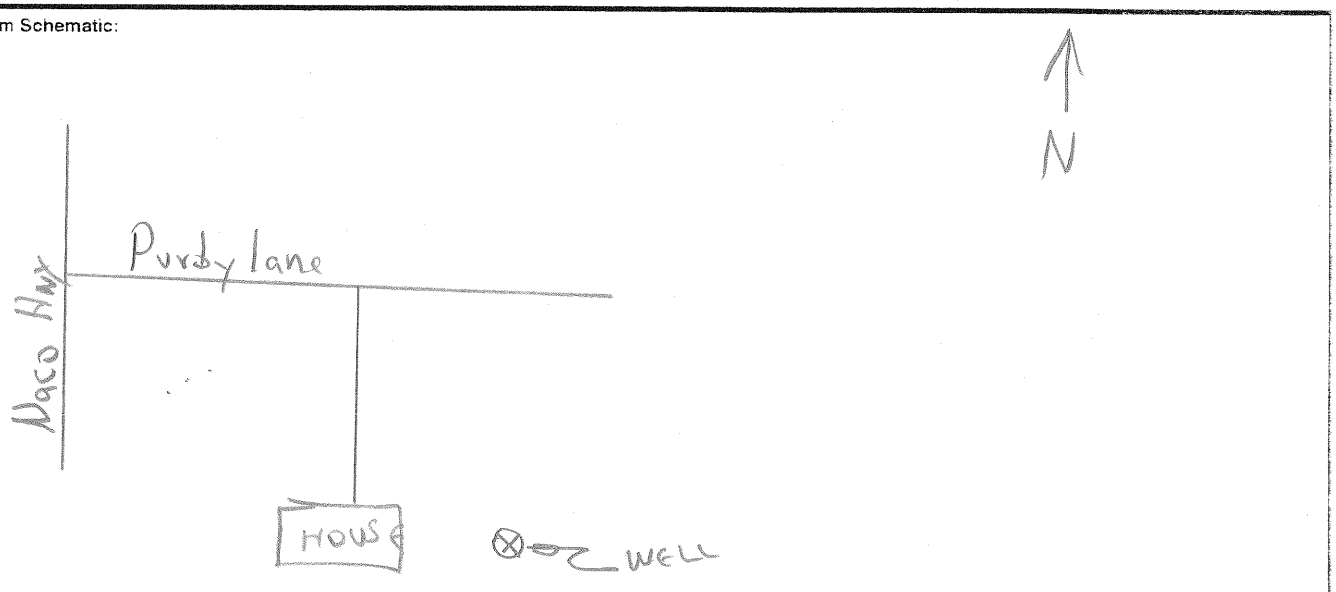
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1330	10	10	7.21	16.2	1424	Clear	None	ON at 1329
1333	10	40	7.26	19.7	1437	↓	↓	
1337	10	80	7.19	21.1	1435			
1343	10	140	7.21	21.1	1435	↓	↓	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
MCCONNELL 265	1350	Plastic	250	1	300.0	None	Filtered

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	McConnell 386 Russell	Date:	3/20/08
ADWR No.	55-590386	Weather:	clear
Location:	PURDY LANE, BISBEE	Collected By:	MA

WELL DATA

Well Depth (ft bls):	NO DATA *	Static Water Level (ft bmp):	NA
Casing Diameter (in):	NO DATA *	Date/Time:	3/20/08 1435
Well Use:	DOMESTIC	Point of Measurement:	
3 Casing Volumes:	NA	GPS:	12R 0601461 3468917
		Elevation:	4602

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

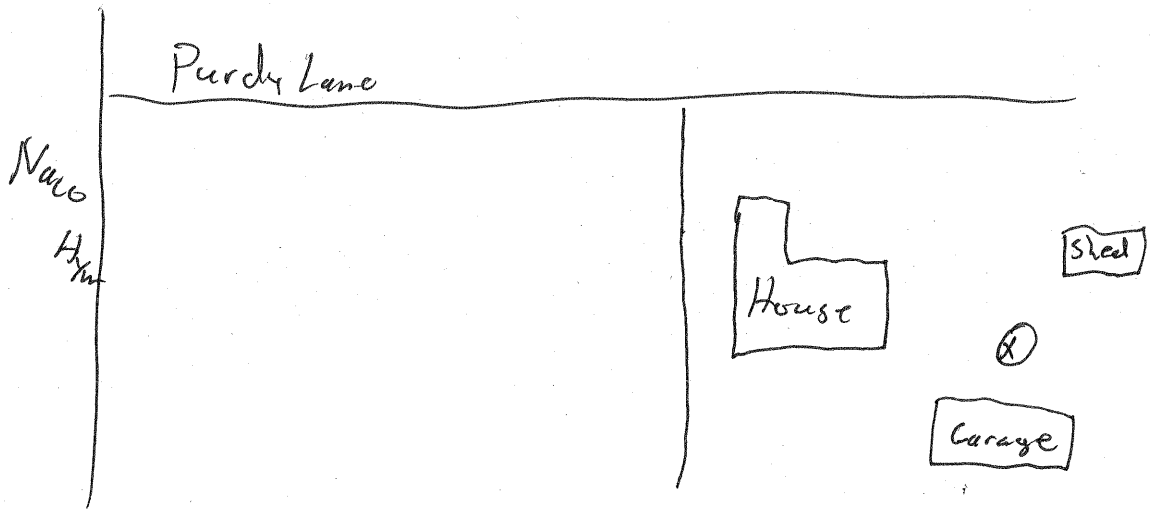
SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is dismantled

* NO ADWR DRILLER INSTALLATION REPORT

Water System Schematic:



V. McConnell

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	MENDEZ	Date:	2/11/08
ADWR No.	55-650256	Weather:	breezy, sunny
Location:	3757 S. Towne ~~Road~~ Hwy NACO	Collected By:	AP/KW

WELL DATA

Well Depth (ft bls):	160	Static Water Level (ft bmp):	dry ~~160~~ ap
Casing Diameter (in):	NA	Date/Time:	2/11/08 16:40
Well Use:	none, on city water	Point of Measurement:	—
3 Casing Volumes:	—	GPS: UTM:	3467478 12R 0600076
		Elevation:	4629 (ft.)

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Sent probe to 160 - no water

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	~~Olivarria~~ (Metzler)	Date:	03-05-08
ADWR No.	35-71891 no 55 reg #	Weather:	sunny breezy cool
Location:	2313 Sunflower St Bisbee (SJ area)	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	351	Static Water Level (ft bmp):	288.30
Casing Diameter (in):	6	Date/Time:	03.05.08 9:10
Well Use:	domestic	Point of Measurement:	T.O.C
3 Casing Volumes:	92.5 gal x 3 = 277.6	GPS:	12R 0602094 WTM 3471380
yard is flooding - parameters stable		Elevation:	4733

FIELD SAMPLING DATA

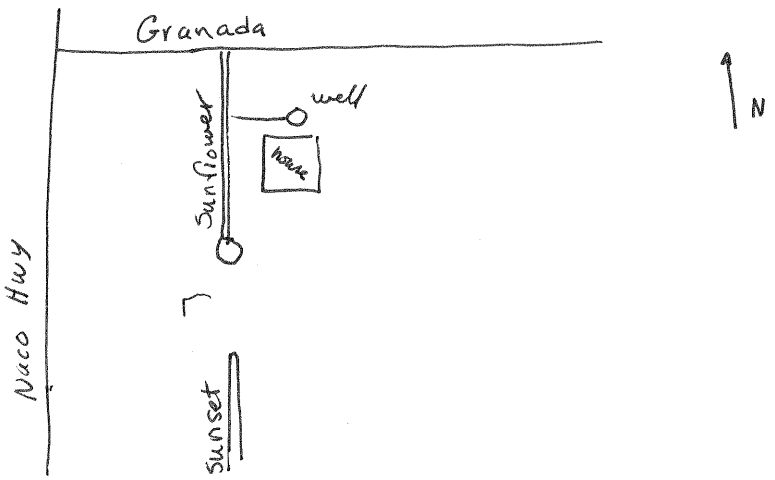
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
9:34	5	0	7.26	19.2	1046	clear	none	
9:39	"	25	7.25	21.0	1071	"	"	
9:44	"	50	7.26	21.5	1058	"	"	
9:49	"	75	7.25	21.9	1063	"	"	
9:54	"	100	7.27	21.5	1055	"	"	
9:59	"	125	7.26	21.7	1071	"	"	
10:04	"	150	7.27	21.6	1055			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
METZLER	10:10	plastic	250	1	300.0	N	

Additional Comments: D-24-24-5 dbb 35-71891 Metzler & Olivarria residence. Well used well by several family members. Parameters Stable, yard flooding

Water System Schematic:



Sunset + Sunflower do not connect to one another but are N-S extensions

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Freeport CQB

Project No.	8720000/2.2	Client:	~~PHELPS DODGE COPPER QUEEN BRANCH~~
Well ID:	MILLER 340	Date:	5-19-08
ADWR No.		Weather:	clear
Location:	3029 Miller Ranch Rd. Naco, AZ	Collected By:	MA

WELL DATA

Well Depth (ft bls):		Static Water Level (ft bmp):	
Casing Diameter (in):		Date/Time:	5-19-08 15:26
Well Use:		Point of Measurement:	NA
3 Casing Volumes:		GPS:	12R 600133 3469489
		Elevation:	4604

FIELD SAMPLING DATA

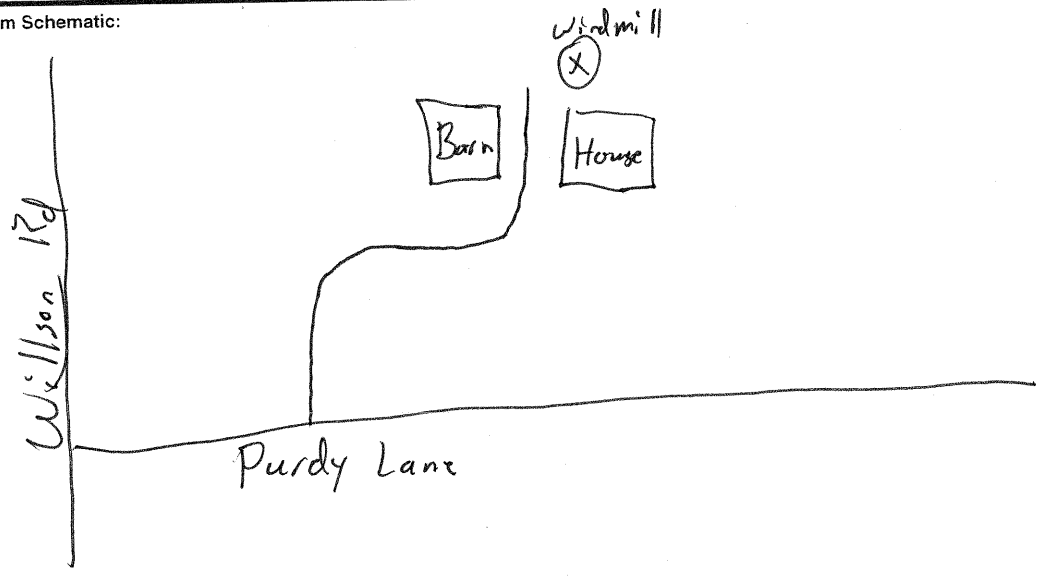
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: No Access for water level measure. This well is not operational
~~Monthly Sat/Sat Trend Analysis~~ NA

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	MILLER - 341	Date:	2/28/08
ADWR No.	641341	Weather:	sunny
Location:	D. 24-24-17 cda	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	100 *	Static Water Level (ft bmp):	cannot access.
Casing Diameter (in):		Date/Time:	Mr Miller says it's dry
Well Use:	stock	Point of Measurement:	—
3 Casing Volumes:	—	GPS:	12R 0601878 x utm 3467724
		Elevation:	4586

FIELD SAMPLING DATA

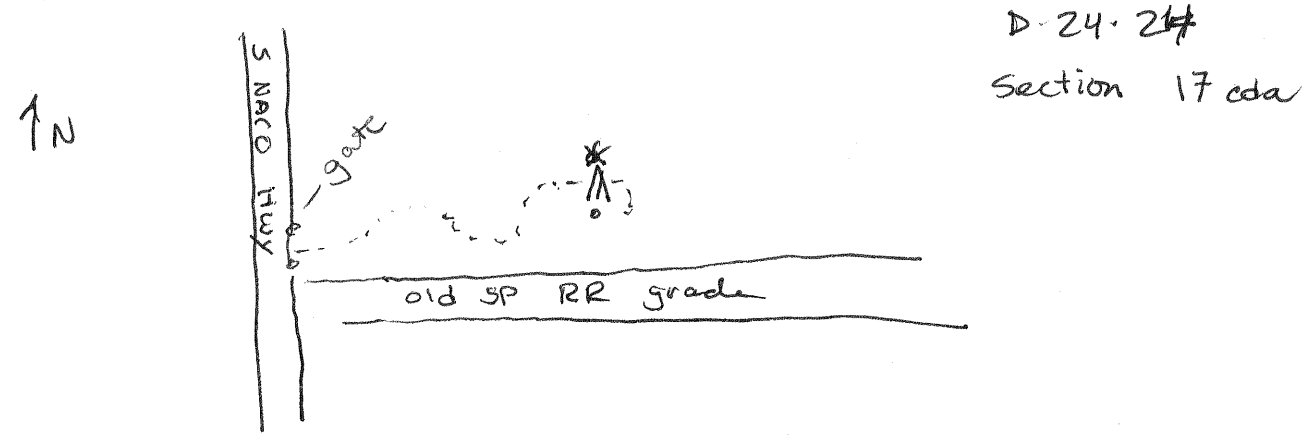
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
None							

Additional Comments: * Mr Miller thinks it's 90' instead of 100' maybe

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
ell ID:	MILLER 342	Date:	5-19-08
ADWR No.		Weather:	Clear
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):		Static Water Level (ft bmp):	No Access
Casing Diameter (in):		Date/Time:	5-19-08 14:45
Well Use:		Point of Measurement:	
3 Casing Volumes:		GPS:	12R 604427 3467525
		Elevation:	4626

FIELD SAMPLING DATA

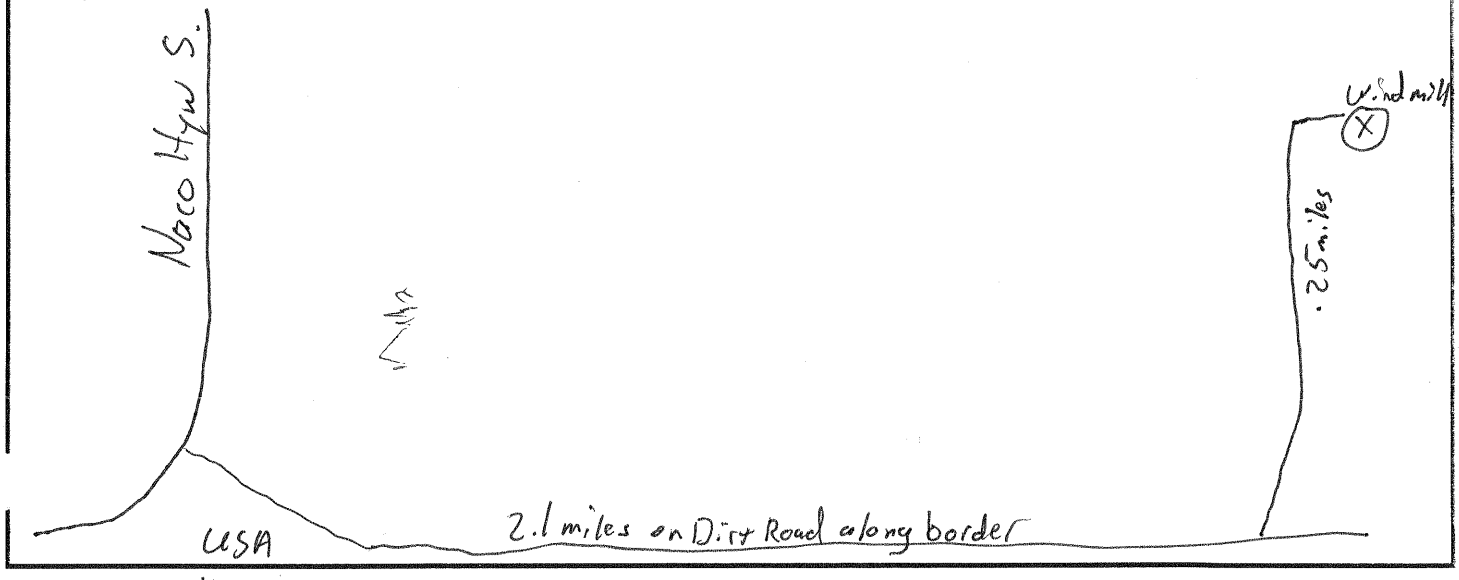
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is not operational and has no access for water level measurement

Water System Schematic:



HYDRO GEO CHEM, INC. NOW 3/25/08 MINOR 316 / MINOR 317

Groundwater Sampling Form

Project No.	MINOR 8720001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	~~HALL~~ (South) D' Autremont	Date:	2/12/08
ADWR No.	55-633317 / 633316	Weather:	Sunny, warm
Location:	Intersection of Naco Hwy + D'Autremont Box # 322; just south of 3352 S. Naco Hwy	Collected By:	AP / KW

WELL DATA

Well Depth (ft bls):	155'	Static Water Level (ft bmp):	135.30
Casing Diameter (in):	6"	Date/Time:	2/12/08 11:30
Well Use:	UNUSED	Point of Measurement:	TOC
3 Casing Volumes:		GPS:	UTM 3468481 12R 0601171
		Elevation:	4569

FIELD SAMPLING DATA

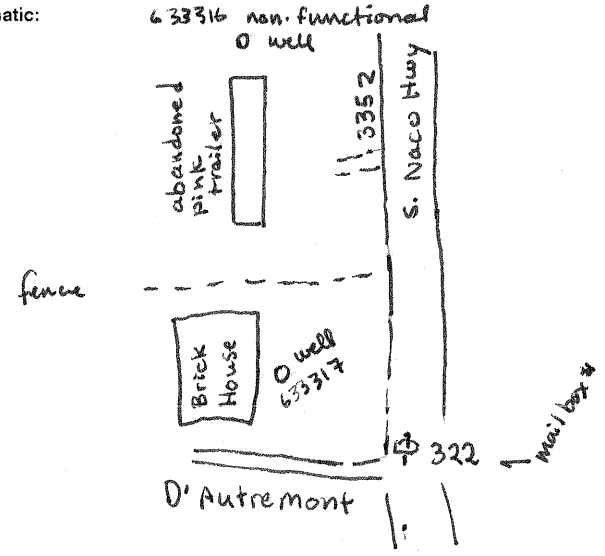
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Attempted to obtain spc w/ bailer w/o success. Water is very dirty and maybe only a little in bottom of well.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	Moore	Date:	2-20-08
ADWR No.	55-538847	Weather:	Clear
Location:	3606 Wilson Road Naco, AZ	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bls):	220	Static Water Level (ft bmp):	6/26/93 = 125' btoc (historic)
Casing Diameter (in):	6	Date/Time:	2-20-08 / N/A
Well Use:	Domestic Supply	Point of Measurement:	Top of Casing
3 Casing Volumes:	419 Gallons	GPS:	12R 0549560 UTM 3467945
		Elevation:	4574 AMSL

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1023	6	6	7.18	21.0	371	Clear	None	Pump on at 1022
1024	6	1230	7.46	22.8	360	↓	↓	
1027	6	~~24~~	7.58	22.3	358			
1031	6	~~54~~ OK	7.65	22.2	363			
1035	6	~~78~~ OK	7.71	22.3	365			
1040	6	~~108~~ OK	7.69	22.2	362	↓	↓	

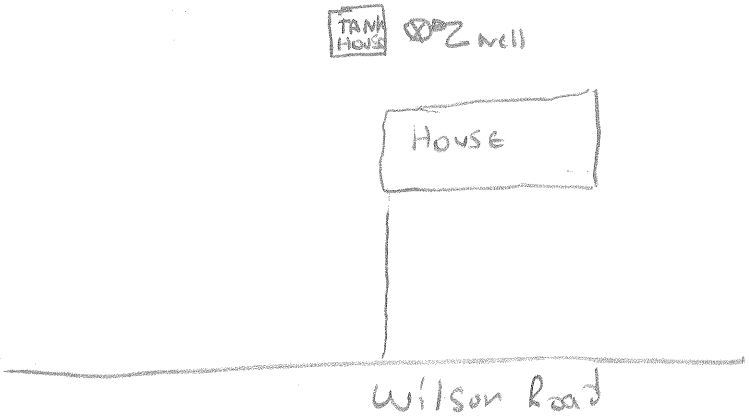
SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
Moore	1045	Plastic	250ml	1	300.0	None	

Additional Comments: Unable to Sound well, Sample port to narrow. WL was taken in 1993 and posted on well control box

Water System Schematic:

Well is about 40' in back of main house



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	87 2001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	NOTEMAN	Date:	02/05/2008
ADWR No.	212483	Weather:	CLEAR
Location:	Arizona St., Bisbee Junction	Collected By:	AP/MA

WELL DATA

Well Depth (ft bls):	470	Static Water Level (ft bmp):	330 (12-30-07)
Casing Diameter (in):	5	Date/Time:	02/05/2008
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	143 X 3 = 429 G 429 ÷ 10 = 43 min	GPS: UTM:	3471575 12 R 0606045
		Elevation:	

FIELD SAMPLING DATA

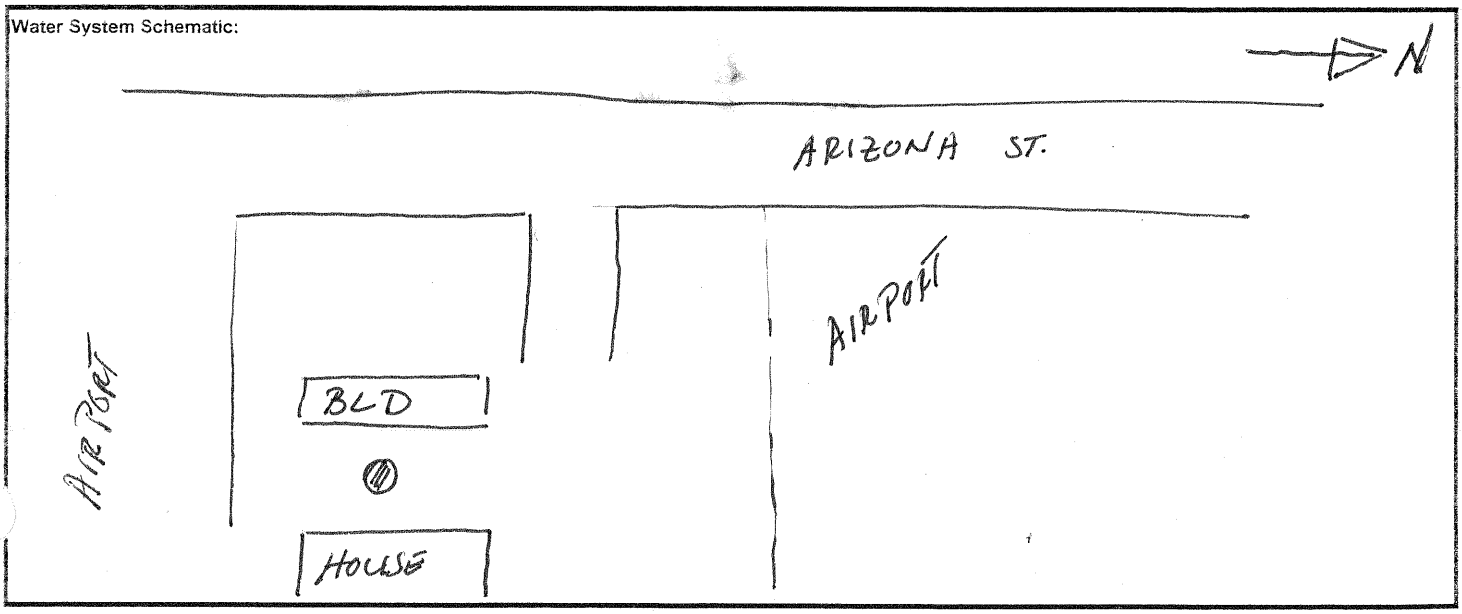
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1155	10		6.74	12.2	1311	CLEAR	N	—
1200	"		6.71	19.9	1323			
1205	"		6.70	18.9	1307			
1210	"		6.70	19.9	1317			
TOTAL DISCHARGE = 200 G.								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
NOTEMAN	1215	PLASTIC	250	1	300	N	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	Osborn	Date:	02/25/08
ADWR No.	643436	Weather:	Sunny, windy
Location:	2429 S. Swan Rd Bb AZ	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	258	Static Water Level (ft bmp):	obstructed @ 5.5'
Casing Diameter (in):	8	Date/Time:	02/25/07 14:05
Well Use:	domestic	Point of Measurement:	~~obstructed @ 5.5~~ TOC
3 Casing Volumes:	est 73 x 221	GPS:	UTM 347 0274 12R 0607030
		Elevation:	4712

