FOURTH QUARTER 2011
GROUNDWATER MONITORING REPORT

TASKS 1.0 AND 2.2 OF AQUIFER CHARACTERIZATION PLAN
MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07
COCHISE COUNTY, ARIZONA

Prepared for:

FREEPORT-MCMORAN CORPORATION
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Bisbee, Arizona 85603

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January 19, 2012

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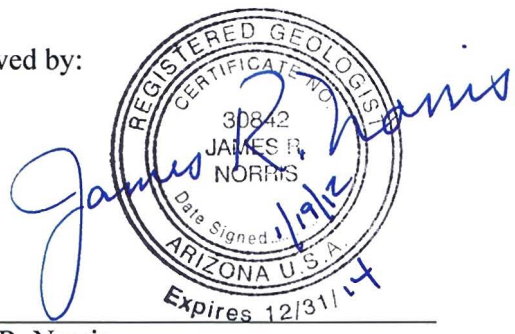

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January 19, 2012

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1. INTRODUCTION

This report provides the results of groundwater monitoring conducted by Freeport-McMoRan Corporation Copper Queen Branch (CQB) in the fourth quarter 2011 in the vicinity of the Concentrator Tailing Storage Area (CTSA). Groundwater monitoring is conducted pursuant to Tasks 1.0 (well inventory of drinking water wells) and 2.2 (groundwater monitoring) of the Work Plan (Hydro Geo Chem, Inc. [HGC], 2008) to characterize sulfate in the vicinity of the CTSA. The Work Plan was submitted to Arizona Department of Environmental Quality (ADEQ) on December 17, 2007 pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). CQB initiated water sampling prior to work plan approval while ADEQ was commenting on the Work Plan and CQB was responding to their comments. Revision 1 of the Work Plan was submitted to ADEQ on July 3, 2008 and ADEQ approved the Work Plan on August 3, 2008. On January 25, 2010 CQB proposed a revised groundwater monitoring program (CQB, 2010). The revised monitoring program was approved by ADEQ in April 2010 (ADEQ, 2010). Clear Creek Associates (Clear Creek) prepared this groundwater monitoring report on behalf of CQB.

1.1 Scope of Groundwater Monitoring

The objectives of groundwater monitoring are:

- Determination of the sulfate concentration in drinking water supply (DWS) wells outside of and within one mile of the sulfate plume for the purpose of identifying the need for mitigation actions and tracking the plume margin,
- Identification of the plume margin for ongoing delineation of the plume extent and migration,
- Documentation of the sulfate concentration in the plume and at areas distal to the plume to monitor long-term concentration trends, and
- Measurement of water levels in the vicinity of the plume to document potentiometric conditions (CQB, 2010).

The groundwater plume is considered to consist of groundwater with sulfate in excess of 250 milligrams per liter (mg/L) attributable to the CTSA. The sample collection and analysis specifications of the Work Plan have been retained throughout the groundwater monitoring program. Table 1 provides the schedule for the groundwater monitoring program. Dissolved sulfate is the only constituent monitored.

Figure 1 presents a generalized geologic map of the study area and well locations where data reported herein have been collected. Table 2 lists wells identified for monitoring in the fourth quarter, their availability for sampling, and their sampling status. Groundwater sampling and analysis methods used by Clear Creek and CQB are described in the Quality Assurance Project Plan (QAPP) contained in Appendix F of the Work Plan (HGC, 2008). Results of groundwater monitoring are presented in Section 2.

2. GROUNDWATER MONITORING RESULTS

2.1 Results of Monitoring

Analytical results and groundwater elevation data for the fourth quarter 2011 are tabulated in Tables 3 and 4, respectively, along with information previously collected under the Mitigation Order. Figure 2 shows the concentrations of dissolved sulfate in the wells sampled in the fourth quarter 2011. The most recent sample results are shown at wells where multiple samples were collected during the quarter. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 3 shows groundwater elevations in the fourth quarter 2011. Groundwater elevations were calculated using depth to water measurements made under static (nonpumping) conditions for all wells shown on Figure 3.

2.2 Quality Assurance/Quality Control Review

Pursuant to Section 6.4 of the QAPP, a data verification report was prepared for quality assurance and quality control purposes. The data verification report, analytical laboratory reports, and groundwater sampling forms for samples collected by Clear Creek and CQB during the fourth quarter 2011 are included in Appendices A, B, and C respectively. As determined by the analytical data verification review, all data for samples collected in the fourth quarter 2011 by Clear Creek and CQB are of acceptable quality for use in the groundwater monitoring being conducted pursuant to the Mitigation Order.

3. FINDINGS

This report provides the results of groundwater monitoring conducted within the vicinity of the CTSA for the fourth quarter 2011. Groundwater samples were collected from 49 wells and depth to water measurements were collected at 33 wells. The December 2010 Aquifer Characterization Report (Clear Creek, 2010) provides detailed descriptions of the hydrogeology, water quality, and sulfate plume. Findings based on the fourth quarter 2011 groundwater monitoring are described below.

- Water quality samples have been collected from wells completed in three principal water bearing units in the area: basin fill, undifferentiated Bisbee Group, and Glance Conglomerate. The undifferentiated Bisbee Group consists, from youngest to oldest, of the Cintura Formation, Upper Mural Limestone, Lower Mural Limestone and Morita Formation. Figures 2 and 3 provide the screened lithology of the wells sampled.

- Sulfate concentration data indicate that the plume extends to the southwest from the