FIELD SAMPLING DATA

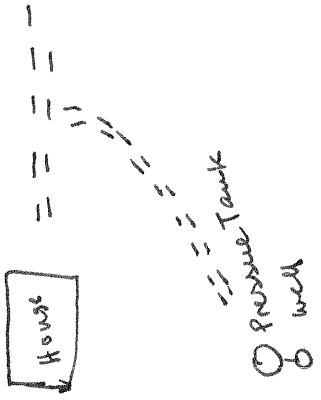
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
14:12	10	10	7.07	21.8	508	none	none	
14:15	10	40	7.31	22.2	506	"	"	
14:18	10	70	7.34	22.2	512	"	"	
14:21	10	100	7.34	22.5	510	"	"	
14:24	10	130	7.36	22.4	508	"	"	
14:27	10	160	7.35	22.4	508	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
OSBORNE	14.30	Plastic	125/250/250	3	300.0	Y/N/N	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	PALMER	Date:	2-14-08
ADWR No.	55-578819	Weather:	windy + sunny
Location:	D-24-24-12 cbc off Beechcraft Rd	Collected By:	KW + AP

WELL DATA

Well Depth (ft bls):	220	Static Water Level (ft bmp):	cannot access
Casing Diameter (in):	6	Date/Time:	2-14-08 13:20
Well Use:	domestic	Point of Measurement:	—
3 Casing Volumes:	THE SAMPLE WAS TAKEN FROM THE TANK.	GPS:	UTM 3469485 12R 0607775
		Elevation:	4652

FIELD SAMPLING DATA

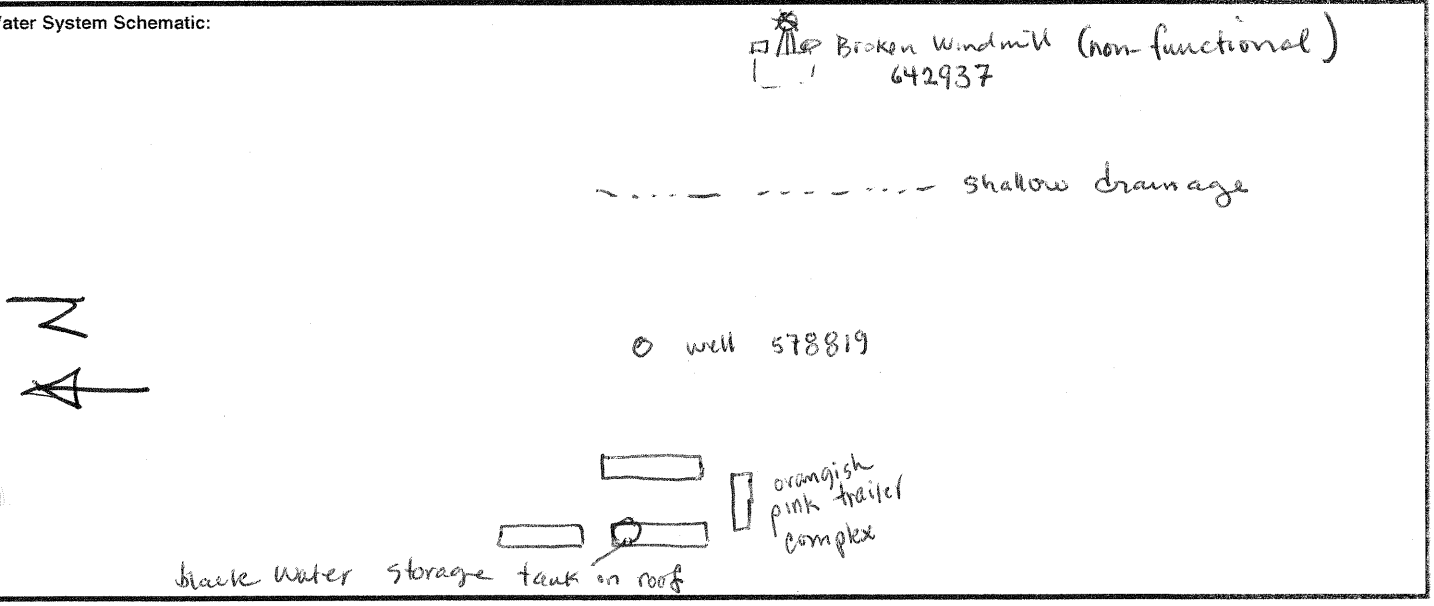
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13:40	—	NA	7.91	17.5	435	none	none	composite spl

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
PALMER 819	13:50	plastic	125/250/500	3	300.0	Y/N/N	composite from tank

Additional Comments: Note we are running full suite on water from 578819 because 642937 stated to be regional GWM well is non-functional. 578819 may lie on or outside 1 mile radius based on topography

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	PANAGAKOS	Date:	4-21-08
ADWR No.	35-76413	Weather:	Clear
Location:	500 Purdy Lane	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200'	Static Water Level (ft bmp):	No Access
Casing Diameter (in):	8"	Date/Time:	4-21-08 / 8:40
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	NA	GPS:	3469317 12R 0605307
		Elevation:	4694

FIELD SAMPLING DATA

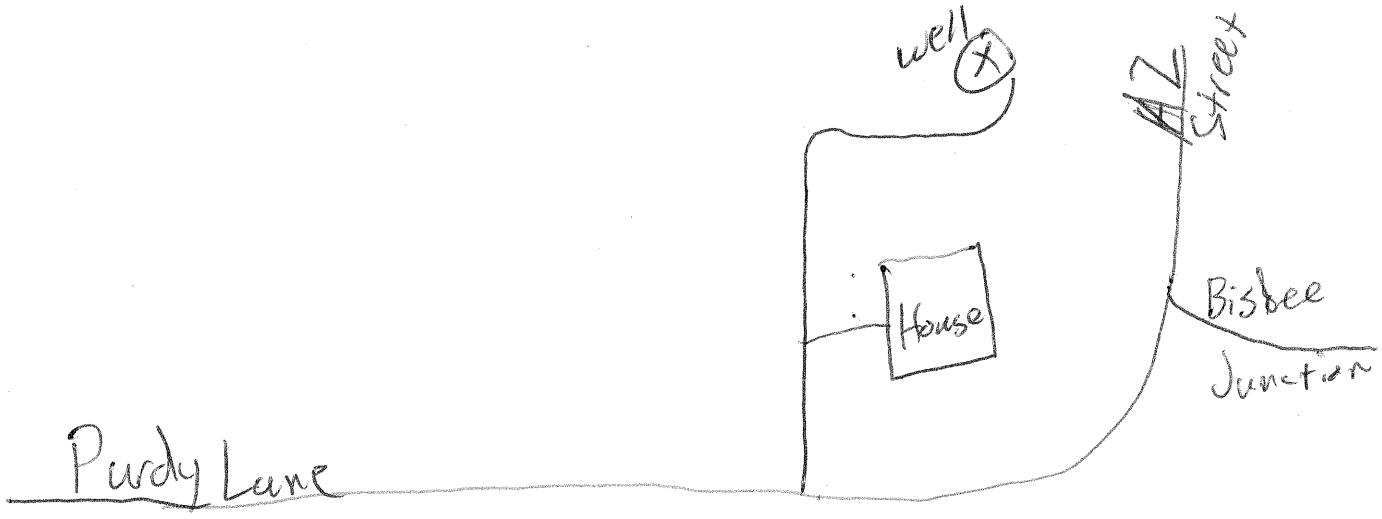
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
9:01	4gpm	4	6.73	20.5	1226	Clear	None	Open bib at 9:00
9:04	"	16	6.77	20.6	1235	"	"	Pump is on
9:07	"	28	6.79	20.5	1236	"	"	
9:10	"	40	6.79	20.5	1232	"	"	
9:13	"	52	6.80	20.5	1228	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
PANAGAKOS	9:15	Plastic	250ml	1	300.0	None	Filtered

Additional Comments: Pump cycled twice during purge, and was running upon arrival

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	PARRA	Date:	02/11/2008
ADWR No.	576415	Weather:	CLEAR
Location:	2356 S. HOPE, NACO HWY	Collected By:	AP / KW

WELL DATA

Well Depth (ft bls):	355'	Static Water Level (ft bmp):	263' from 1999
Casing Diameter (in):	6"	Date/Time:	02/11/2008
Well Use:	DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	135X3 = 405 ÷ 10 = 40 min	GPS: UTM:	3471261 12 R 0602170
		Elevation:	4726(ft)

FIELD SAMPLING DATA

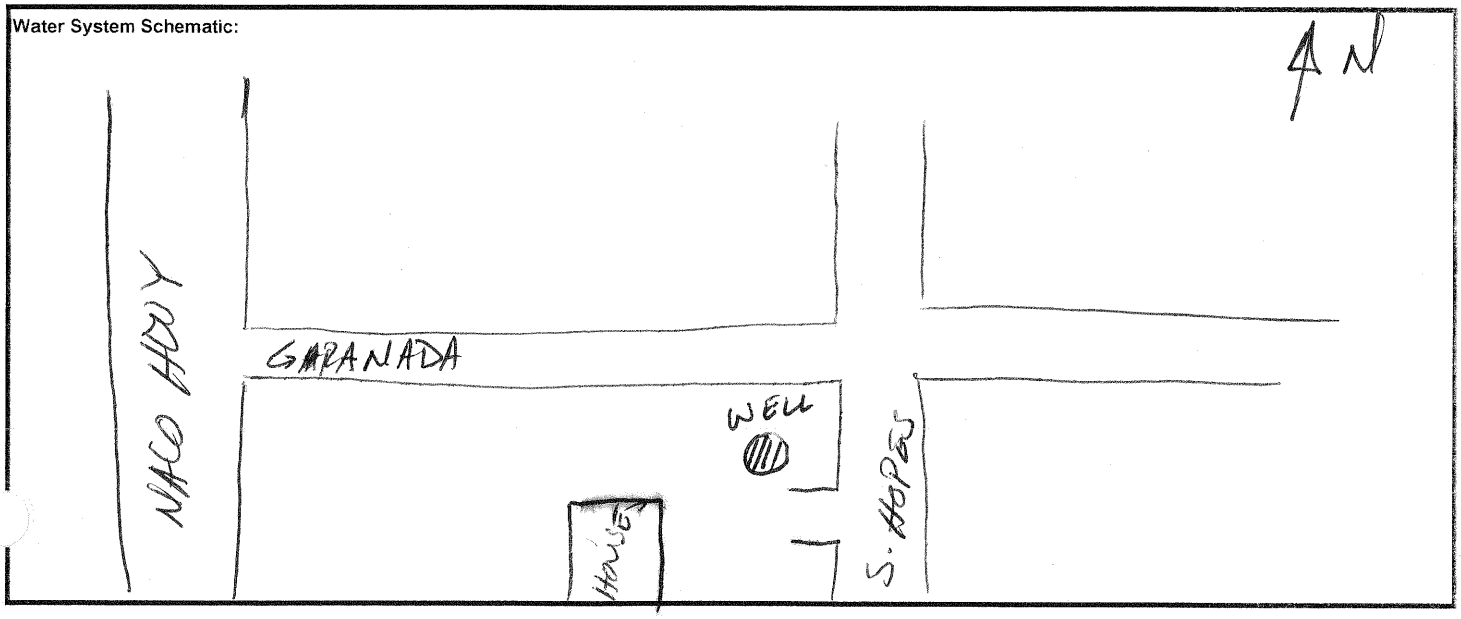
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1257	10		7.47	34.3	1090	CLEAR	N	
0102 pm	"		7.09	24.1	1063	"	"	
0107 pm	"		7.10	22.1	1063	"	"	
01:12 pm	"		7.12	21.6	1064	"	"	
01:17 PM	"		7.11	21.7	1062	"	"	
01:23 pm	"		7.08	21.8	1067	"	"	
TOTAL DISCHARGE = 260								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
PARRA	1330	PLASTIC	125/250 500	3	300.0	Y/N/N	N

Additional Comments: THE SAMPLES WERE COLLECTED AT 1330 DUE TO THE STABLE PARAMETERS AND THE PROPERTY WAS FLOATED.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	PIONKE	Date:	02/05/2008
ADWR No.	613395	Weather:	CLEAR
Location:	1633 Purdy Lane Off Purdy Lane West of Naco Hwy	Collected By:	AR/MA

WELL DATA

Well Depth (ft bls):	330'	Static Water Level (ft bmp):	NA
Casing Diameter (in):	8"	Date/Time:	02/05/2008
Well Use:	DOMESTIC	Point of Measurement:	—
3 Casing Volumes:	PURGED TILL STABLE	GPS: UTM:	3468956 12R 0601048
		Elevation:	4592

FIELD SAMPLING DATA

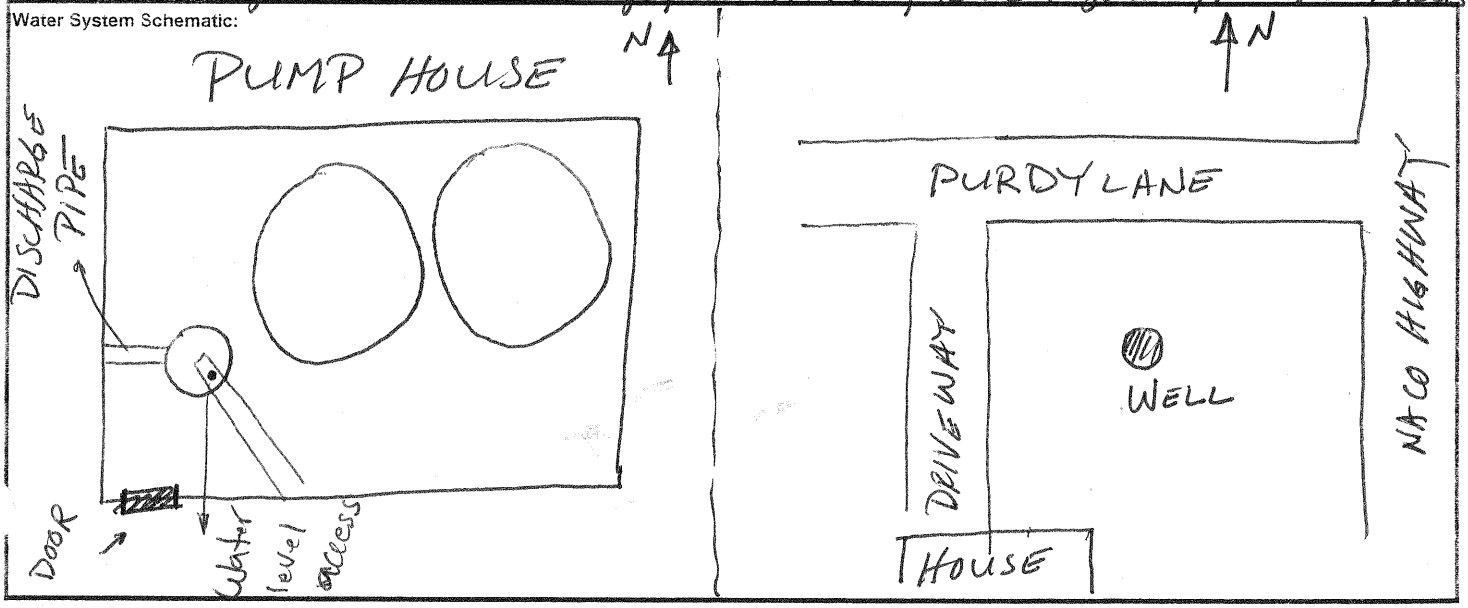
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
0955	15		7.38	15	1096	CLEAR	N	—
1000	"		7.40	19.7	936	"	"	—
1005	"		7.41	20.2	1015	"	"	—
1007	"		7.45	18.9	991	"	"	—
1010	"		7.45	19.9	904	"	"	—
1012	"		7.47	19.7	964	"	"	—
1015	"		7.53	19.9	910	"	"	—
TOTAL DISCHARGE = 330 G.								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
PIONKE	1017	PLASTIC	500	1	300.0	N	

Additional Comments: Cannot obtain W/L as the plug on well head is covered by discharge pipe. This site requires the use of 1½" pipe reduced down for garden hose at the discharge, or sample port, to discharge away from pump house.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	POOL	Date:	2/20/03
ADWR No.	~~55-579508~~ 509518	Weather:	Cloudy, Windy
Location:	2831 Willson Rd Naco, AZ 85603	Collected By:	Arnason

WELL DATA

Well Depth (ft bls):	313	Static Water Level (ft bmp):	204.22
Casing Diameter (in):	6"	Date/Time:	2-20-03 / 14:15
Well Use:	Domestic Supply	Point of Measurement:	Top of Casing
3 Casing Volumes:	479 Gal.	GPS:	12R 0599682 UTM 3478015
		Elevation:	4630' AMSL

FIELD SAMPLING DATA

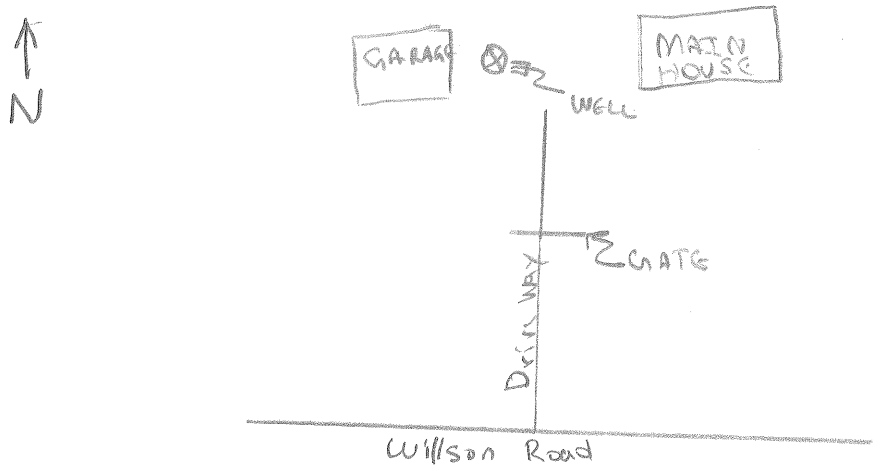
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1430	12	12	7.96	20.8	496	Clear	None	OPENED Bibal 1429
1433	12	48	7.95	20.9	496	↓	↓	
1438	12	108	8.16	20.6	492			
1441	12	144	8.01	20.8	497			
1446	12	204	7.95	20.9	497			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
POOL	1450	Plastic	250ml	1	300.1	None	SO_4

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	POWER	Date:	12 FEB 08
ADWR No.	55-624535	Weather:	sunny
Location:	1769 Gold Gulch Rd	Collected By:	KW / AP

WELL DATA

Well Depth (ft bls):	100	Static Water Level (ft bmp):	42.30
Casing Diameter (in):	7	Date/Time:	12 FEB 08 8:51
Well Use:	domestic	Point of Measurement:	TOC
3 Casing Volumes:	115 x 3 = 346 g	GPS:	UTM 3472737 12R 0608377
25gpm	13.84	Elevation:	4857

FIELD SAMPLING DATA

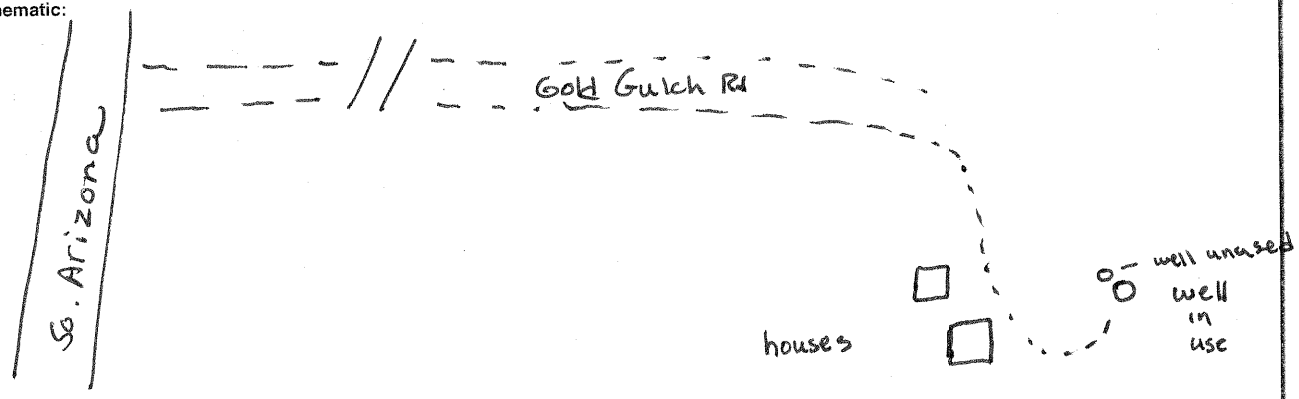
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
8:57	25		6.90	11.8	418	clear	none	
9:01	"		6.87	19.4	452	"	"	
9:05	"		6.94	20.3	433	"	"	
9:09	"		7.01	20.4	424	"	"	
9:13	*slowed		7.07	15.1	432	"	"	
9:16	25		7.11	18.9	428	"	"	
	TOTAL DISCHARGE =		16 minutes	X 25 =	400 GLS.			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
POWER	9:20	plastic	125/250/500	3	300.0	Y/N/N	

Additional Comments: 9:13 discharge rate slowed suddenly; then resumed by 9:16 – THE TOTAL TIME FOR DISCHARGE IS 16 min.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	55-216425	Date:	2-4-08
ADWR No.	RAMIREZ	Weather:	WINDY - CLOUDY
Location:	Dominguez St. Naco, AZ	Collected By:	~~AP/MA~~

WELL DATA

Well Depth (ft bls):	300'	Static Water Level (ft bmp):	NA
Casing Diameter (in):	~~6"~~ 6"	Date/Time:	02/04/2008
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	PURGE FOR STABILITY	GPS:	UTM: 3467586 12 R 05-99731
		Elevation:	4594 ft

FIELD SAMPLING DATA

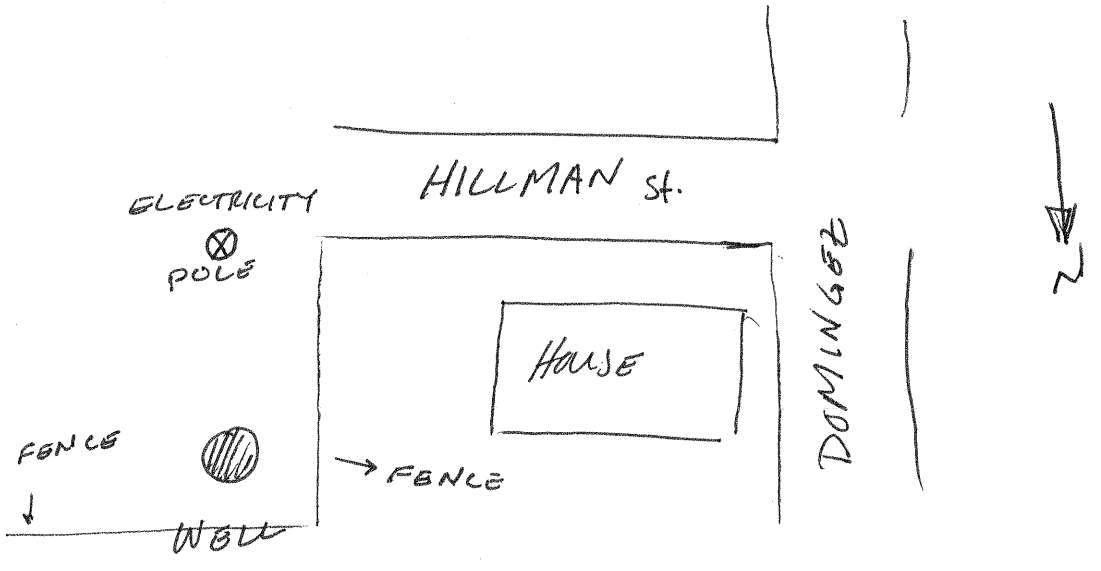
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
10:35	10	20	7.32	19.0	398	CLEAR	N	—
10:40	"	70	7.44	21.0	399	"	"	—
10:45	"	120	7.46	21.8	408	"	"	—
10:50	"	170	7.48	20.7	403	"	"	—
10:55	"	230	7.47	21.7	408	"	"	—

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
RAMIREZ	11:00	PLASTIC	250	1	300-0	N	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
ell ID:	RAY	Date:	15 Feb 08
ADWR No.	803772	Weather:	RAIN
Location:	648 E MULBERRY LN	Collected By:	KW & AP

WELL DATA

Well Depth (ft bls):	100'	Static Water Level (ft bmp):	40.85
Casing Diameter (in):	8"	Date/Time:	15 Feb 08 9:48
Well Use:	domestic	Point of Measurement:	TOC
3 Casing Volumes:	154 x 3 = 462	GPS:	47M 3469200 IRR 0607083
		Elevation:	4652

FIELD SAMPLING DATA

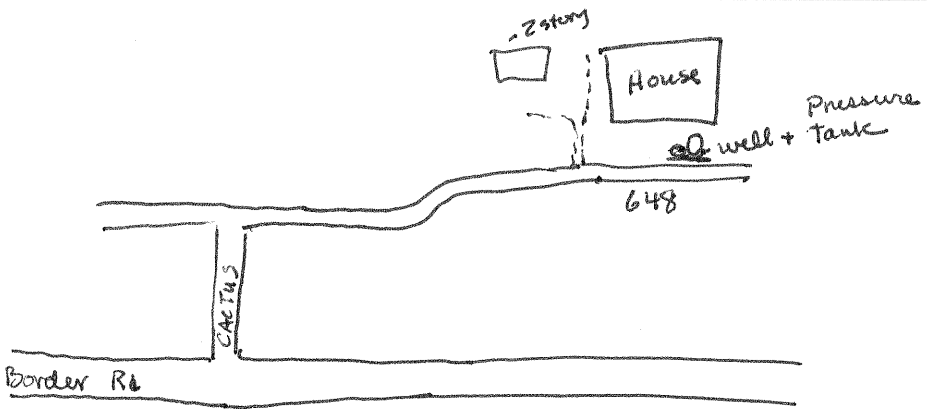
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
10:00	10	0	7.28	14.3	1587	clear	none	v. few flakes of rust
10:04	"	40	7.30	18.7	1609	"	"	"
10:10	"	100	7.31	17.9	1586	"	"	clear
10:14	"	140	7.33	19.1	1558	"	"	"
10:19	"	190	7.33	18.8	1556	"	"	"
10:24	"	240	7.30	19.1	1540	"	"	few rusty flakes

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
RAY	10:30	plastic	250	1	300.0	NO	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	RODRIGUEZ	Date:	2-14-08
ADWR No.	55-648360	Weather:	very windy, sunny
Location:	3773 S. Rodriguez Ave	Collected By:	AP + KW

WELL DATA

Well Depth (ft bls):	approx. 200	Static Water Level (ft bmp):	dry
Casing Diameter (in):	unknown	Date/Time:	2-14-08
Well Use:	not in use	Point of Measurement:	TOC
3 Casing Volumes:		GPS:	UTM 3467447 12E 0599965
		Elevation:	4593

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well no longer in use. Dry; feels about 200' deep. ADWR has no data other than reg # & drilled ~50 yrs ago

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720010	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	ROGERS 803	Date:	2-7-08
ADWR No.	641803	Weather:	Clear
Location:	Mule Deer Rd Naco, AZ	Collected By:	AP/MA

WELL DATA

Well Depth (ft bls):	300'	Static Water Level (ft bmp):	129.85
Casing Diameter (in):	6"	Date/Time:	2-7-08
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	250x3=750	GPS:	3468416 12R 600980
		Elevation:	4566

FIELD SAMPLING DATA

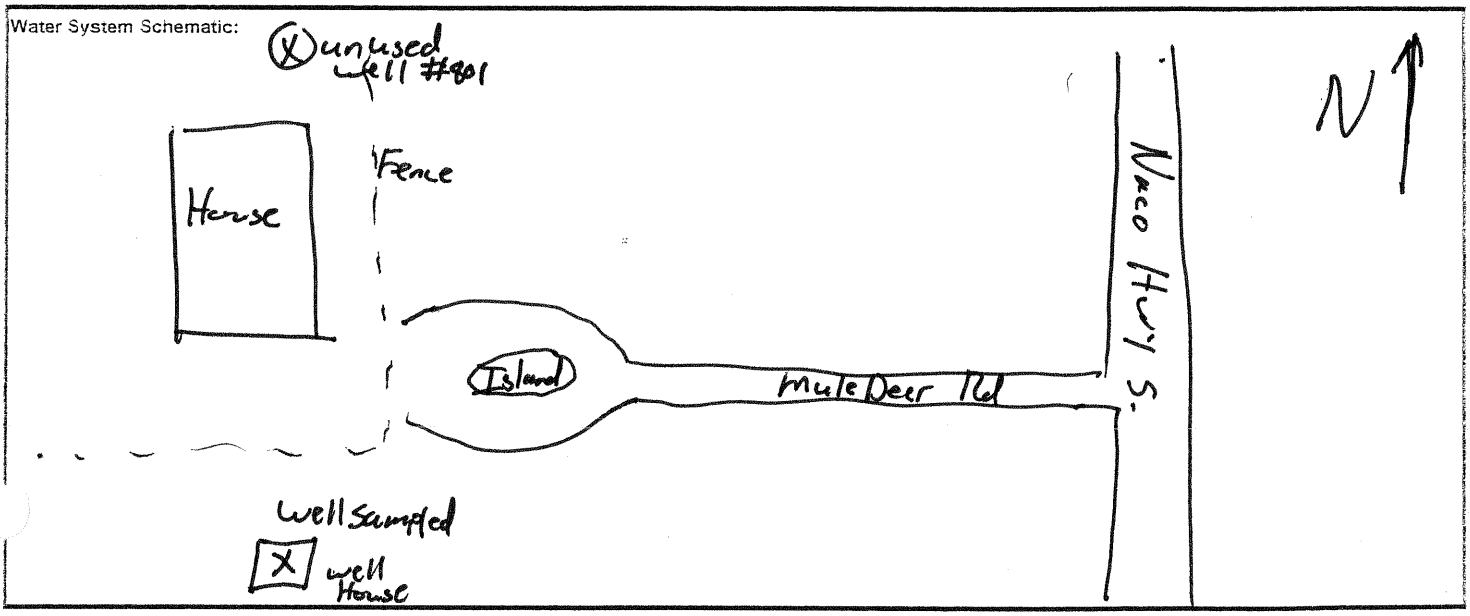
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1358	10		7.34	17.4	451	Clear	No	
1400	"		7.41	17.1	448	"	"	
1403	"		7.52	17.9	443	"	"	
1408	"		7.58	19.0	443	"	"	
1413	"		7.53	19.5	449	"	"	
1418	"		7.52	19.8	455	"	"	
		Total Discharge 200 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
ROGERS 803	14:20	Plast.	250ml	1	300.0	N	

Additional Comments: Could not purge for full 75 min as the yard is flooding

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FMI Sierrita Operations
Phase No.	2.2	Date:	3-20-08
Well ID:	ROGERS 803	Weather:	Clear
ADWR No.	55-641803	Collected By:	MA

WELL DATA

Well Depth (ft bls):	140'	Time:	7:30
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	129.85' (2-7-08)	GPS:	UTM 3468416 12R 0600980
1 Casing Volume (gals):	14.6	Elevation:	4566
3 Casing Volumes (gals):	44.0		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
0736	5	5	7.08	13.6	600	None	None	Open b.BQ 735
0738	5	45	7.31	16.6	590			
0740	5	75	7.39	18.4	601			
0742	5	105	7.44	18.5	602			
0744	5	135	7.45	18.6	601			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
Rogers 803	0745	Plastic	125/250ml	2	EPA 300.0	NO3/None	Filtered
ROGERS 803	0745	Plastic	250/~~500~~ml	1	EPA 300.0	None	Unfiltered

Additional Comments: RESAMPLE FOR FULL SUITE

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	87.2001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	ROGERS E	Date:	02/04/2008
ADWR No.	55-216018	Weather:	WINDY - CLEAR
Location:	Dominguez / Rogers St. Naco, AZ	Collected By:	ALI / MARK A

WELL DATA

Well Depth (ft bls):	285	Static Water Level (ft bmp):	NM (OBSTRUCTION)
Casing Diameter (in):	8"	Date/Time:	02/04/2008 / 9:00 AM
Well Use:	Domestic	Point of Measurement:	TOC.
3 Casing Volumes:	365x3 = 1096	GPS:	UTM: 3467634 R: 0600464
@ 15 gpm = 73 min purge		Elevation:	4607 (ft)

FIELD SAMPLING DATA

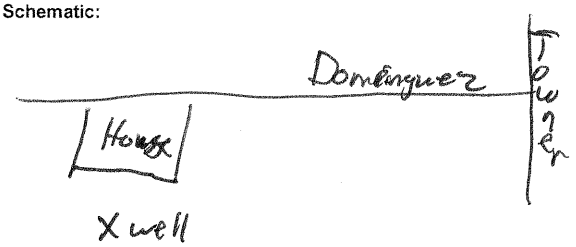
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
0915	15		7.30	20.2	434	CLEAR	N	
0918	"		7.35	19.9	432	"	"	
0925	"		7.33	20.4	436	"	"	
0930	"		7.40	20.9	436	"	"	
0935	"		7.40	21.0	435	"	"	
TOTAL DISCHARGE =						375 G		

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
ROGERS E	0930	Plastic	250	1	300.0	None	

Additional Comments: Pump turned on at 917
No other wells on property.

Water System Schematic:



2

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	RUIZ	Date:	02/05/2008
ADWR No.	53/770	Weather:	CLEAR
Location:	S. Barnett Rd San Jose	Collected By:	M/H

WELL DATA

Well Depth (ft bls):	312	Static Water Level (ft bmp):	293.29
Casing Diameter (in):	6	Date/Time:	02/05/2008
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	~~68.8~~ 27.9x3 = 84 G	GPS: UTM	3471414 12R 0602852
@ 15 gpm = 6 min purge		Elevation:	4749

FIELD SAMPLING DATA

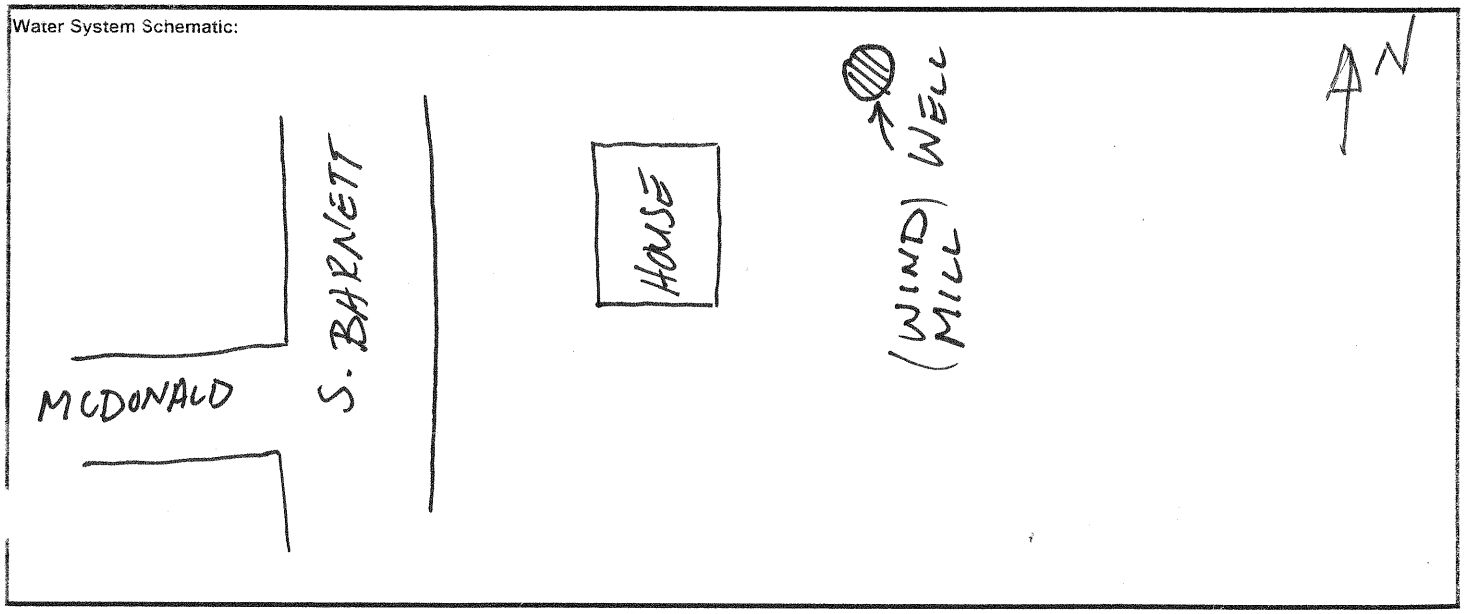
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
0830	15		7.86	16.9	4.53	CLEAR	N	
0840	"		7.58	18.8	4.54			
0850	"		7.64	19.6	996			
0855	"		7.73	18.2	445			
TOTAL DISCHARGE = 300 G.								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
RUIZ	8:50	PLASTIC	250	1	300.0	N	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	SCHWARTZ	Date:	02/08/2008
ADWR No.	210865	Weather:	CLEAR
Location:	3468 S. Clubview Terrace Naco, AZ	Collected By:	AP/MA

WELL DATA

Well Depth (ft bls):	305'	Static Water Level (ft bmp):	121.80
Casing Diameter (in):	6"	Date/Time:	02/08/2008
Well Use:	DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	269x3=806÷15= 54 min Purge @ 15gpm	GPS: UTM	3468270 12R 0600813
		Elevation:	4567

FIELD SAMPLING DATA

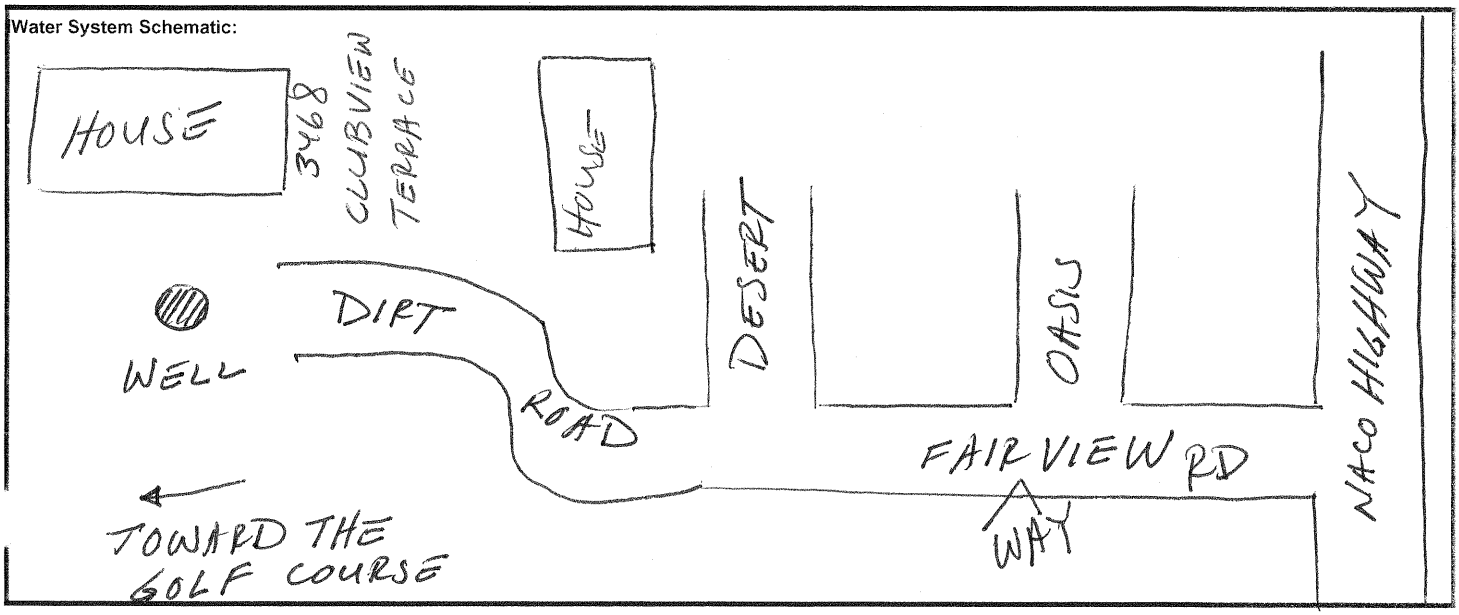
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1007	15	15	7.55	20.4	509	clear	None	
1009	"	45	7.49	21.2	510	"	"	
1011	"	75	7.50	21.4	504	"	"	
1015	"	135	7.52	21.7	507	"	"	
1020	"	210	7.47	21.8	506	"	"	
1026	"	300	7.46	21.7	505	"	"	
1028	"	330	7.52	21.5	506	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
SCHWARTZ	1030	Plastic	250mL	1	300.0	None	Filtered

Additional Comments: Only this one well on property

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000.1	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	SRC *	Date:	3/20/08
ADWR No.	55-211345	Weather:	Clear
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	965	Static Water Level (ft bmp):	Capped
Casing Diameter (in):	6 5/8"	Date/Time:	3/20/08 15:15
Well Use:		Point of Measurement:	
3 Casing Volumes:		GPS:	12R 0599718 3472516
		Elevation:	4745

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

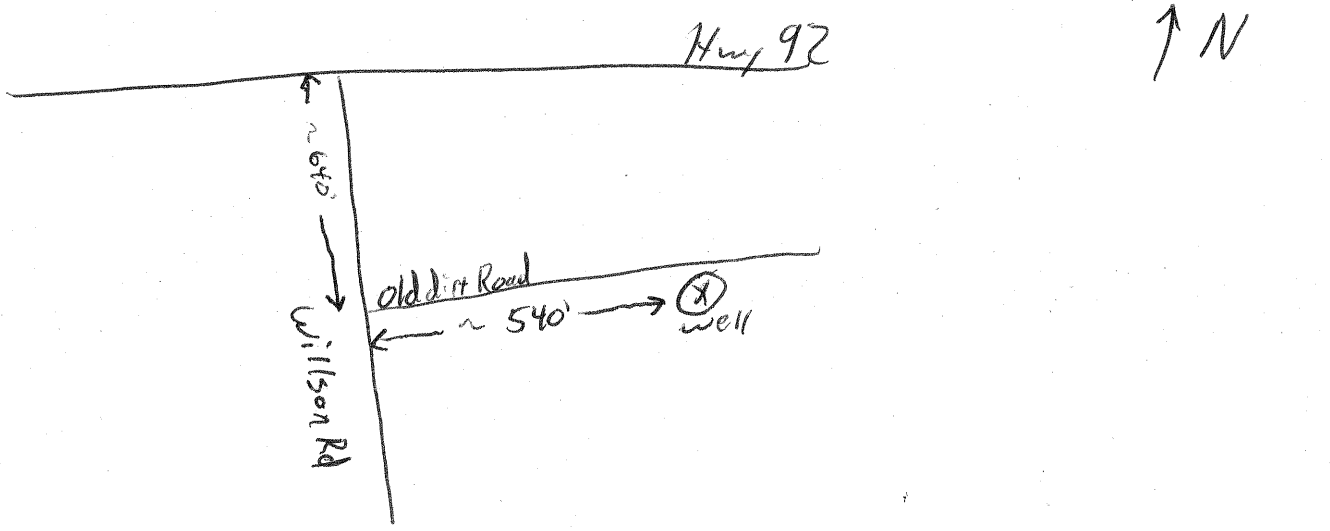
SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well has welded cap - No sample collected

* SPECIALTY RESTAURANTS CORPORATION

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	SUNBELT MARKETING	Date:	02/06/2008
ADWR No.	201531	Weather:	CLEAR
Location:		Collected By:	AP/MA

WELL DATA

Well Depth (ft bls):	380(ft)	Static Water Level (ft bmp):	352.10(ft)
Casing Diameter (in):	6"	Date/Time:	02/05/2008 1350
Well Use:	DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	41X3 = 123 ÷ 12 = 11 min	GPS: UTM	3471737 12R 0606008
		Elevation:	4788

FIELD SAMPLING DATA

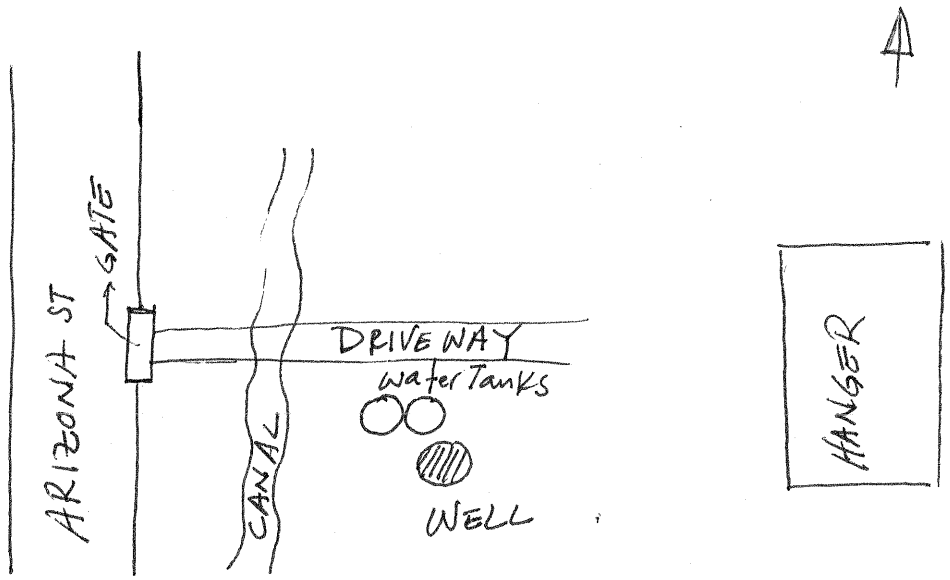
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1400	12	0	8.37	13.2	403	~~TAN~~ gy	N	—
1405	"	60	8.48	12.1	407	TAN	N	—
1410	"	180	8.57	11.5	403	TAN	N	—
1415	"	240	8.62	11.2	401	TAN	N	—
TOTAL DISCHARGE = 300 G.								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
SUNBELT ~~MW~~	1425	PLASTIC	125/250	3	300-0	Y/N/N	—
~~KETTING~~			500				

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	SWAN	Date:	2-13-08
ADWR No.	No Record	Weather:	Sunny; windy
Location:	2601 SWAN Rd Bisbee, AZ	Collected By:	AP/KW

WELL DATA

Well Depth (ft bls):	98	Static Water Level (ft bmp):	26.50
Casing Diameter (in):	4	Date/Time:	2-13-08 12:45
Well Use:	domestic	Point of Measurement:	TOC
3 Casing Volumes:	47 x 3 = 141	GPS:	UTM 3470649 12R 607378
		Elevation:	4694

FIELD SAMPLING DATA

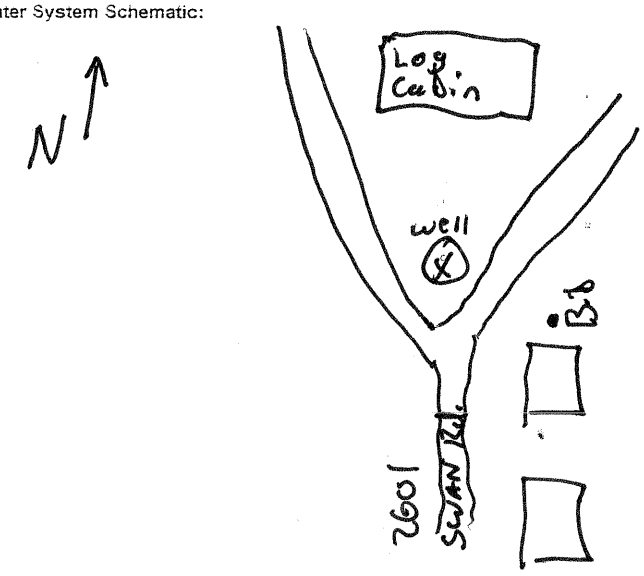
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
12:57	10		7.24	19.5	455	clear	No	few brn sed flakes
13:01	"		7.29	20.5	458	"	"	very few brn sed flakes
13:04	"		7.26	20.6	458	"	"	clear, no sediment
13:07	"		7.26	20.2	459	"	"	"
13:11	"		7.28	20.7	467	"	"	"

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
SWAN	13:15	plastic	125/250/500	3	300.0	Y/N/N	

Additional Comments: well depth est. based on owner. 4 houses using this well.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-2	Date:	03-04-08
ADWR No.	522573	Weather:	Sunny, breezy
Location:	D-24-24-4aac	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	640	Static Water Level (ft bmp):	obstructed @ 339.70
Casing Diameter (in):	4"	Date/Time:	03/04/08
Well Use:	monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	—	GPS:	UTM 347 2019 x 12R 0604155
		Elevation:	4799

FIELD SAMPLING DATA

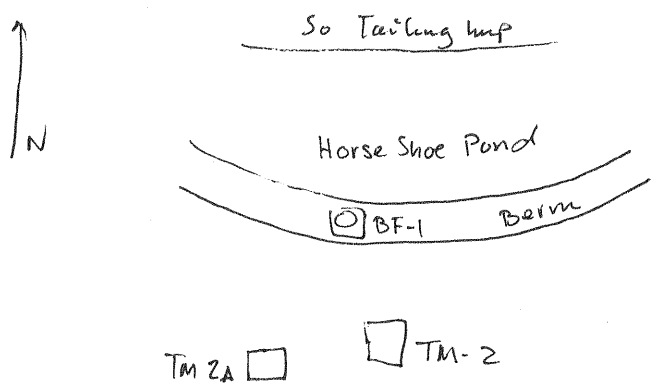
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13:51	dry							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Dry - no sample

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-2A	Date:	03-04-08
ADWR No.	55 - 522574	Weather:	sunny
Location:	D-24-24-4aac	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	925	Static Water Level (ft bmp):	346.62
Casing Diameter (in):	4	Date/Time:	03-04-08 13:43
Well Use:	monitoring	Point of Measurement:	T.O.C.
3 Casing Volumes:	378 gal x 3 = 1134	GPS:	UTM 347 2019 x 12R 0604155
	113 min	Elevation:	4799

FIELD SAMPLING DATA

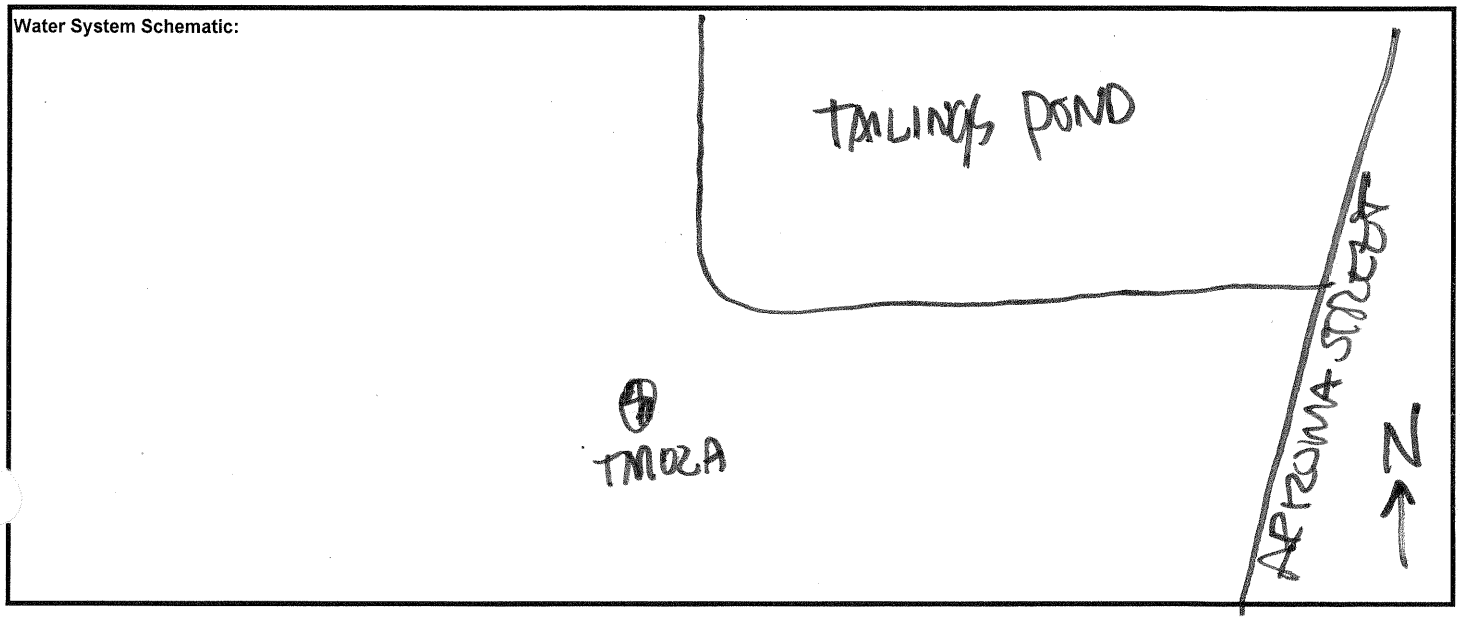
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13:54	10	0	10.04	21.6	263	light brn	none	
14:00	"	60	9.08	21.9	295	"	"	
14:03	"	90	8.67	22.6	302	almost clear	none	few rust flecks
14:08	went dry/140							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-2A	14:25	plastic	1L 250 250	3	300.0	Y/N/N	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720022	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-3	Date:	3/12/08
ADWR No.	55-522575	Weather:	clear
Location:	CRAWford Mill	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200	Static Water Level (ft bmp):	127.14
Casing Diameter (in):	4"	Date/Time:	3/12/08
Well Use:	Monitoring	Point of Measurement:	TOC
3 Casing Volumes:	Casing Vol = 47.6 gal x 3 = 143 gal	GPS:	12R 0606365 UTM 3473710
		Elevation:	4885

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Pump would not stay engaged – pump controller opens – resets

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720022	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-05 MILLER	Date:	2-26-08
ADWR No.	522694	Weather:	Clear/cold
Location:		Collected By:	MA/KW

WELL DATA

Well Depth (ft bis):	160	Static Water Level (ft bmp):	Dry Bottomed at 154.30
Casing Diameter (in):	4"	Date/Time:	2-26-08
Well Use:		Point of Measurement:	TOC
3 Casing Volumes:		GPS:	12R 603900 3467190
		Elevation:	4615

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Sounder Probe hit bottom @ 154.30' btoc

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-6 MILLER	Date:	02-26-08
ADWR No.	522695	Weather:	sunny, breezy
Location:	D-24-24-14 bacc	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	200	Static Water Level (ft bmp):	158.78
Casing Diameter (in):	4	Date/Time:	2/26/08 9:00
Well Use:	Monitoring	Point of Measurement:	TOC
3 Casing Volumes:	41 x 3 = 123	GPS:	UTM 3468377 12R 0606061
	7 min purge	Elevation:	4687

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
2/27 8:30	12	0	7.54	17.9	467	light brn	strong	rotten smelling
8:33		36	7.50	18.9	466	almost clr	decreased	nearly clear
8:37		96	7.45	19.5	457	clear	none	
8:42	144	156	7.44	19.6	457	clear	none	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
2/27 TM-6	8:45	plastic	125/250/250	3	300.0	Y/N/N	

Additional Comments: early odor - sulfurous rotten egg odor. Cleared up quickly. Sample collected 2/27 after getting adaptor apparatus yesterday

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-7	Date:	03-06-08
ADWR No.	55-522576	Weather:	sunny breezy cool
Location:	D. 24-24. 4bca East of Helen St	Collected By:	MA + KW

WELL DATA

Well Depth (ft bis):	350	Static Water Level (ft bmp):	— obstructed @ 58.15
Casing Diameter (in):	4"	Date/Time:	03-06-08 13:11
Well Use:	monitoring	Point of Measurement:	—
3 Casing Volumes:	49 x 3 = 147 (based on 1989 W.L.)	GPS:	UTM 3471918 x 0603010
		Elevation:	4759

FIELD SAMPLING DATA

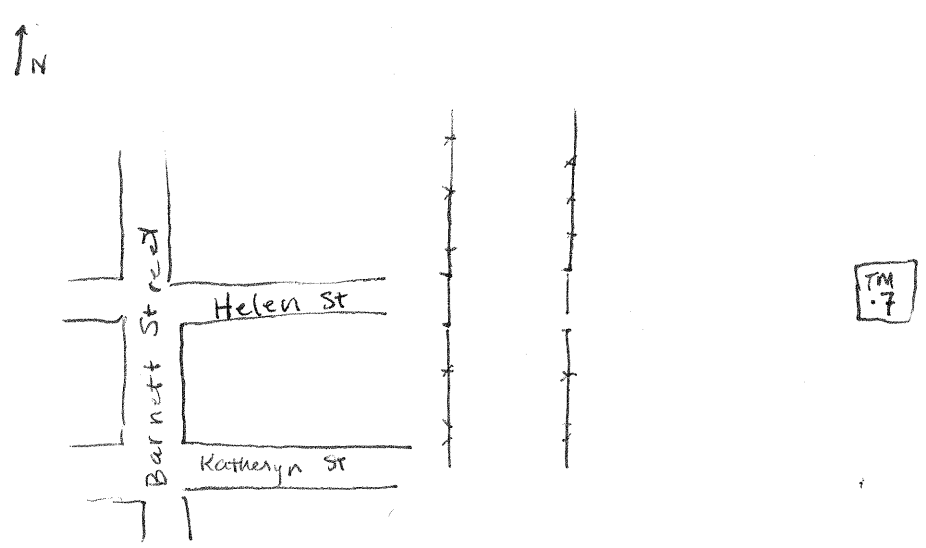
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13:29	9		7.45	20.8	726	clear	none	
13:31	ran out of water	18						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-7	13:50	plastic	x5 x5 x5	3	300.0	Y/N/N	

Additional Comments: Ran dry after 2 minutes. Allowed 18 minutes to recover. Sample slightly tannish colored. No odor

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-08 SWAN	Date:	2-13-08
ADWR No.	55-522817	Weather:	Sunny, windy ; becoming cloudy
Location:	2594 Windmill Ranch Rd (off of Swan Rd)	Collected By:	KW/AP

WELL DATA

Well Depth (ft bls):	817	Static Water Level (ft bmp):	unable to measure (>500')
Casing Diameter (in):	4"	Date/Time:	2/13/08 13:36
Well Use:	domestic	Point of Measurement:	TOC
3 Casing Volumes:	123 x 3 = 369	GPS:	3470668 12R 607788
		Elevation:	4701

FIELD SAMPLING DATA

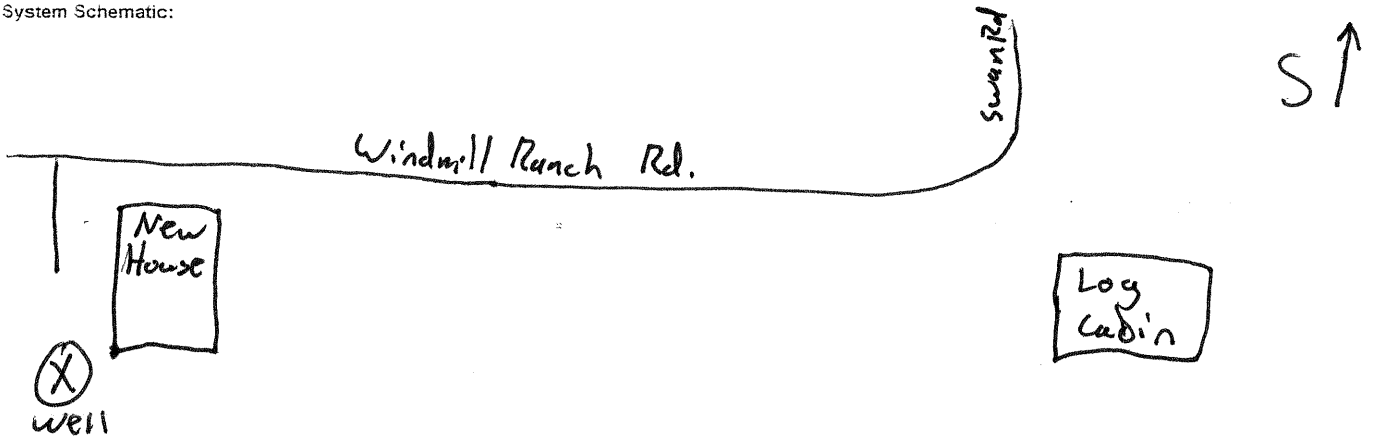
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13:55	10		7.63	25.2	511	clear	No	Sampled from Tank

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-08 SWAN	14:05	Plastic	125/250/500	3	300.0	Y/N/N	

Additional Comments: At the request of owner, sample was taken from 1000 gal tank which was filled on 2-11-08

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-11 PIONKE	Date:	3-11-08
ADWR No.	55-522815	Weather:	Clear
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	160'	Static Water Level (ft bmp):	Dry to 140'
Casing Diameter (in):	6" to 20' 4" from 20' to 160'	Date/Time:	3-11-08 / 18:05
Well Use:	Monitoring	Point of Measurement:	
3 Casing Volumes:		GPS:	12R 0600830 UTM 3468934
		Elevation:	4570

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well Not in use

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720022	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-12	Date:	2-26-08
ADWR No.	522697	Weather:	Clear
Location:		Collected By:	MA/KW

WELL DATA

Well Depth (ft bls):	175	Static Water Level (ft bmp):	Dry (Bottomed at 159.80)
Casing Diameter (in):	4"	Date/Time:	2-26-08
Well Use:	Monitoring	Point of Measurement:	TOC
3 Casing Volumes:		GPS:	12R 601518 3467147
		Elevation:	4610

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Sounder Probe hit the bottom at 159.80' btoc

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720022	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-13	Date:	3-11-08
ADWR No.	55-522698	Weather:	Clear
Location:	Naco, AZ	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200	Static Water Level (ft bmp):	Dry to 180'
Casing Diameter (in):	6" to 20' 4" to 200'	Date/Time:	3-11-08/1600
Well Use:	monitoring	Point of Measurement:	
3 Casing Volumes:		GPS:	12R 0601269 UTM 3469822
		Elevation:	4626

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Not sampled - Sounder hit bottom @ 180' btoc - Dry

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	87200.10	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-14	Date:	02/08/2008
ADWR No.	522816	Weather:	CLEAR
Location:	NACO, AZ	Collected By:	AP/MA

WELL DATA

Well Depth (ft bls):	215'	Static Water Level (ft bmp):	~~210.79~~ 211.79 (AP)
Casing Diameter (in):	6"	Date/Time:	02/08/2008
Well Use:	~~DOMESTIC~~ NOWSW	Point of Measurement:	TOC
3 Casing Volumes:	well is near dry	GPS:	UTM 3470110 12R 0599627
		Elevation:	4618

FIELD SAMPLING DATA

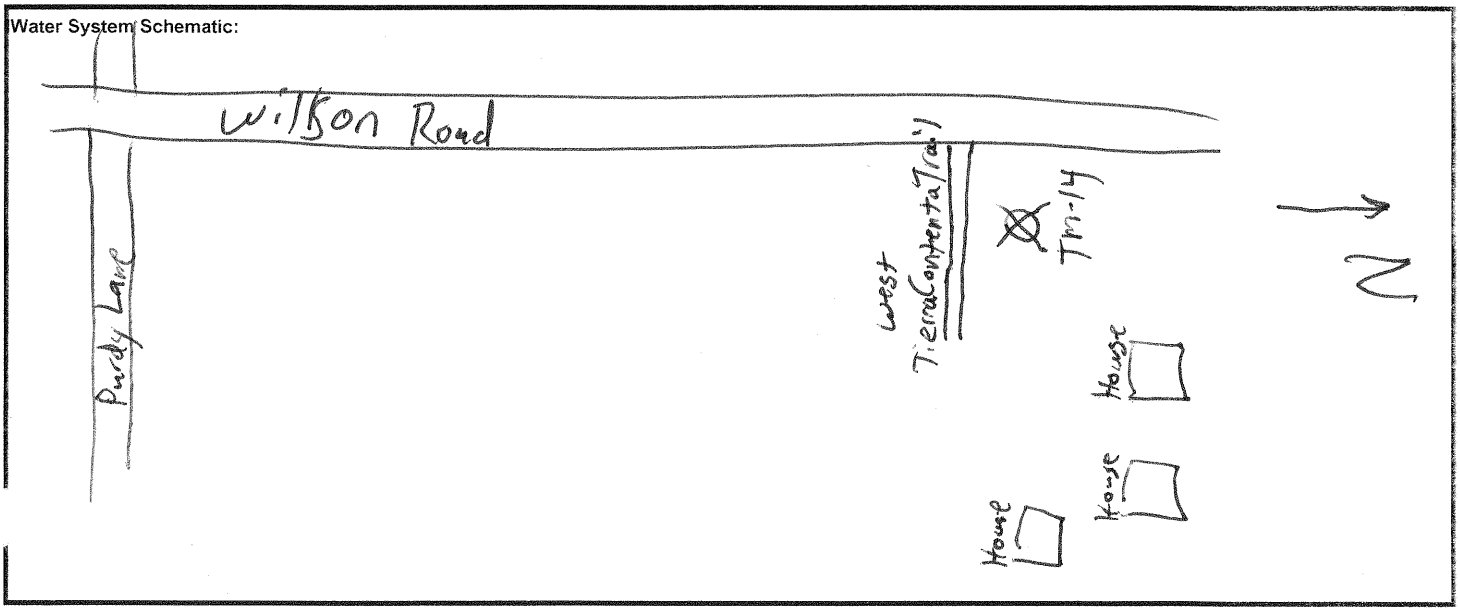
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1116	<2gpm	0	7.62	23.5	321	Clear	None	
1117	<2gpm	~1	7.64	22.4	319			
1119	<1gpm	~4	7.68	21.4	316			
1121	<1gpm	~6	7.65	22.0	317			
1123	<1gpm	~7	7.64	21.6	319			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-14	1125	Plastic	125/250/500	3	300.0	HNO_3/None	Filtered/unfiltered
DUP020908		Plastic	125/250/500	3	300.0	HNO_3/None	Filtered/unfiltered

Additional Comments: 1125 water flow has almost stopped.
Collected Field Blank FB020808

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

oject No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
ell ID:	TM-15 MILLER	Date:	2/27/08
ADWR No.	522699	Weather:	sunny breezy
Location:	D.24.24.6 bcc Willson Road	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	325	Static Water Level (ft bmp):	294.90
Casing Diameter (in):	4"	Date/Time:	2/27/08 9:20
Well Use:	monitoring / Domestic	Point of Measurement:	T.O.C
3 Casing Volumes:	30 x 3 = 90 (61)	GPS:	UTM 3471436 12R 0599618
22 gal x 3 = 61 = 3 casing V	9 min purge	Elevation:	4765

FIELD SAMPLING DATA

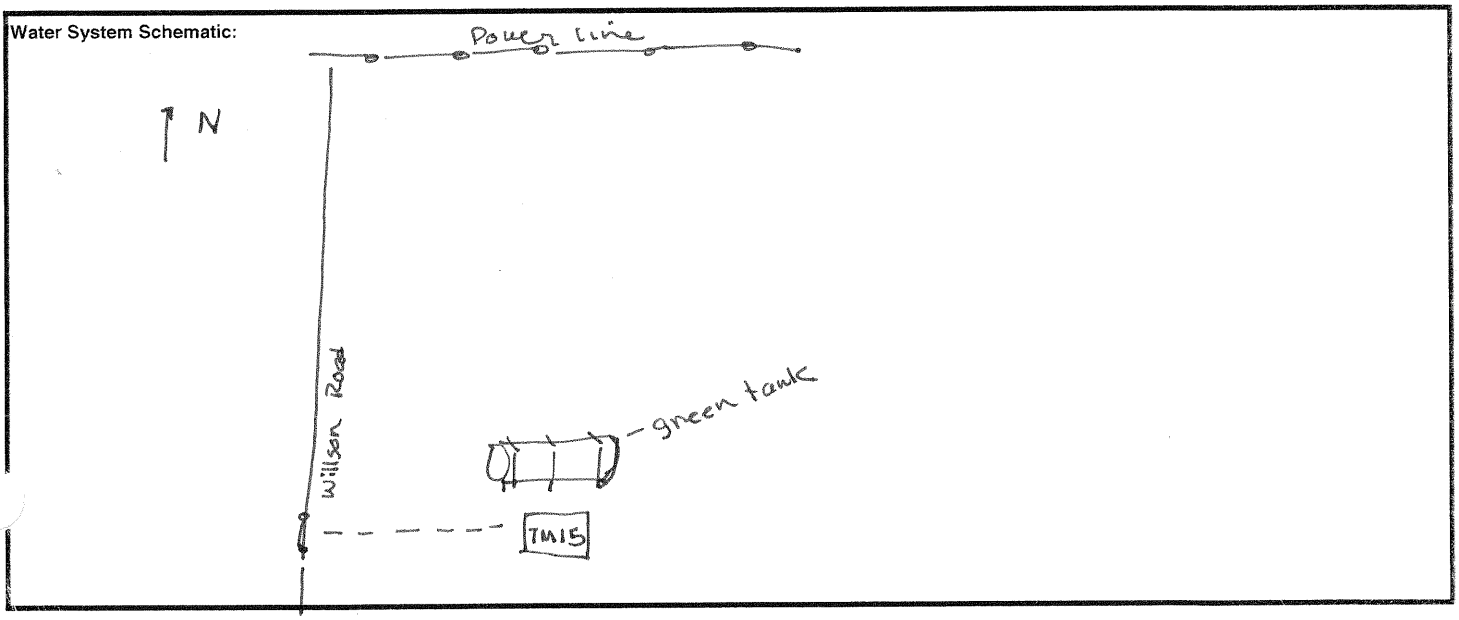
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
9:56	7	0	7.71	18.9	345	clear	none	
9:58		14	7.89	21.2	348	"	"	
10:01		35	7.81	21.7	346	"	"	
10:04		63	7.73	21.8	344	"	"	
10:06	70	77	7.66	21.9	344	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-15 MILLER	10:07	plastic	125/250/250	3	300.0	Y/N/N	

Additional Comments: sounder hung up @ 147'

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-16	Date:	03-05-08
ADWR No.	55- 522578	Weather:	windy, partly cloudy
Location:	D-24-24 10 dba	Collected By:	KW + M-A

WELL DATA

Well Depth (ft bls):	115	Static Water Level (ft bmp):	81.00
Casing Diameter (in):	4	Date/Time:	03-05-08 13:01
Well Use:	Monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	22.2 x 3 = 66.6	GPS:	12R 0605587 UTM 3469847
		Elevation:	4685

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
13:13	15	0	7.14	21.2	1334	none	none	clear
13:15	"	30	7.14	20.8	1328	"	"	"
13:17	"	60	7.15	20.8	1342	"	"	"
13:19	"	90	7.17	20.6	1351	"	"	"

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-16	13:20	plastic	125, 250, 250	3	300.0	Y/N/N	

Additional Comments:

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720022	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-17	Date:	3-12-08
ADWR No.	522700	Weather:	Clear
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	200'	Static Water Level (ft bmp):	Dry
Casing Diameter (in):	4"	Date/Time:	3-12-08
Well Use:	Monitoring	Point of Measurement:	TOC
3 Casing Volumes:		GPS:	12R 604016 3468451
		Elevation:	4622

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Dry to 188.50 btoc

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-19	Date:	03-06-08
ADWR No.	55-522581	Weather:	clear, windy
Location:	D-24-24-8ddc2	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	210	Static Water Level (ft bmp):	dry / obstructed @ 179'
Casing Diameter (in):	4"	Date/Time:	3/6/08 11:55
Well Use:	monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	—	GPS:	3469185 x 0602464
		Elevation:	4615

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
dry								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: NO SAMPLE obstructed, turned pump on, no water

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-19A	Date:	3/6/08
ADWR No.	55-522580	Weather:	clear - windy
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	~~210~~ 700	Static Water Level (ft bmp):	199.85
Casing Diameter (in):	4"	Date/Time:	3/6/08 11:11
Well Use:	Monitoring	Point of Measurement:	TOC
3 Casing Volumes:	1 vol = 65 gal x 3 = 19.5	GPS:	3469185 x 0602464 ←TM-19
		Elevation:	4615

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1126	20	0	8.17	17.5	458	clear	None	
1127	"	20	7.64	19.8	522			
1129	"	60	7.99	21.0	460			
1132	"	120	8.04	21.5	462			
1135	"	180	8.06	21.2	459	~~Slight~~		Slightly Rusty in color
1138	"	240	8.02	22.2	471	Rusty		

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-19A	11:40	Plastic	125/250/250	3	300.0	HNO_3/None/None	

Additional Comments: This well will likely be pumped dry as pump is rated at 45gpm. But it didn't

Water System Schematic:

19A = 522580 700
19 522581 210

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-41	Date:	03-04-08
ADWR No.	55-562555	Weather:	sunny, breezy
Location:	D-23-24-3ccc	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	210	Static Water Level (ft bmp):	193.20
Casing Diameter (in):	5	Date/Time:	03-04-08 14:48
Well Use:	monitoring	Point of Measurement:	T.OC.
3 Casing Volumes:	17 gal x 3 = 52	GPS:	UTM 3471308 x 0604838
		Elevation:	4770

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
	dry / no sample						bad air smell from hose	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: No sample - pump above current WL? Foul odor came up w/ sounder

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-42	Date:	03-05-08
ADWR No.	55-562554	Weather:	windy, partly cloudy
Location:	D23-24-10 CBC just North of Purdy Lane	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	250	Static Water Level (ft bmp):	211.04
Casing Diameter (in):	5	Date/Time:	03-05-08 12:18 (14:18)
Well Use:	Monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	40 gal x 3 = 120	GPS:	12R 0603698 x 3469105
		Elevation:	4645

FIELD SAMPLING DATA

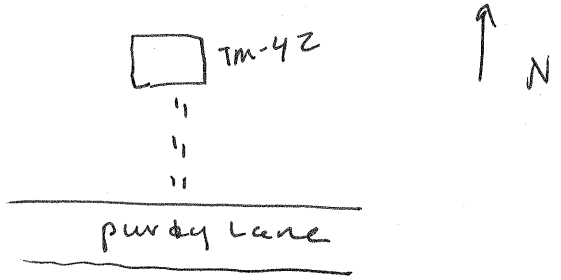
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
14:25	4	0	7.96	20.1	1316	clear	none	
14:29	"	16	7.16	20.5	1393	slightly brownish	"	
14:33	"	32	7.10	20.7	1357	clear	"	
14:38	"	52	7.10	20.8	1342	"		
	running out of water							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-42	14:40	plastic	125, 250, 250	3	300.0	Y/N/N	

Additional Comments: Flow decreasing @ 14:38

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-43	Date:	03.03.08
ADWR No.	569729	Weather:	Sunny, cold
Location:	See GPS	Collected By:	MA / KW

WELL DATA

Well Depth (ft bls):	210	Static Water Level (ft bmp):	~~133.71~~ 149.05
Casing Diameter (in):	4"	Date/Time:	03.03.08
Well Use:	MONITORING	Point of Measurement:	TOC
3 Casing Volumes:	130 gallons	GPS:	605358 E 3474663 N
		Elevation:	

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1203	7	0	6.09	19.5	2866	clear	yes	
1206		21	6.22	20.2	2685			
1210		49	6.23	19.9	2698			
1214		77	6.20	20.1	2718			
1218		105	6.20	20.2	2762			
1222		133	6.17	19.9	2775			
1226		161	6.18	19.8	2817			
1230		189	6.17	19.9	2788			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-43	1235	Plastic	125/250/1L	3	300.0		

Additional Comments:

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-43A	Date:	03.03.08
ADWR No.	564726	Weather:	Sunny cold
Location:	See GPS	Collected By:	MA/KW

WELL DATA

Well Depth (ft bls):	820	Static Water Level (ft bmp):	~~149.05~~ 133.71
Casing Diameter (in):	4"	Date/Time:	03.03.08
Well Use:	Monitoring	Point of Measurement:	TOC
3 Casing Volumes:	1344.0 gallons	GPS:	605364 E 3474672 N
		Elevation:	4969

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1245	10	0	10.02	18.9	370	cloudy	Yes	
1249		40	8.69	20.3	350	"		
1253		80	8.65	20.7	348	"		
1257		120	8.60	21.2	347	"		
1301		160	8.57	21.0	341	"		

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM_43A	13:05	Plastic	125/250	3	300.0		

Additional Comments: Sample had some debris and was cloudy.

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-43B	Date:	03-03-08
ADWR No.	55-565004	Weather:	sunny, windy, cold
Location:	D-23.24-27 dad	Collected By:	MA + KW

WELL DATA

Well Depth (ft bls):	215	Static Water Level (ft bmp):	64.0
Casing Diameter (in):	5	Date/Time:	03-03-08 14:45
Well Use:	monitoring	Point of Measurement:	T.O.C
3 Casing Volumes:	154 gal x 3 = 462 gal	GPS:	0605816 x 3474382
		Elevation:	4920 ft amsl

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
15:06	7	0	6.69	19.1	520	clear	strong, sulf	few sediments (brown)
15:11	"	35	6.76	20.3	517	"	"	"
15:16	"	70	6.77	20.3	515	"	moderate	"
15:21	"	105	6.81	20.4	514	"	"	"
15:31	"	175	6.79	20.6	514	"	"	"
15:39	Pump is off - No Flow							
15:49	Pump on collect sample closeout							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TM-43B	15:49	plastic	125/250/250	3	300.0	Y/N/N	

Additional Comments: Rotten egg sulfurous odor.

Water System Schematic:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	871002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TM-45	Date:	03-05-08
ADWR No.	55-564728	Weather:	sunny, windy, cool
Location:	D.23-21-27 bcc; access via	Collected By:	KW + MA

WELL DATA

Well Depth (ft bls):	520	Static Water Level (ft bmp):	>500'
Casing Diameter (in):	4½	Date/Time:	03-05-08 10:30
Well Use:	monitoring	Point of Measurement:	T.O.C.
3 Casing Volumes:	—	GPS:	IZR 0604401 x WIM 3474741
		Elevation:	5003

FIELD SAMPLING DATA

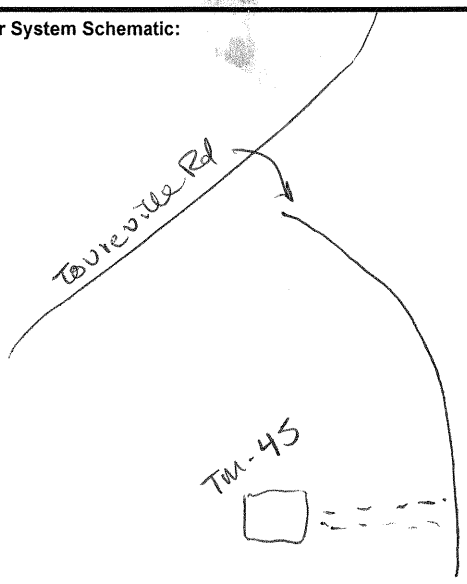
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
10:53	0	0						dry

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Well dry. NO sample

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TVI 236	Date:	2-21-08
ADWR No.	55-802236	Weather:	Clear
Location:	Turquoise Valley Golf RV-Rest. 1794 W. Newell St Naco, AZ	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bls):	222	Static Water Level (ft bmp):	Last known 140' btoc (1999)
Casing Diameter (in):	12"	Date/Time:	2/21/08
Well Use:	Irrigation	Point of Measurement:	Top of Casing
3 Casing Volumes:	1445 gal.	GPS:	600564 / 3467991
		Elevation:	4572'

FIELD SAMPLING DATA

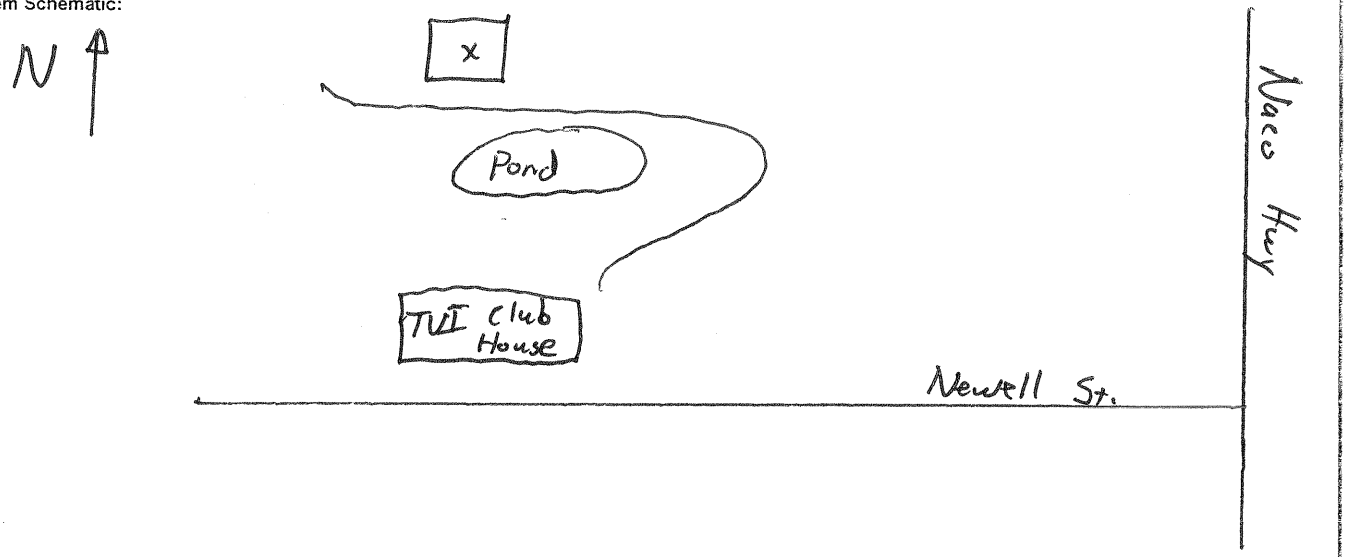
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
0947	550	Continuous	7.47	19.7	419	clear	None	Used to fill pond

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
~~LARSON~~ TVI 236	0950	Plastic	250ml	1	300.0	None	Filtered SO_4

Additional Comments: Sample was collected from end of discharge pipe that was actively pumping into pond

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	Freeport Copper Queen Branch
Task No.	2.2	Date:	3-20-08
Well ID:	TVI 236	Weather:	Clear
ADWR No.	55-802236	Collected By:	MA

WELL DATA

Well Depth (ft bls):	222	Time:	8:15
Casing Diameter (in):	12"	Point of Measurement:	140' (1999)
Static Water Level (ft bmp):	Last known 140' btoc (1999)	GPS:	UTM 3467991 / 600564
1 Casing Volume (gals):	481	Elevation:	4572
3 Casing Volumes (gals):	1445		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
0821	500	Continuous	7.49	19.1	485	Clear	None	
0824	"	"	7.48	19.2	489	"	"	
0827	"	"	7.48	20.0	488	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TVI 236	0830	Plastic	125 ml	1	EPA 300.0	HNO3	Filtered
TVI 236	0830	Plastic	250 ml	1	EPA 300.0	None	Filtered
TVI 236	0830	Plastic	500 ml	1	EPA 300.0	None	Unfiltered

Additional Comments: Golf Course superintendant stated that the pump has been on since 8am approx and that this well is pumped every evening of the year for 6-8 hrs each day

Resampled for full suite

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	TVI 875	Date:	2/21/08
ADWR No.	55-568875	Weather:	Cloudy/Cool
Location:	west side of golf cart perimeter road, north of Green Bush Draw	Collected By:	Arneson / Thompson

WELL DATA

Well Depth (ft bls):	330'	Static Water Level (ft bmp):	No Access for WL
Casing Diameter (in):	6"	Date/Time:	2/21/08
Well Use:	Irrigation	Point of Measurement:	NA
3 Casing Volumes:		GPS:	600733 3468417
		Elevation:	4752

FIELD SAMPLING DATA

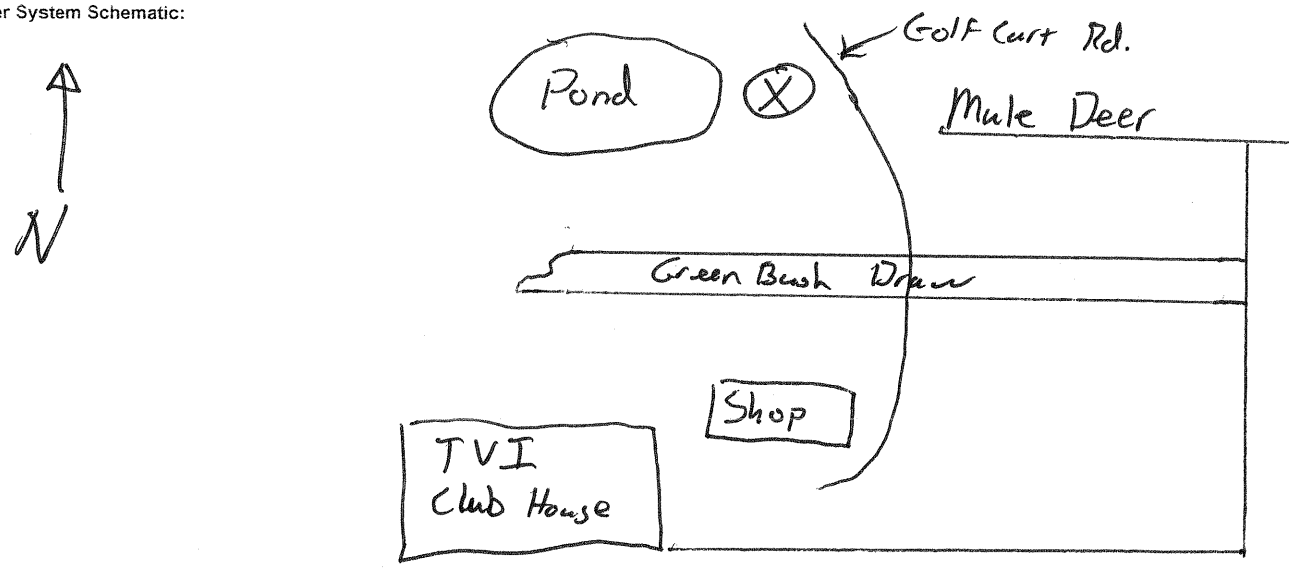
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
915	500	Start	7.14	19.8	708	clear	None	
919	"		7.26	20.1	745	"	"	
922	"		7.28	20.9	742	"	"	
925	"		7.30	21.0	735	"	"	
928	"		7.28	21.1	739	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
TVI 875	930	Plastic	125/250	2	300.0	HNO_3/None	Filtered
TVI 875	930	Plastic	250	1	300.0	None	Unfiltered

Additional Comments: Pump is actively on to Fill Golf course pond at 500 gpm
No purge required to sample

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	WALKER	Date:	2-13-08
ADWR No.	55-200393	Weather:	Sunny, warm
Location:	3350 S. Mesquite Ridge	Collected By:	KW + AP

WELL DATA

Well Depth (ft bls):	120	Static Water Level (ft bmp):	25.2
Casing Diameter (in):	O.D. 5½ to 100' no casing 100-120' 6" diam	Date/Time:	2-13-08 10:21 KW
Well Use:	domestic	Point of Measurement:	T.OC. (19" stick up)
3 Casing Volumes:	117 x 3 = 351 23 min	GPS:	UTM 346B591 1D,R 0607555
		Elevation:	4669

FIELD SAMPLING DATA

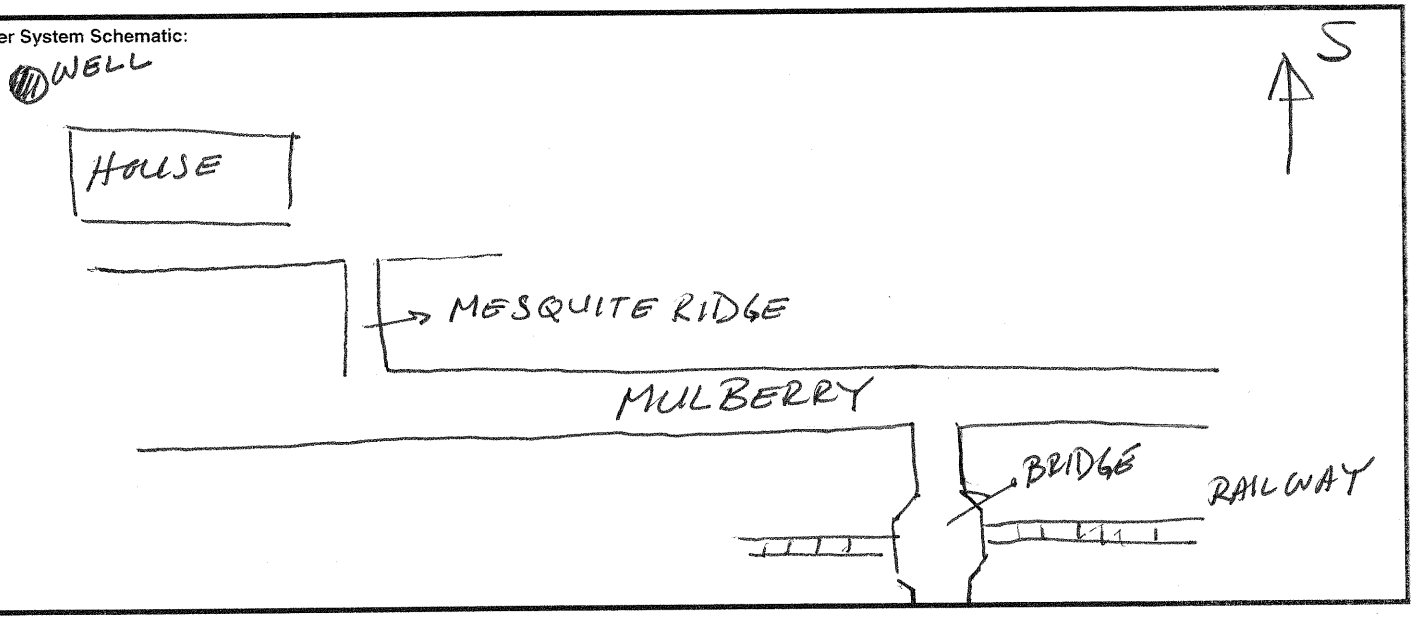
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
10:29	15		6.84	19.0	639	clear	none	
10:32	"		6.98	19.9	647	"	"	
10:35	"		7.02	19.6	647	"	"	
10:38	"		7.01	20.0	648	"	"	
10:42	"		7.04	20.2	647	"	"	
10:46	"		7.08	20.5	647	"	"	
10:50	"		7.05	20.2	650			
		375						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
WALKER	10:55	plastic	125/250/500	3	300.0	Y/N/N	

Additional Comments: No casing 100-120'; perf 80-100.

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001.0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	WEED	Date:	2-14-08
ADWR No.	544535	Weather:	windy, dusty
Location:	1463 Hull Ranch Rd. Naco, AZ	Collected By:	AP/KW

WELL DATA

Well Depth (ft bls):	300	Static Water Level (ft bmp):	No Access
Casing Diameter (in):	NA	Date/Time:	2-14-08 14:40
Well Use:	domestic	Point of Measurement:	NA
3 Casing Volumes:	NA	GPS:	3470976 12R 601415
		Elevation:	4682

FIELD SAMPLING DATA

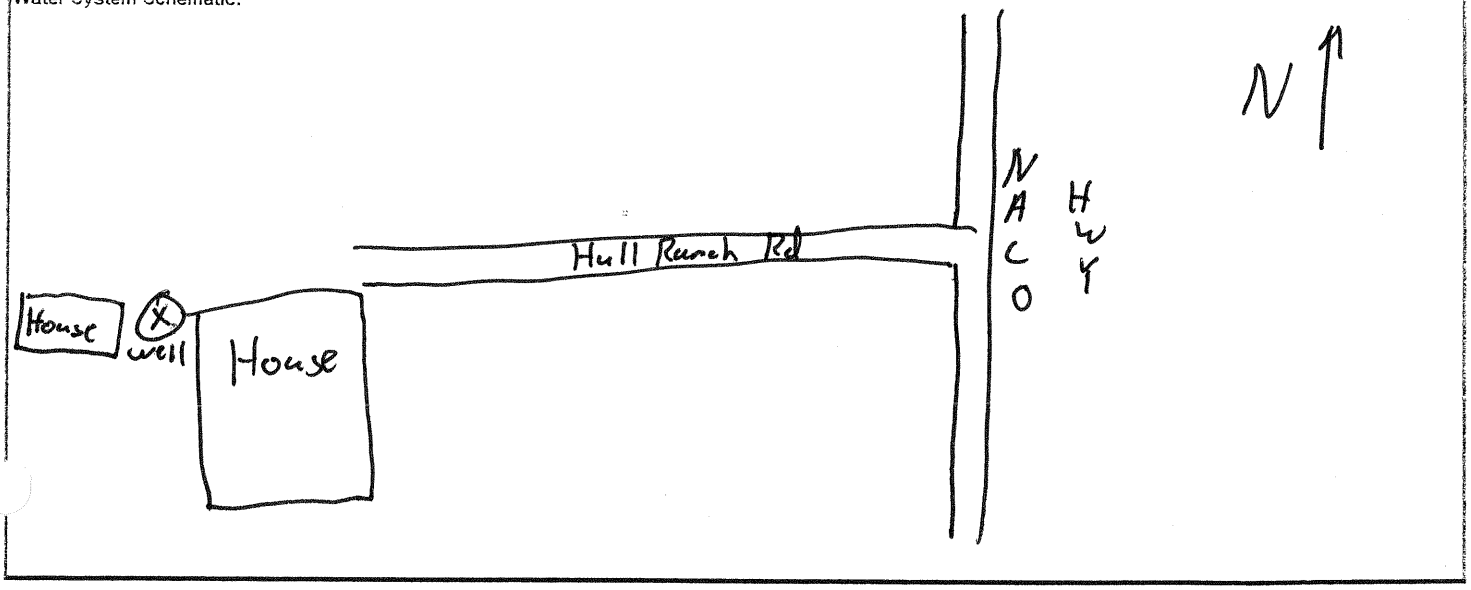
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
14:52	NA	NA	7.74	21.7	323	clear	No	few rusty sediment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
WEED	15:10	plastic	250	1	300.0	N	

Additional Comments: Owner reports well depth at 300' and WL @ about 250' bls
This well replaces 1915 well #606854. Other 1915 well #606855 w/ depth of 400' is not in use

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	WEISKOPF	Date:	15 Feb 08
ADWR No.	641802	Weather:	RAIN + Wind
Location:	3316 S. Naco Hwy	Collected By:	KW & AP

WELL DATA

Well Depth (ft bls):	200	Static Water Level (ft bmp):	143.31
Casing Diameter (in):	6"	Date/Time:	15Feb08 8:01
Well Use:	domestic	Point of Measurement:	TOC
3 Casing Volumes:	83 x 3 = 251	GPS:	KW 4602, UTM 12R 3468667 0601147
	25	Elevation:	4602

FIELD SAMPLING DATA

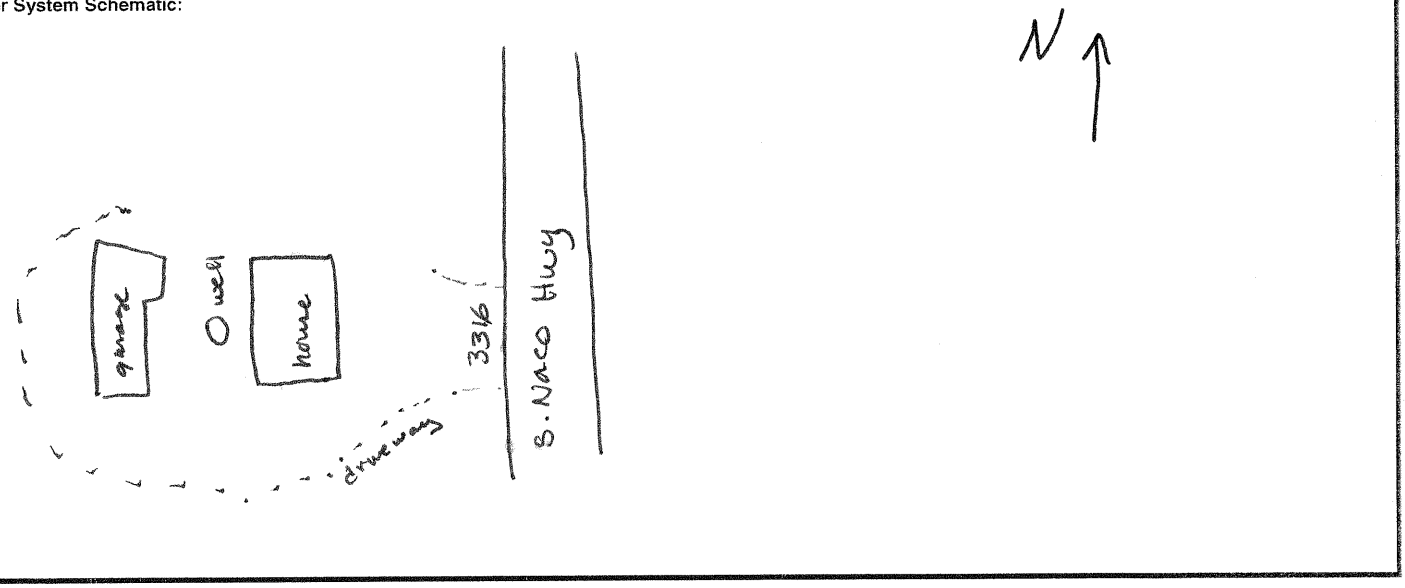
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
8:15	10		7.17	15.8	997	clear	none	few rusty flakes
8:17	"		7.28	16.4	1000	"	"	" " "
8:19	"		7.39	19.0	995	"	"	clear
8:22	"		7.52	19.6	910	"	"	"
8:24	"		7.51	19.8	965	"	"	"
8:28	"		7.51	20.2	1024	"	"	"
8:31	"		7.50	20.2	1048	"	"	"
8:34	"		7.50	20.0	1069	"	"	"
8:37	"		7.48	20.0	1072	"	"	"
		220 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
WEISKOPF	8:40	plastic	125/250/500	3	300.0	Y/N/N	—

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872001-0	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	ZANDER	Date:	02/04/2008
ADWR No.	205826	Weather:	RAINY-CLOUDY
Location:		Collected By:	ARMA

WELL DATA

Well Depth (ft bis):	280'	Static Water Level (ft bmp):	144.85
Casing Diameter (in):	6"	Date/Time:	02/04/2008
Well Use:	DOMESTIC	Point of Measurement:	TOC
3 Casing Volumes:	198X3 = 595 @ 15gpm	GPS: UTM:	3468003 12 R 0599677
40min purge		Elevation:	4566

FIELD SAMPLING DATA

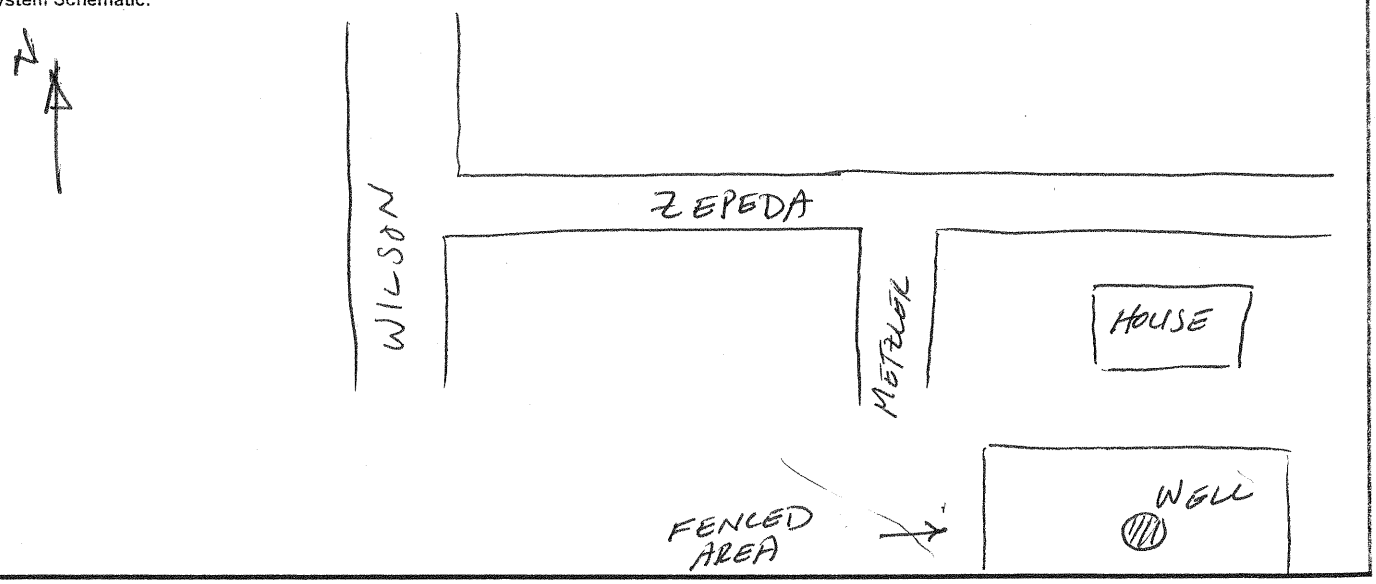
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
2:30	20	40	7.07	17.1	395	CLEAR	N	
0235	"	140	7.13	19	391	"	"	
0240	"	240	7.14	19.8	395	"	"	
0250	"	440	7.21	20.2	392	"	"	
0255	"	540	7.24	19.7	392	"	"	
	TOTAL DISCHARGE = 600 GALLONS							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
ZANDER	1500	PLASTIC	250	1	300.0	N	

Additional Comments:

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-5-08
Well ID:	ANDERSON	Weather:	Clear
ADWR 55 No.	613396	Collected By:	MA

WELL DATA

Well Depth (ft bls):	~~285~~ 236	Time:	10:12
Casing Diameter (in):	8"	Point of Measurement:	TOC
Static Water Level (ft bmp):	145.84	GPS:	See file
1 Casing Volume (gals):	235.5	Elevation:	See file
3 Casing Volumes (gals):	707 7/min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1025	10	20	6.74	23.2	1247	clear	None	open bib at 1023
1031	~~80~~ 10	80	6.98	21.6	1213	"	"	
1038	10	150	7.00	21.5	1232	"	"	
1048	"	250	6.86	21.6	1238	"	"	
1058	"	350	6.85	21.8	1231	"	"	
1108	"	450	6.92	21.7	1242	"	"	
1118	"	550	7.02	21.8	1229	"	"	
1128	"	650	7.03	21.8	1233	"	"	
1132	"	700	7.03	21.8	1231	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
ANDERSON	11:35	Plastic	250 ml	1	EPA 300.0	~~None~~ ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-12-08
Well ID:	BANKS 986	Weather:	Clear / windy
ADWR No.	647986	Collected By:	MA

WELL DATA

Well Depth (ft bls):	435.8	Time:	13:25
Casing Diameter (in):	6"	Point of Measurement:	NA
Static Water Level (ft bmp):	See Comment below	GPS:	See File
1 Casing Volume (gals):	321	Elevation:	See File
3 Casing Volumes (gals):	964		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1332	10	20	7.26	25.6	1070	Clear	None	Open bib at 13:30
1340	~~10~~ 10	100	7.41	22.3	1056	"	"	
1400	10	300	7.33	22.2	1017	"	"	
1415	"	450	7.34	22.1	1025	"	"	
1430	"	600	7.30	22.2	1028	"	"	
1445	"	750	7.39	22.2	1021	"	"	
1500	"	900	7.40	22.1	1021			
		Total	Discharge		1,000 gal			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
BANKS 986	15:10	Plastic	250ml	1	EPA 300.0	None	Filtered
DUP 051208	15:10	Plastic	250ml	1	300.0	None	Filtered

Additional Comments: I will use wl measure from 55-647987 of 216.30 for Purge Vol. Collect FB-051208 and EQB-051208. FB= unfiltered EQB = Filtered

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-12-08
Well ID:	BANKS 987	Weather:	Clear / windy
ADWR No.	647987	Collected By:	MA

WELL DATA

Well Depth (ft bls):	~~216.30 MA~~	Time:	13:15
Casing Diameter (in):		Point of Measurement:	TOC
Static Water Level (ft bmp):	216.30	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: Water level measurement only

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	~~2.2~~ BARTON 010	Date:	5-12-08
ADWR No.	55-085010	Weather:	clear / windy
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	300'	Static Water Level (ft bmp):	227.50 Irrad. ck
Casing Diameter (in):	6"	Date/Time:	5-12-08 17:05
Well Use:	Domestic / Irrigation	Point of Measurement:	
3 Casing Volumes:		GPS:	12R 606200 3469049
		Elevation:	4688

FIELD SAMPLING DATA

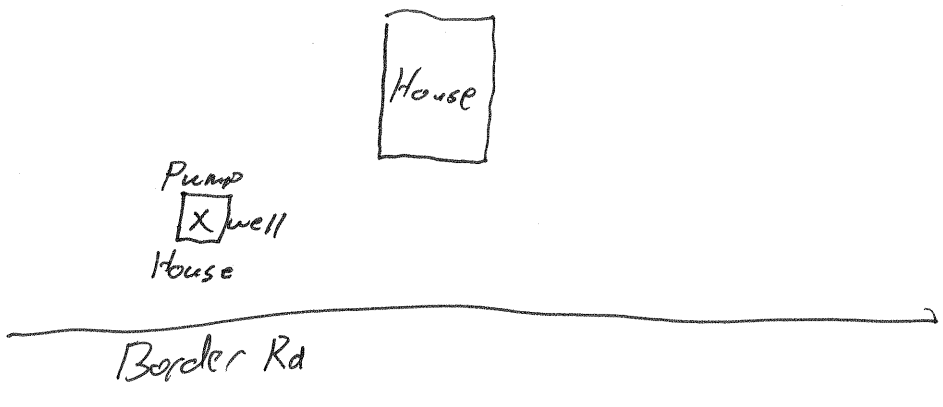
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is not operational
Sounder probe covered in rust scale - beep starting at 225' btoc

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	87200002.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	BARTON 919	Date:	5-12-08
ADWR No.	55-644919	Weather:	clear/windy
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	130	Static Water Level (ft bmp):	113.71'
Casing Diameter (in):	6"	Date/Time:	5-12-08 17:30
Well Use:	Domestic	Point of Measurement:	
3 Casing Volumes:	NA	GPS:	12R 606242 3469077
		Elevation:	4683

FIELD SAMPLING DATA

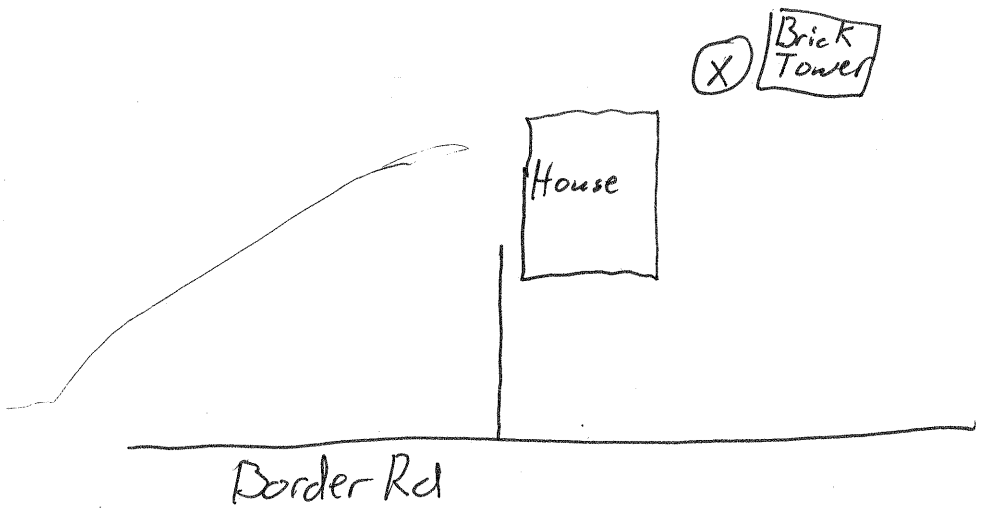
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is not operational
Tagged bottom at approx 128' btoc

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	97200000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-23-08
Well ID:	BF-01	Weather:	Cloudy / rain / windy
ADWR No.	539783	Collected By:	MA

WELL DATA

Well Depth (ft bls):	400'	Time:	7:45
Casing Diameter (in):	4"	Point of Measurement:	Top of Sounding tube
Static Water Level (ft bmp):	348.80	GPS:	See file
1 Casing Volume (gals):	33.4	Elevation:	See file
3 Casing Volumes (gals):	101		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
7:51	8	8	6.30	20.3	2773	Clear	Slight Sulfur	Pump on 7:50
7:53	8	24	6.29	20.5	2752	"	None	Black sediment
7:54	Pumped dry 32					"	"	"
8:10	6	44	6.41	18.3	2698	Clear	None	Few sediments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
BF-01	8:10	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	BIMA	Weather:	clear / windy
ADWR No.	577927	Collected By:	MA

WELL DATA

Well Depth (ft bls):	460	Time:	13:25
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	367.31	GPS:	See file
1 Casing Volume (gals):	60.5	Elevation:	See file
3 Casing Volumes (gals):	181.5 16min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
13:29	12	24	6.53	23.6	1496	clear	None	Opened bib 13:27
13:35	"	72	6.56	22.9	1498	"	"	
13:38	"	132	6.58	22.8	1486	"	"	
13:42	"	180	6.58	22.8	1488	"	"	
13:45	"	216	6.58	22.7	1489	"	"	
		Total Discharge 252 gal.						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
BIMA	13:48	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000 00	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-15-08
Well ID:	BLOMMER	Weather:	Clear / windy
ADWR 55 No.	633472	Collected By:	MA

WELL DATA

Well Depth (ft bls):	350	Time:	11:45
Casing Diameter (in):	6"	Point of Measurement:	NA
Static Water Level (ft bmp):	NA obstructed at 277	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:52	10	20	7.08	24.1	846	Clear	None	open b.b at 11:50
11:55	10	50	7.11	22.4	843	"	"	
12:00	10	100	7.24	21.9	846	"	"	
12:10	10	200	7.16	22.2	850	"	"	
12:15	10	250	7.16	22.2	846	"	"	
12:20	10	300	7.16	22.2	845	"	"	
		Total Purge is 350 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
BLOMMER	12:25	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	4-22-08
Well ID:	BURKE	Weather:	Clear
ADWR No.	55-212268	Collected By:	MA

WELL DATA

Well Depth (ft bls):	780'	Time:	10:20
Casing Diameter (in):	6"	Point of Measurement:	Top of Conductor casing
Static Water Level (ft bmp):	606.55	GPS:	347303I 12R 0602231
1 Casing Volume (gals):	254.8	Elevation:	4833'
3 Casing Volumes (gals):	765 gal 96min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
14:03	8	8	6.65	28.6	462	Clear	None	
14:05	8		6.97	27.3	445	"	"	
14:10	8		7.05	26.8	445	"	"	
14:15	"		7.07	27.0	444	"	"	
14:25	"		7.09	27.5	447	"	"	
14:35	"		7.05	27.3	444	"	"	
14:45	"		7.06	27.6	436	"	"	
14:55	"		7.04	27.5	430	"	"	
15:10	"		7.09	27.4	428	"	"	
15:25	"		7.09	27.3	422	"	"	
15:35	"		7.13	27.0	423	"	"	
	Total Discharge is			772 gal				

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
BURKE-F	15:40	Plastic	250ml	2	EPA 300.0	NO3	Filtered
BURKE	15:40	Plastic	500 ml	1	EPA 300.0	None	Unfiltered

Additional Comments:

At 8gpm a ~~54 min~~ 1.6hr purge is Req MA

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	CAMPBELL	Weather:	Clear
ADWR No.	215509	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200'	Time:	8:35
Casing Diameter (in):	5"	Point of Measurement:	TOC
Static Water Level (ft bmp):	181.80	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: No Sample, Well is not in operation

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	9720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-05-08
Well ID:	CHAMBERS	Weather:	Clear
ADWR 55 No.	629807	Collected By:	MA

WELL DATA

Well Depth (ft bls):	245	Time:	9:30
Casing Diameter (in):	6	Point of Measurement:	NA
Static Water Level (ft bmp):	NA See File	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
936	6	6	7.19	21.5	434	Clear	None	open bib at 935
940	"	30	7.19	22.1	421	"	"	
945	"	60	7.15	22.0	423	"	"	
950	"	90	7.16	22.1	420	"	"	
955	"	120	7.15	22.1	421	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
CHAMBERS	9:57	Plastic	250 ml	1	EPA 300.0	~~NO3~~ None	Filtered

Additional Comments: Pump was running upon arrival
9:52 Flower beds are ~~getting~~ Full

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-20-08
Well ID:	COB MW-1	Weather:	Clear
ADWR 55 No.	903992	Collected By:	MA

WELL DATA

Well Depth (ft bls):	420	Time:	8:12
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	233.12	GPS:	See File
1 Casing Volume (gals):	274.6	Elevation:	See File
3 Casing Volumes (gals):	824 55min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
8:14	15	15	6.86	21.9	2153	Clear	None	open bib at 8:13
8:18	"	75	6.87	21.8	2106	"	"	
8:23	"	150	6.84	21.7	2135	"	"	
8:28	"	225	6.86	21.7	2129	"	"	
8:33	"	300	6.86	21.9	2117	"	"	
8:38	"	375	6.86	21.7	2112	"	"	
8:43	"	450	6.78	21.9	2066	"	"	
8:53	"	600	6.83	21.9	2055	"	"	
9:03	"	750	6.87	22.0	2063	"	"	
9:08	"	825	6.88	22.0	2050	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COB MW-1	9:10	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-20-08
Well ID:	COB MW-2	Weather:	Clear / windy
ADWR 55 No.	903984	Collected By:	MA

WELL DATA

Well Depth (ft bls):	162'	Time:	10:27
Casing Diameter (in):	4"	Point of Measurement:	Top of Sounding tube
Static Water Level (ft bmp):	123.00	GPS:	See File
1 Casing Volume (gals):	25.5	Elevation:	See File
3 Casing Volumes (gals):	77 gal 10 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:34	8	8	7.02	24.4	495	clear	None	Pump on at 10:33
10:37	"	40	7.18	22.0	479	"	"	
10:40	"	56	7.28	21.3	489	"	"	
10:43	"	80	7.32	21.2	490	"	"	
		Total Discharge = 96 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COB MW-2	10:45	Plastic	250 ml	1	EPA 300.0	~~HNO3~~ None	Filtered

Additional Comments: The measuring point is 3.15' above the surveyor's mark on concrete pad around outside of conductor casing.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-20-08
Well ID:	COB MW-3	Weather:	Clear
ADWR 55 No.	906823	Collected By:	MA

WELL DATA

Well Depth (ft bls):	300'	Time:	11:18
Casing Diameter (in):	4"	Point of Measurement:	
Static Water Level (ft bmp):	125.00	GPS:	See file
1 Casing Volume (gals):	114	Elevation:	See file
3 Casing Volumes (gals):	343 17min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:25	20	100	7.38	21.7	479	Clear	None	Pump on 11:20
11:30	|	200	7.52	23.5	469	|	|	
11:35	|	300	7.51	22.3	470	|	|	
11:40	|	400	7.54	22.4	471	|	|	
11:45	|	500	7.56	22.3	473	|	|	
		Total Discharge 500 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COB MW-3	11:46	Plastic	250 ml	1	EPA 300.0	~~NO3~~ None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-20-08
Well ID:	COB WL	Weather:	Clear / Windy
ADWR 55 No.	593116	Collected By:	MA

WELL DATA

Well Depth (ft bls):	150'	Time:	9:27
Casing Diameter (in):	4"	Point of Measurement:	Top of Sounding tube
Static Water Level (ft bmp):	57.50	GPS:	see file
1 Casing Volume (gals):	60	Elevation:	see file
3 Casing Volumes (gals):	181 18 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:33	10	10	6.90	23.6	1049	Clear	None	Pump on 9:33
9:35	"	30	6.97	22.1	1043	"	"	
9:39	"	70	7.04	21.5	1049	"	"	
9:42	"	100	7.09	21.3	1047	"	"	
9:45	3	110	7.14	21.5	1048	"	"	9:47 Slow 6gpm
9:50	6	134	7.29	21.8	1053	"	"	
9:53	6	152	7.30	21.9	1055			steady at 6gpm
9:56	4	164	7.30	21.9	1053			
								flow is slow
	Total Discharge is 180 gal							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COB WL	10:00	Plastic	250 ml	1	EPA 300.0	NO3	Filtered

Additional Comments: The measuring point is 1.6' above the survey mark on the concrete pad around conductor casing. COB rep stated that this well tends to stop pumping sometimes.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-14-08
Well ID:	COOPER	Weather:	Clear
ADWR No.	623564	Collected By:	MA

WELL DATA

Well Depth (ft bls):	325	Time:	13:40
Casing Diameter (in):	6"	Point of Measurement:	NA
Static Water Level (ft bmp):	NA No Access	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
14:01	6	6	7.94	24.3	415	Clear	None	on at 14:00
14:05	"	30	8.01	22.2	421	"	"	
14:10	"	60	8.14	21.9	419	"	"	
14:20	"	120	8.08	22.3	421	"	"	
14:30	"	180	8.11	22.4	428			
14:40	"	240	8.02	22.3	420			
14:50	"	300	8.08	22.1	419			
		Total Discharge is 360 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COOPER	15.00	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-5-08
Well ID:	COOPER C	Weather:	clear
ADWR 55 No.	637069	Collected By:	MA

WELL DATA

Well Depth (ft bls):	220'	Time:	12:29
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	155.34	GPS:	See file
1 Casing Volume (gals):	95	Elevation:	See File
3 Casing Volumes (gals):	285 30min Purge		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1240	10	20	6.64	24.5	2132	clear	None	open bib at 1238
1245	10	70	6.76	22.4	2156	"	"	
1250	10	120	6.77	22.1	2130	"	"	
1300	10	220	6.75	22.1	2130	"	"	
1305	10	270	6.78	22.4	2139	"	"	
~~1310~~ MA								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
COOPER C	13:10	Plastic	250 ml	1	EPA 300.0	NO3	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-12-08
Well ID:	DODSON	Weather:	Clear / Windy
ADWR No.	644927	Collected By:	MA

WELL DATA

Well Depth (ft bls):	~~200'~~ 180'	Time:	15:20
Casing Diameter (in):	~~6"~~ 4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	81.38	GPS:	See File
1 Casing Volume (gals):	64.4	Elevation:	See File
3 Casing Volumes (gals):	193 18min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1526	11	11	7.00	22.5	1069	Clear	None	Open bib at 1525
1530	"	55	7.12	21.5	1061	"	"	
1533	"	88	7.14	21.1	1078	"	"	
1537	"	132	7.15	21.3	1086	"	"	
1540	"	165	7.19	21.1	1105	"	"	
1543	"	198	7.11	21.1	1118	"	"	
		Total Discharge 220						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
DODSON	15:45	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: well Depth and casing d.a. are written on control box
Mr. Dodson stated that the well has been used almost constantly in the past weekend.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	DOUGLASS 791	Weather:	Clear/windy
ADWR No.	592791	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200	Time:	14:35
Casing Diameter (in):	5"	Point of Measurement:	TOC
Static Water Level (ft bmp):	24.60	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: Water Level only

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	DOUGLASS 792	Weather:	Clear / Windy
ADWR No.	592.792	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200	Time:	14:40
Casing Diameter (in):	5"	Point of Measurement:	TOC
Static Water Level (ft bmp):	87.21	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: Water Level only

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-14-08
Well ID:	EAST	Weather:	Clear
ADWR 55 No.	599796	Collected By:	MA

WELL DATA

Well Depth (ft bls):	125'	Time:	10:10
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	52.45	GPS:	See file
1 Casing Volume (gals):	106.5	Elevation:	see file
3 Casing Volumes (gals):	320 27min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:14	13	24	7.18	22.2	555	Clear	None	Open bibat 10:12
10:17	12	60	7.29	21.3	544	"	"	
10:22	11	120	7.33	21.1	571	"	"	
10:27	"	180	7.31	21.0	586	"	"	
10:32	"	240	7.31	21.0	592	"	"	
10:37	"	300	7.31	20.9	595	"	"	
	Total Discharge ≈ 360 gal							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
EAST	10:42	Plastic	250 ml	1	EPA 300.0	~~None~~ ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-29-08
Well ID:	ENGLUND	Weather:	Clear
ADWR No.	565260	Collected By:	MA

WELL DATA

Well Depth (ft bls):	320	Time:	13:43
Casing Diameter (in):	4.5	Point of Measurement:	TOC
Static Water Level (ft bmp):	288.53	GPS:	See File
1 Casing Volume (gals):	26	Elevation:	See File
3 Casing Volumes (gals):	78 10min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1357	8	8	6.64	24.9	1433	Clear	None	Open bh 13:56
1400	8	40	6.90	22.4	1430	"	"	
1403	8	56	6.99	21.8	1440	"	"	
1406	8	80	7.01	22.0	1459	"	"	
		Total Discharge 96 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
ENGLUND	14:10	Plastic	250ml	1	EPA 300.0	None	Filtered
DUP052908	14:10	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: Collect FB 052908 and EQB 052908
FB is unFiltered EQB is Filtered

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	87200.00	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-12-08
Well ID:	EPPELE 641	Weather:	Clear / windy
ADWR No.	605641-L	Collected By:	MA

WELL DATA

Well Depth (ft bls):	265	Time:	9:40
Casing Diameter (in):	8"	Point of Measurement:	TOC
Static Water Level (ft bmp):	30.64	GPS:	See File
1 Casing Volume (gals):	612	Elevation:	See File
3 Casing Volumes (gals):	1836 183min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:00	10	50	7.18	23.3	690	clear	None	open b:b at 9:55
10:10	"	150	7.18	21.6	675	"	"	
10:30	"	350	7.21	21.4	678	"	"	
11:00	"	650	7.21	21.7	667	"	"	
11:20	well pumped Dry							
		Total Discharge 800 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
EPPELE 641	12:00	Plastic	250ml	1	EPA 300.0	~~None~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-5-08
Well ID:	FRANCO	Weather:	clear
ADWR 55 No.	500101	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200'	Time:	13:30
Casing Diameter (in):	6"	Point of Measurement:	NA
Static Water Level (ft bmp):	NA	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1330	10	10	6.79	25.0	1563	Clear	None	open bib at 1329
1335	~~60~~ 10	60	6.88	23.0	1550	"	"	
1340	~~NA~~ ~~10~~ 10	110	6.89	23.0	1555	"	"	
1345	~~160~~ 10	160	6.93	23.0	1558	"	"	
1350	10	210	6.93	23.1	1557	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
FRANCO	13:55	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments: Mrs. Franco is concerned about too much water on her yard.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-14-08
Well ID:	FULTZ	Weather:	clear / windy
ADWR 55 No.	212447	Collected By:	MA

WELL DATA

Well Depth (ft bls):	300	Time:	10:55
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	No Access	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:00	9	9	6.66	19.6	1859	clear	None	Open bbl at 10:59
11:05	"	54	6.82	20.8	1891	"	"	
11:10	"	99	6.85	21.2	1899	"	"	
11:15	"	144	6.86	21.3	1893	"	"	
11:20	"	189	6.87	21.4	1895	"	"	
11:25	"	234	6.90	21.3	1892	"	"	
11:30	"	279	6.89	21.3	1882			
11:40	"	369	6.88	21.3	1881			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
FULTZ	11:45	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments: 11:36 yard is Flooding

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	9720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-5-08
Well ID:	558557	Weather:	clear/windy
ADWR 55 No.	GARNER 557	Collected By:	MA

WELL DATA

Well Depth (ft bls):	300	Time:	15:30
Casing Diameter (in):	6'	Point of Measurement:	TOC
Static Water Level (ft bmp):	191.28	GPS:	See file
1 Casing Volume (gals):	160	Elevation:	See file
3 Casing Volumes (gals):	480		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	NO3	Filtered

Additional Comments: Could not obtain a sample as the pump stopped running after 2 min. of operation.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-5-08
Well ID:	GARNER 635	Weather:	Clear / Windy
ADWR 55 No.	587635	Collected By:	MA

WELL DATA

Well Depth (ft bls):	680'	Time:	14:25
Casing Diameter (in):	12"	Point of Measurement:	TOC
Static Water Level (ft bmp):	195.90	GPS:	See File
1 Casing Volume (gals):	2844	Elevation:	see file
3 Casing Volumes (gals):	8533 7.5 hr purge		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1431	19	19	7.30	26.5	470	clear	None	Open bib at 14:30
1441	20	220	7.38	24.8	467	"	"	
1451	20	420	7.35	24.8	467	"	"	
1501	20	620	7.41	24.6	466	"	"	
1515	20	900	7.26	24.9	468	"	"	
		Total Discharge = 1,000 gal.						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
GARNER 635	1520	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments: Dawn Walker stated that the well has been used alot over the past 2 days irrigating trees.
15:15 yard is flooding

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-27-08
Well ID:	G GOOSE 547	Weather:	Clear / windy
ADWR 55 No.	628547	Collected By:	MA

WELL DATA

Well Depth (ft bls):	800	Time:	9:47
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	220.91	GPS:	See file
1 Casing Volume (gals):	850	Elevation:	See file
3 Casing Volumes (gals):	2551		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:38	25-30	200	6.87	24.0	829	Rusty	Rotten	Pump on at 10:30
10:43	25	325	6.90	22.9	822	very slightly tan	None	
10:50	"	500	7.10	22.8	840	Clear	"	
11:00	"	750	7.06	22.7	846	"	"	
11:15	"	1125	7.11	22.8	857	"	"	
11:30	"	1500	7.06	22.7	855	"	"	
11:45	"	1875	7.01	22.7	854	"	"	
12:00	"	2250	7.08	22.8	854	"	"	
12:15	"	2625	7.08	22.7	856	"	"	
		Total Discharge ~ 3000 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
G GOOSE 547	12:30	Plastic	~~125~~ ml	1	EPA 300.0	NO3	Filtered
G GOOSE 547	12:30	Plastic	250/500	2	EPA 300.0	None	Filtered / unfiltered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-22-08
Well ID:	GL-03	Weather:	Cloudy / windy
ADWR 55 No.	539782	Collected By:	MA

WELL DATA

Well Depth (ft bls):	825	Time:	14:30
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	660.15	GPS:	See File
1 Casing Volume (gals):	108	Elevation:	See File
3 Casing Volumes (gals):	323		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
14:36	8	8	7.33	20.4	469	clear	None	Pump on 14:35
14:40	"	40	7.07	22.7	658	"	"	
14:45	"	80	7.31	25.1	546	"	"	
14:50	"	120	7.16	25.3	585	"	"	
14:55		160	7.14	25.8	593	"	"	
15:00	Flow is down to 3gpm							
15:01	3	187	7.12	25.9	589	Black	None	
15:05	2	195	7.11	25.8	593	Black	"	
15:10	3-5	210	7.11	26.1	594	Dark Grey	"	
15:15	3	225	6.97	25.9	668	clear	"	
15:33	Restart		7.06	25.3	647	Clear	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
GL-03	15:35	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-5-08
Well ID:	GOAR Ranch	Weather:	clear / windy
ADWR 55 No.	610695	Collected By:	MA

WELL DATA

Well Depth (ft bls):	250	Time:	16:10
Casing Diameter (in):	7"	Point of Measurement:	TOC
Static Water Level (ft bmp):	188.11	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	NO3	Filtered

Additional Comments: Water level measurement only.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	HOBAN	Weather:	Clear / windy
ADWR 55 No.	805290	Collected By:	MA

WELL DATA

Well Depth (ft bls):	316	Time:	10:20
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	163.28	GPS:	See file
1 Casing Volume (gals):	224	Elevation:	See file
3 Casing Volumes (gals):	673 45min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:26	15	15	6.75	22.6	1497	Clear	None	open bib at 10:25
10:30	"	75	6.86	22.1	1478	"	"	
10:35	"	150	6.91	22.1	1416	"	"	
10:40	"	225	6.89	22.1	1439	"	"	
10:45	"	300	6.90	22.3	1545	"	"	
10:55	"	450	6.88	22.2	1515	"	"	
11:00	"	525	6.89	22.2	1517	"	"	
11:05	"	600	6.87	22.4	1509	"	"	
11:10	"	675	6.88	22.3	1532	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
HOBAN	11:15	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000C	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-8-08
Well ID:	HOWARD	Weather:	Clear / windy
ADWR 55 No.	Unknown	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200	Time:	9:25
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	150.70	GPS:	See File
1 Casing Volume (gals):	73.4	Elevation:	See File
3 Casing Volumes (gals):	220		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:48	8	8	6.75	22.9	1472	Clear	None	open bib at 9:47
9:52	11	40	6.86	21.5	1349	"	"	
9:57	"	80	6.91	21.5	1446	"	"	
10:02	"	120	6.91	21.2	1472	"	"	
10:07	"	160	6.93	21.1	1490	"	"	
10:12	"	200	6.95	21.0	1494	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
HOWARD	10:15	Plastic	250 ml	1	EPA 300.0	None ~~HNO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000.0	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-6-08
Well ID:	KEEFER	Weather:	Clear / windy
ADWR 55 No.	209744	Collected By:	MH

WELL DATA

Well Depth (ft bls):	250	Time:	8:10
Casing Diameter (in):	NA (6") see Note	Point of Measurement:	TOC
Static Water Level (ft bmp):	135.28	GPS:	See File
1 Casing Volume (gals):	168	Elevation:	See file
3 Casing Volumes (gals):	505 42 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
8:25	12	12	7.00	19.5	480	~~Appr~~ Clear	None	open bib at 8:24
8:30	"	72	7.13	20.1	477	"	"	
8:35	"	132	7.12	19.9	473	"	"	
8:40	"	192	7.17	20.0	499	"	"	
8:45	"	252	7.15	20.3	486	"	"	
8:50	"	312	7.16	20.1	515	"	"	
9:00	"	432	7.15	20.4	508	"	"	
9:05	"	492	7.19	20.3	512	"	"	
		Total Discharge = 552 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
KEEFER	9:10	Plastic	250 ml	1	EPA 300.0	~~NO3~~ None	Filtered

Additional Comments: Mr. Keefer said casing dia. is either 6" or 4" - I will use 6" for purge vol. calculation. The conductor casing is 8"

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000 / 2.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	KEMP	Date:	5-20-08
ADWR No.	55- 645912	Weather:	Clear
Location:	1552 E. Border Rd Bisbee, AZ 85603	Collected By:	MA

WELL DATA

Well Depth (ft bls):	150'	Static Water Level (ft bmp):	NA
Casing Diameter (in):	6"	Date/Time:	5-22-08 16:40
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	NA	GPS:	12R 609523 3468858
		Elevation:	4622

FIELD SAMPLING DATA

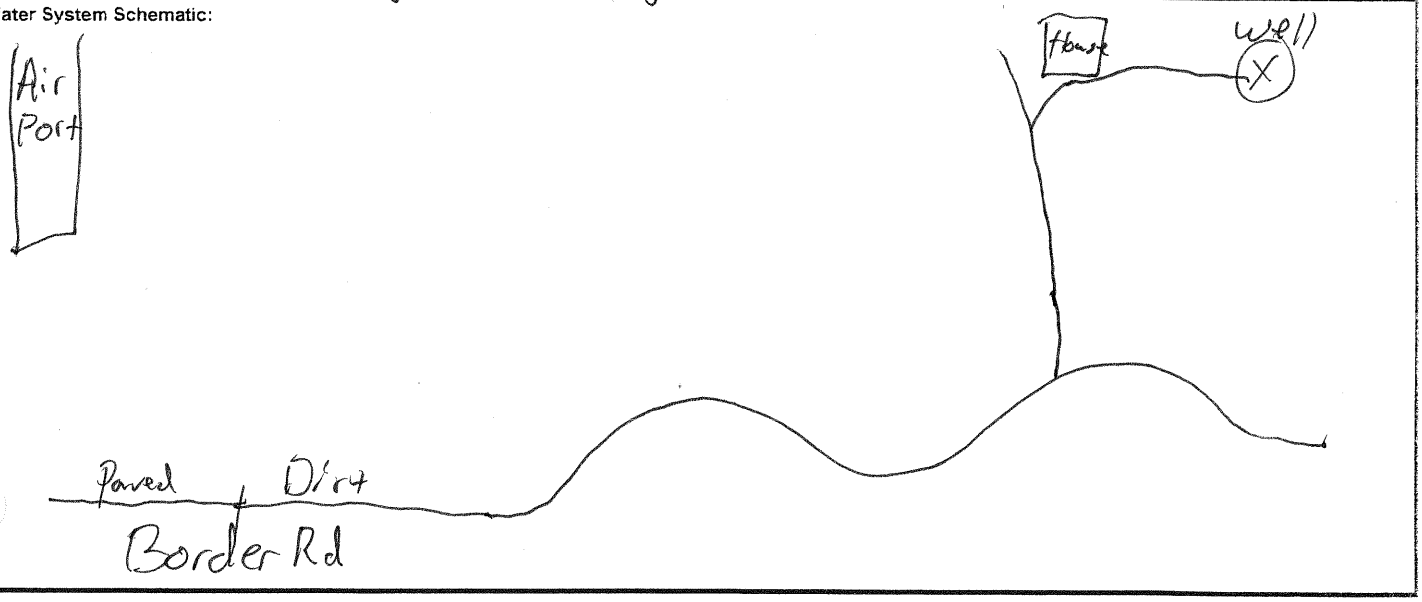
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments
1650	10	20	7.27	21.7	435	Clear	None	Open hose bib at 1648
1655	"	70	7.23	21.3	430	"	"	
1700	"	120	7.26	20.8	430			
1705	2		7.24	21.2	435			Flow Rate way down

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
KEMP	17:10	Plastic	250	1	300.0	None	SO_4^- only

Additional Comments: I deployed both sounders to 180' and neither indicated water. Owners stated wl is around 80'. I will base purge volume on that.
1 casing = 103 3 casings = 309

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-6-08
Well ID:	MCCONNELL 265	Weather:	clear / windy
ADWR 55 No.	539265	Collected By:	MA

WELL DATA

Well Depth (ft bls):	216	Time:	11:32
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	156.40	GPS:	See file
1 Casing Volume (gals):	87.5	Elevation:	See file
3 Casing Volumes (gals):	263 33min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:43	8	8	6.61	23.8	1672	clear	None	open bib at 11:42
11:48	"	48	6.71	21.8	1674	"	"	
11:53	"	88	6.76	21.6	1686	"	"	
11:58	"	128	6.77	21.3	1696	"	"	
12:03	"	168	6.77	21.4	1677	"	"	
12:08	"	208	6.75	21.5	1658	"	"	
12:13	"	248	6.77	21.5	1665	"	"	
12:18	"	288	6.77	21.6	1668			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
MCCONNELL265	12:20	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-15-08
Well ID:	METZLER	Weather:	Clear
ADWR 55 No.	35-71891	Collected By:	MA

WELL DATA

Well Depth (ft bls):	351	Time:	10:15
Casing Diameter (in):	6	Point of Measurement:	TOC
Static Water Level (ft bmp):	286.53	GPS:	See File
1 Casing Volume (gals):	94.7	Elevation:	see File
3 Casing Volumes (gals):	284		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:22	20	20	7.00	23.7	1032	Clear	None	Open bib at 10:20
10:26	"	60	7.10	22.6	1035	"	"	
10:31	"	110	7.16	22.4	1043	"	"	
10:36	"	160	7.15	22.7	1045	"	"	
10:41	"	210	7.14	22.7	1047	"	"	
10:46	"	260	7.12	22.8	1051	"	"	
		Total Discharge 260 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
METZLER	10:50	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments: This well has been running as the basins around trees are wet

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-8-08
Well ID:	MOORE	Weather:	Clear
ADWR 55 No.	538847	Collected By:	MA

WELL DATA

Well Depth (ft bls):	220	Time:	7:50
Casing Diameter (in):	6"	Point of Measurement:	NA
Static Water Level (ft bmp):	No Access	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
7:56	9	9	7.00	19.8	429	Clear	None	open b.h. at 7:55
8:00	"	45	7.10	20.9	428	"	"	
8:10	"	135	7.12	22.0	427	"	"	
8:20	"	225	7.03	22.2	428	"	"	
8:30	"	315	7.04	22.3	430	"	"	
8:40	"	405	7.09	22.4	432	"	"	
		Total Discharge 450 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
MOORE	8:45	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	NOTEMAIN	Weather:	Clear/Windy
ADWR No.	212483	Collected By:	MA

WELL DATA

Well Depth (ft bls):	470	Time:	12:05
Casing Diameter (in):	5"	Point of Measurement:	TOC
Static Water Level (ft bmp):	339.77	GPS:	See File
1 Casing Volume (gals):	132.8	Elevation:	See File
3 Casing Volumes (gals):	399 34min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
12:12	12	24	6.65	22.7	1451	Clear	None	open bl at 12:10
12:15	"	60	6.68	23.6	1453	"	"	
12:20	"	120	6.68	23.7	1459	very lite Brown tan	None	
12:25	"	180	6.70	23.6	1458	faint red/tan	"	
12:30	"	240	6.70	23.7	1441	" "	None	
12:40	"	360	6.67	23.	1445	" "	"	
	Total Purge = 420 gal							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
NOTEMAIN	12:45	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	OSBORN	Weather:	Clear / Windy
ADWR No.	643436	Collected By:	MA

WELL DATA

Well Depth (ft bls):	258	Time:	15:35
Casing Diameter (in):	~~MA~~ 6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	68.65	GPS:	See File
1 Casing Volume (gals):	278	Elevation:	See File
3 Casing Volumes (gals):	835 56min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
15:42	15	30	7.11	22.9	578	Clear	None	open bib at 15:40
15:46	"	90	7.28	22.4	576	"	"	
15:51	"	165	7.28	22.4	576	"	"	
16:01	"	315	7.24	22.4	575	"	"	
16:11	"	465	7.21	22.3	574	"	"	
16:24	"	660	7.19	22.3	575	"	"	
16:35	"	825	7.22	22.2	576	"	"	
		Total Discharge is 900 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
OSBORN	16:40	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	PALMER 819	Weather:	Clear / windy
ADWR No.	578819	Collected By:	MA

WELL DATA

Well Depth (ft bls):	220	Time:	15:10
Casing Diameter (in):	6"	Point of Measurement:	NA
Static Water Level (ft bmp):	No Access	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See file
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
15:12	1	1	7.92	22.9	508	Clear	None	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
PALMER 819	15:15	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: Sample was taken From Storage tank per owners request

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-15-08
Well ID:	PARRA	Weather:	Cloudy
ADWR 55 No.	576415	Collected By:	MA

WELL DATA

Well Depth (ft bls):	355	Time:	13:30
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	279.78'	GPS:	See file
1 Casing Volume (gals):	80.7	Elevation:	See file
3 Casing Volumes (gals):	242		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
1333	10	10	6.98	23.3	1201	Clear	None	open bib at 1332
1337	10	50	7.04	22.3	1199	"	"	
1342	10	100	7.09	22.1	1192	"	"	
1347	10	150	7.10	21.9	1196	"	"	
1352	10	200	7.12	21.8	1196	"	"	
1357	10	250	7.10	21.8	1200	"	"	
		Total Discharge 280 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
PARRA	14:00	Plastic	250 ml	1	EPA 300.0	~~NO3~~ None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	PIONKE	Weather:	Clear / windy
ADWR 55 No.	613395	Collected By:	MA

WELL DATA

Well Depth (ft bls):	330	Time:	1300
Casing Diameter (in):	8"	Point of Measurement:	NA
Static Water Level (ft bmp):	NA	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
13:14	18	18	6.94	21.9	1126	Clear	None	opened at 13:13
13:20	"	126	7.04	21.7	1143	"	"	
13:30	"	306	7.05	21.3	1092	"	"	
13:40	"	486	6.95	21.7	1199	"	"	
13:50	"	666	7.03	21.5	1094	"	"	
14:00	"	846	7.13	21.4	1092	"	"	
14:10	"	1026	7.14	21.6	1110	"	"	
14:20	"	1206	7.08	21.4	1100	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
PIONKE	14:25	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-19-08
Well ID:	POOL	Weather:	Clear
ADWR 55 No.	509518	Collected By:	MA

WELL DATA

Well Depth (ft bls):	313	Time:	9:40
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	204.72	GPS:	See file
1 Casing Volume (gals):	159	Elevation:	See file
3 Casing Volumes (gals):	477 40 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:54	12	12	7.04	22.7	580	Tan	None	open b'hole ax 953
9:57	12	48	7.18	22.1	575	Clear	"	
10:03	12	120	7.34	21.7	579	"	"	
10:08	12	180	7.38	21.9	579	"	"	
10:13	12	240	7.38	22.4	580	"	"	
10:18	12	300	7.40	22.2	579	"	"	
10:23	12	360	7.40	22.4	584	"	"	
10:28	12	420	7.43	22.3	584	"	"	
10:33	12	480	7.40	22.2	585			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
POOL	10:35	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-6-08
Well ID:	RAMIREZ	Weather:	Clear / windy
ADWR 55 No.	216425	Collected By:	MA

WELL DATA

Well Depth (ft bls):	300	Time:	13:02
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	NA	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
13:11	10	10	7.12	24.7	422	Clear	None	open bib at 13:10
13:15	"	50	7.11	23.4	403	"	"	
13:20	"	100	7.13	23.4	407	"	"	
13:25	"	150	7.18	23.0	407	"	"	
13:30	"	200	7.18	22.7	405	"	"	
13:35	"	250	7.18	22.7	405			
13:40	"	300	7.19	22.7	405			

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
RAMIREZ	13:45	Plastic	250 ml	1	EPA 300.0	None ~~HNO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-13-08
Well ID:	RAY	Weather:	Clear / Windy
ADWR No.	803772	Collected By:	MA

WELL DATA

Well Depth (ft bls):	100	Time:	9:15
Casing Diameter (in):	8"	Point of Measurement:	TOC
Static Water Level (ft bmp):	43.82	GPS:	See file
1 Casing Volume (gals):	146.7	Elevation:	See File
3 Casing Volumes (gals):	440 55min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:25	8	8	6.96	20.9	1584	Clear	None	Opened bib at 9:24
9:30	"	48	6.99	20.9	1491	"	"	
9:35	"	88	7.02	20.7	1497	"	"	
9:40	"	128	7.06	20.6	1396	"	"	
9:45	"	168	7.06	20.7	1509	"	"	
9:50	"	208	7.04	20.9	1545	"	"	
10:00	"	288	7.03	20.7	1548	"	"	
10:10	"	368	7.04	20.8	1526			
10:20	"	448	7.05	20.9	1515			
		Total Discharge is 448 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
RAY	10:25	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-8-08
Well ID:	ROGERS 803	Weather:	Clear
ADWR 55 No.	641803	Collected By:	MA

WELL DATA

Well Depth (ft bls):	140	Time:	7:00
Casing Diameter (in):	6	Point of Measurement:	TOC
Static Water Level (ft bmp):	obstructed	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
7:21	8	8	7.16	22.7	617	clear	None	open bib at 7:20
7:23	"	24	7.13	21.3	625	"	"	
7:28	"	64	7.13	21.1	620	"	"	
7:33	"	104	7.14	21.2	622	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
ROGERS 803	7:35	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	ROGERS E	Weather:	clear
ADWR 55 No.	216018	Collected By:	MA

WELL DATA

Well Depth (ft bls):	285	Time:	16:05
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	NA	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See file
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
16:11	12	12	7.12	23.9	428	Clear	None	open bibcock 16:10
16:15	"	60	7.15	22.6	412	"	"	
16:20	"	120	7.19	22.4	417	"	"	
16:25	"	180	7.19	22.3	413	"	"	
16:30	"	240	7.20	22.2	415	"	"	
16:35	"	300	7.20	22.2	417	"	"	
16:40	"	360	7.18	22.2	416	"	"	
16:45	"	420	7.18	22.2	415	"	"	
		Total Discharge is 480 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
ROGERS E	16:50	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments: Yard is nearly flooded at 16:43

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	9720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-15-08
Well ID:	RUIZ	Weather:	clear / windy
ADWR 55 No.	531770	Collected By:	MA

WELL DATA

Well Depth (ft bls):	312	Time:	11:18
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	293.57	GPS:	See File
1 Casing Volume (gals):	27.2	Elevation:	See File
3 Casing Volumes (gals):	82		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:27	NA	NA	7.23	25.9	965	Clear	None	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
RUIZ	11:30	Plastic	250 ml	1	EPA 300.0	None ~~HNO3~~	Filtered

Additional Comments: This pump would not run - possibly dry - Sample water was drawn from storage tank

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-19-08
Well ID:	SCHWARTZ	Weather:	clear
ADWR 55 No.	210865	Collected By:	MA

WELL DATA

Well Depth (ft bls):	305	Time:	11:50
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	123.49	GPS:	See file
1 Casing Volume (gals):	266	Elevation:	See file
3 Casing Volumes (gals):	800 53 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:56	15	15	7.08	25.6	631	clear	None	open bib at 11:53
12:00	"	75	7.29	22.9	620	"	"	
12:10	"	225	7.24	22.4	637	"	"	
12:20	"	375	7.39	22.3	632	"	"	
12:25	"	450	7.41	22.5	630	"	"	
12:30	"	525	7.40	22.5	637	"	"	
12:35	"	600	7.40	22.4	635	"	"	
12:45	"	750	7.38	22.4	629	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
SCHWARTZ	12:50	Plastic	250 ml	1	EPA 300.0	~~NOS~~ None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FMICQB
Phase No.	2.2	Date:	4-23-08
Well ID:	SRC	Weather:	Clear/windy
ADWR No.	55-211345	Collected By:	MA

WELL DATA

Well Depth (ft bls):	965	Time:	9:35
Casing Diameter (in):	6"	Point of Measurement:	Top of well Casing
Static Water Level (ft bmp):	541.10 btoc	GPS:	3472516 12R 0599718
1 Casing Volume (gals):	623	Elevation:	4745
3 Casing Volumes (gals):	1869 187min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment Turb NTU
1226	10		7.33	25.0	379	slight Red	None	
1230	10		7.60	24.6	391	Pink	"	140
1235	10		7.65	24.7	381	Pink	"	
1240	"		7.65	25.1	381	light Pink	"	
1250	"		7.58	25.0	380	light Pink	"	237
1300	Pump off at 1312 - Reset pump to 700'					" "	"	
1335	10		7.48	25.6	386	" "	"	226
1345	10		7.50	25.7	384	" "	"	190
1400	10		7.60	26.0	387	light Pink	"	184
1415	8		7.56	25.9	388	" "	"	197
1430	8		7.56	25.9	386	" "	"	178
1445	7		7.55	26.0	387	" "	"	243

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250ml	2	EPA 300.0	NO3	Filtered
		Plastic	500 ml	1	EPA 300.0	None	Unfiltered

Additional Comments: Pump on at 1220

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FMI - CQB
Phase No.	2.2	Date:	4-23-08
Well ID:	SRC	Weather:	
ADWR No.	21345	Collected By:	

WELL DATA

Well Depth (ft bls):		Time:	
Casing Diameter (in):		Point of Measurement:	
Static Water Level (ft bmp):		GPS:	
1 Casing Volume (gals):		Elevation:	
3 Casing Volumes (gals):			

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment Turb NTU
1520	8		7.54	25.7	387	light Pink	None	192
1530			7.55	25.8	385	"	"	165
1605	7		7.56	26.3	386	Very light Pink	"	111
1630	7		7.61	25.9	382	" " "	"	83.7
1645	7		7.45	25.6	381	" " "	"	57.3
1700	7		7.45	25.6	380	" " "	"	47.6
1715	7		7.57	25.8	380	" " "	"	41.1
	Total Purge is		1912	gal.				

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
SRC-F	17:30	Plastic	250ml	2	EPA 300.0	NO3	Filtered
SRC	17:30	Plastic	500 ml	1	EPA 300.0	None	Unfiltered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	87200000 2.2	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	STARK-CAMPBELL	Date:	5-13-08
ADWR No.	55-643481	Weather:	Clear
Location:		Collected By:	MA

WELL DATA

Well Depth (ft bls):	262	Static Water Level (ft bmp):	Dry
Casing Diameter (in):	~~6~~ 4"	Date/Time:	5-13-08 8:25
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	NA	GPS:	12R 606425 3469323
		Elevation:	4734

FIELD SAMPLING DATA

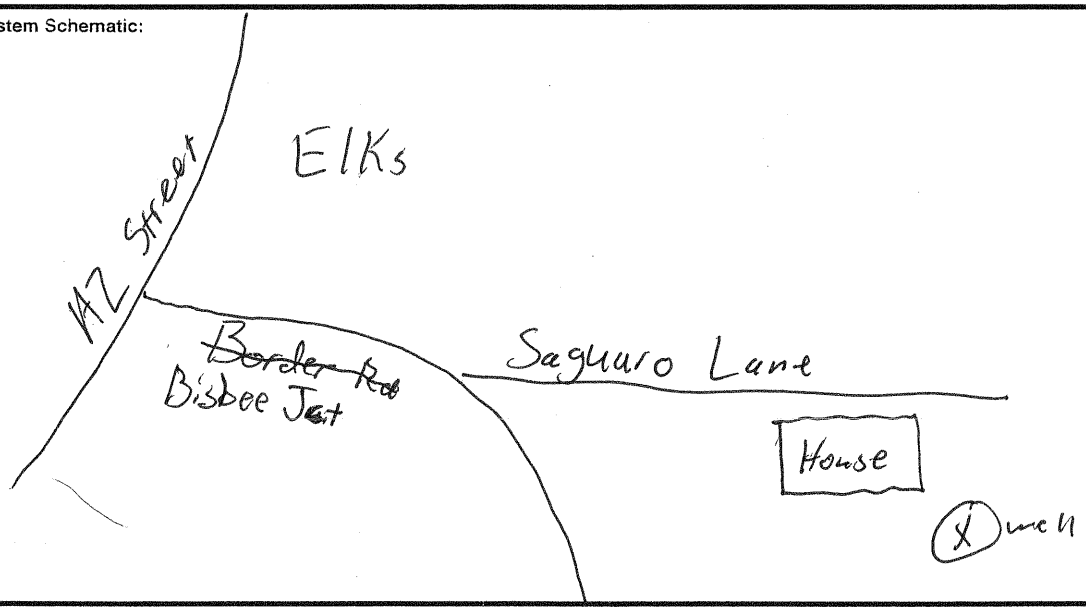
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: Tagged bottom of well at 262'
This well is not in use. It has no equipment

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	PHELPS DODGE COPPER QUEEN BRANCH
Well ID:	STEPHENS	Date:	5-13-08
ADWR No.	808560	Weather:	clear / windy
Location:	3675 S. CACTUS LANE Bisbee, AZ 85603	Collected By:	MA

WELL DATA

Well Depth (ft bls):		Static Water Level (ft bmp):	44.94
Casing Diameter (in):	4"	Date/Time:	5-13-08 / 10:45
Well Use:	Domestic	Point of Measurement:	TOC
3 Casing Volumes:	NA	GPS:	12R 606982 3469074
		Elevation:	4705

FIELD SAMPLING DATA

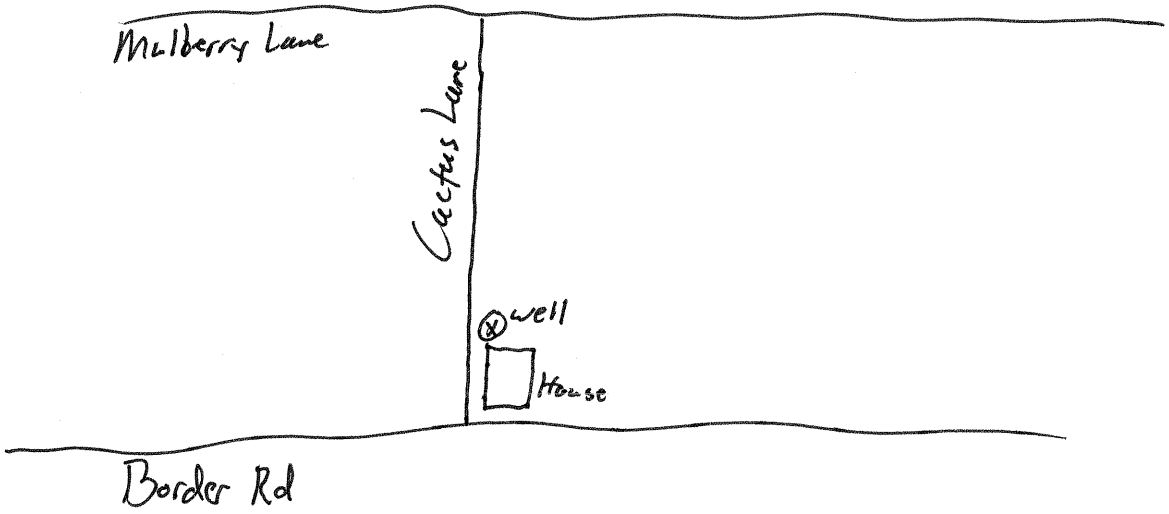
Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH	Temp (°C)	Specific Conductance (µScm)	Color	Odor	Comments

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes

Additional Comments: This well is not operational
Tagged the bottom at approx 77' btoc

Water System Schematic:



HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-15-08
Well ID:	SUNBELT	Weather:	clear
ADWR 55 No.	201531	Collected By:	MA

WELL DATA

Well Depth (ft bls):	380	Time:	8:10
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	358.97	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See file
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	NO3	Filtered

Additional Comments: This well has been disassembled.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-14-08
Well ID:	No Record → SWAN	Weather:	Clear
ADWR 55 No.		Collected By:	MA

WELL DATA

Well Depth (ft bls):	98	Time:	9:00
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	30.69	GPS:	See File
1 Casing Volume (gals):	44	Elevation:	See File
3 Casing Volumes (gals):	132		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:09	8	8	7.18	21.7	500	Clear	None	open bib 9:08
9:13	"	40	7.20	21.2	484	"	"	
9:16	"	64	7.22	21.2	487	"	"	
9:20	"	96	7.23	21.2	475	"	"	
9:24	"	128	7.24	21.2	479	"	"	
		Total Discharge is 160 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
SWAN	9:28	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-23-08
Well ID:	TM-02A	Weather:	Cloudy / windy / rain
ADWR No.	522574	Collected By:	MA

WELL DATA

Well Depth (ft bls):	925'	Time:	8:37
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	346.16	GPS:	See File
1 Casing Volume (gals):	378	Elevation:	See File
3 Casing Volumes (gals):	1134 94min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:12	12	12	8.58	21.0	325	light tan	None	Pump on at 9:11
9:14	"	36	8.53	20.3	304	" "	"	
9:17	"	72	8.01	21.7	323	" "	"	
9:22	10	132	7.87	22.7	325	almost clear		
9:27	10	182	7.75	22.9	321	" "	None	
9:29 *								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-02A	9:40	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: * Breaker tripped on gen. while flow steady at 10gpm. When I reengaged breaker pump ran for 1min then tripped again.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-20-08
Well ID:	TM ~~MW~~-03	Weather:	Clear / windy
ADWR 55 No.	522575	Collected By:	MA

WELL DATA

Well Depth (ft bls):	925	Time:	1310
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	127.40	GPS:	See File
1 Casing Volume (gals):	520.6	Elevation:	See File
3 Casing Volumes (gals):	1562		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
13:12	12	12	7.06	26.2	763	Clear	None	Pumpon 13:11
13:16	"	60	7.34	23.0	768	"	"	
13:21	"	120	7.42	22.3	776	"	"	
13:26	"	180	7.51	22.2	778			
~~13:31~~								
1335	Pumped Dry after 288 gallons							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-~~MW~~03	1410	Plastic	250 ml	1	EPA 300.0	~~HNO3~~ None	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	9720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-20-08
Well ID:	TM-06 MILLER	Weather:	clear
ADWR 55 No.	522695	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200	Time:	16:00
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	158.76	GPS:	See file
1 Casing Volume (gals):	26.8	Elevation:	See file
3 Casing Volumes (gals):	81 7min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
16:04	12	12	7.69	21.9	513	slight dark tint	Rotten egg	16:03 pump on
16:08	12	60	7.53	21.3	506	clear	None	
16:10	12	84	7.50	20.6	508	"	"	
16:13	12	120	7.50	20.7	506	"	"	
		Total discharge = 144 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-06 MILLER	16:15	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	6720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-22-08
Well ID:	TM-07	Weather:	clear / windy
ADWR 55 No.	522576	Collected By:	MA

WELL DATA

Well Depth (ft bls):	350'	Time:	8:32
Casing Diameter (in):	4"	Point of Measurement:	obstructed at 70'
Static Water Level (ft bmp):	Obstruction	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See file
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
8:46	10	10	6.96	20.1	385	Slight tan	None	Pump on at 8:45
8:48	Pumped Dry							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-07	9:18	Plastic	250 ml	1	EPA 300.0	None ~~HNO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-14-08
Well ID:	TM-08 SWAN	Weather:	clear
ADWR 55 No.	522817	Collected By:	MA

WELL DATA

Well Depth (ft bls):	817	Time:	8:10
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	>500'	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See file
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
8:17	8	8	7.32	20.3	478	clear	None	Pump on 8:16
8:20	"	32	7.59	22.0	480	"	"	
8:25	"	72	7.48	23.9	480	"	"	
8:30	"	112	7.44	24.3	481	"	"	
8:35	"	152	7.44	24.4	480	"	"	
		Total discharge = 192 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-08 SWAN	8:40	Plastic	250 ml	1	EPA 300.0	~~None~~ NOS	Filtered

Additional Comments: Bees are all around

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FMI Copper Queen Branch
Phase No.	2.2	Date:	5-23-08
Well ID:	TM-15 MILLER	Weather:	Partly cloudy
ADWR No.	522699	Collected By:	MA

WELL DATA

Well Depth (ft bls):	325	Time:	10:35
Casing Diameter (in):	4"	Point of Measurement:	NA
Static Water Level (ft bmp):	obstructed	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:41	6	6	7.36	21.2	382	Clear	None	Pump on at 1040
10:43	6	18	7.65	21.9	375	"	"	
10:45	6	30	7.67	21.9	370	"	"	
10:49	6	54	7.58	22.0	372	"	"	
10:50	6	60	7.54	22.1	371	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-15 MILLER	10:52	Plastic	250ml	1	EPA 300.0	None	Filtered

Additional Comments: I will use previous wl measure for purge vol. which is 3 casings = 59 gallons

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-22-08
Well ID: (MW)	522578	Weather:	Cloudy / Windy
ADWR 55 No.	TM-16	Collected By:	MA

WELL DATA

Well Depth (ft bls):	115	Time:	12:05
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	81.24	GPS:	See file
1 Casing Volume (gals):	22.0	Elevation:	See file
3 Casing Volumes (gals):	66		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
12:13	15	15	7.00	21.2	1284	clear	None	on at 12:12
12:15	"	45	7.08	20.8	1302	"	"	
12:18	"	90	7.09	20.6	1321	"	"	
12:20	"	120	7.05	20.5	1304	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-16	12:22	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

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Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-22-08
Well ID:	TM-19A	Weather:	Cloudy / windy
ADWR 55 No.	522580	Collected By:	MA

WELL DATA

Well Depth (ft bls):	700	Time:	10:02
Casing Diameter (in):	4"	Point of Measurement:	TOC
Static Water Level (ft bmp):	~~MA 199.05~~ 199.50	GPS:	See File
1 Casing Volume (gals):	326.4	Elevation:	See File
3 Casing Volumes (gals):	980 50 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
10:08	20	40	7.42	20.7	476	Dark Red	None	Pump on 10:06
10:10	"	80	7.56	21.2	479	Clear	None	
10:15	"	180	7.71	22.0	464	Slight Dark	None	
10:20	"	280	7.40	23.3	501	light Red	None	
10:25	"	380	7.37	23.6	504	light grey	None	
10:30	"	480	7.35	23.8	503	Clear	"	
10:35	"	580	7.34	24.0	505	Clear	"	
10:40	"	680	7.34	24.1	503	"	"	
10:45	"	780	7.35	24.1	503	"	"	
10:50	"	880	7.36	24.0	501	"	"	
10:55	"	980	7.36	24.0	501	"	"	
~~MyDO~~								

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-19A	10:58	Plastic	250 ml	1	EPA 300.0	~~None~~ ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	Freeport Copper Queen Branch
Task No.	2.2	Date:	5-22-08
Well ID:	TM-41	Weather:	Clear
ADWR No.	55-562555	Collected By:	MA

WELL DATA

Well Depth (ft bls):	210	Time:	9:30
Casing Diameter (in):	5"	Point of Measurement:	TOC
Static Water Level (ft bmp):	* 193.88	GPS:	604838 3471308
1 Casing Volume (gals):	NA	Elevation:	4770
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
		No Sample						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	None	Filtered

Additional Comments: * TD of sounding tube is 194.00
No sample, wl too low to pump

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-22-08
Well ID:	TM-42	Weather:	cloudy / windy
ADWR 55 No.	562554	Collected By:	MA

WELL DATA

Well Depth (ft bls):	250	Time:	11:17
Casing Diameter (in):	~~4~~ MA 5"	Point of Measurement:	TOC
Static Water Level (ft bmp):	210.98	GPS:	See file
1 Casing Volume (gals):	~~25.5~~ MA 40	Elevation:	See file
3 Casing Volumes (gals):	~~76~~ MA 120		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
11:23	6	6	6.92	21.2	1296	clear	None	on at 11:22
11:26	"	24	6.96	21.6	1298	"	"	
11:30	6	48	7.02	21.4	1285	"	"	
11:33	6	66	7.04	21.4	1270	"	"	
11:36	6	84	7.05	21.3	1269	"	"	
11:40	6	108	7.05	21.4	1270	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TM-42	11:44	Plastic	250 ml	1	EPA 300.0	~~None~~ NO3	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	TVI 236	Weather:	Clear
ADWR 55 No.	802236	Collected By:	MA

WELL DATA

Well Depth (ft bls):	222	Time:	7:45
Casing Diameter (in):	12"	Point of Measurement:	TOC
Static Water Level (ft bmp):	123.30	GPS:	See file
1 Casing Volume (gals):	580	Elevation:	See file
3 Casing Volumes (gals):	1740 4 min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
7:50	500	1500	7.18	19.4	498	clear	None	Pump on @ 7:47
7:55	"	4000	7.15	20.3	499	"	"	
8:00	"	6500	7.13	20.4	492	"	"	
8:05	"	9000	7.13	20.4	494	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TVI 236	8:08	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments: This well runs every evening and had only been off for approx 3 hrs prior to water level measure.

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Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	TVI 713	Weather:	Clear
ADWR 55 No.	567713	Collected By:	MA

WELL DATA

Well Depth (ft bls):		Time:	~~5-7-0~~ MA 8:56
Casing Diameter (in):		Point of Measurement:	TOC
Static Water Level (ft bmp):	127.10	GPS:	600726 12R 3468411
1 Casing Volume (gals):		Elevation:	4537'
3 Casing Volumes (gals):			

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
		Plastic	250 ml	1	EPA 300.0	NO3	Filtered

Additional Comments: This well is capped. This well is approx. 11½' SW of TVI 875

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Groundwater Sampling Form

Project No.	872000.00	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	TVI 875	Weather:	Clear
ADWR 55 No.	568875	Collected By:	MA

WELL DATA

Well Depth (ft bls):	330	Time:	8:25
Casing Diameter (in):	6"	Point of Measurement:	No Access
Static Water Level (ft bmp):	NA	GPS:	See file
1 Casing Volume (gals):	NA	Elevation:	See file
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
8:29	500	500	7.01	21.6	833	Clear	None	Pump on at 8:28
8:33	~~2500~~ MAX	2500	7.08	21.2	846	"	"	
8:38	500	5000	7.09	21.3	840	"	"	
9:43	500	7500	7.09	21.2	833	"	"	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
TVI 875	8:47	Plastic	250 ml	1	EPA 300.0	~~None~~ NO3	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-15-08
Well ID:	WEED	Weather:	Clear
ADWR 55 No.	~~599535~~ 544535	Collected By:	MA

WELL DATA

Well Depth (ft bls):	300	Time:	9:20
Casing Diameter (in):	NA	Point of Measurement:	NA
Static Water Level (ft bmp):	No Access	GPS:	See File
1 Casing Volume (gals):	NA	Elevation:	See File
3 Casing Volumes (gals):	NA		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:33	NA	NA	7.22	22.7	365	clear	None	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
WEED	9:40	Plastic	250 ml	1	EPA 300.0	None ~~HNO3~~	Filtered

Additional Comments: At the request of owner, sample was collected at well head and not purged. Owner stated that the well is in constant use.

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	872000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-7-08
Well ID:	WEISKOPF	Weather:	Clear
ADWR 55 No.	641802	Collected By:	MA

WELL DATA

Well Depth (ft bls):	200'	Time:	15:05
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	143.90	GPS:	See File
1 Casing Volume (gals):	82.4	Elevation:	See File
3 Casing Volumes (gals):	247		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
15:07	10	10	6.85	23.3	1024	clear	None	openbid at 15:06
15:10	"	40	6.98	22.1	957	"	"	
15:15	"	90	7.08	21.7	1032	"	"	
15:20	"	140	7.08	21.8	1181	"	"	
15:25	"	190	7.12	21.8	1218	"	"	
15:30	"	240	7.10	21.8	1251	"	"	
		Total Discharge is 290 gal.						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
WEISKOPF	15:35	Plastic	250 ml	1	EPA 300.0	None ~~NO3~~	Filtered

Additional Comments:

HYDRO GEO CHEM, INC.

Groundwater Sampling Form

Project No.	8720000	Client:	FREEPORT Copper Queen Branch
Phase No.	2.2	Date:	5-6-08
Well ID:	ZANDER	Weather:	clear / windy
ADWR 55 No.	205126	Collected By:	MA

WELL DATA

Well Depth (ft bls):	280'	Time:	9:28
Casing Diameter (in):	6"	Point of Measurement:	TOC
Static Water Level (ft bmp):	145.33	GPS:	see file
1 Casing Volume (gals):	197.8	Elevation:	see file
3 Casing Volumes (gals):	594 40min		

FIELD SAMPLING DATA

Time	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Color	Odor	Comment
9:32	15	15	7.11	21.9	417	clear	None	open valve at 9:31
9:35	"	60	7.21	21.5	409	"	"	
9:40	"	135	7.22	21.4	405	"	"	
9:45	"	210	7.24	21.1	404	"	"	
9:50	"	285	7.26	21.2	403	"	"	
10:00	"	435	7.25	21.1	403	"	"	
10:05	"	510	7.25	21.1	405	"	"	
10:10	"	585	7.26	21.2	404			
		Total Discharge: 660 gal						

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
ZANDER	10:15	Plastic	250 ml	1	EPA 300.0	~~NO3~~ None	Filtered

Additional Comments: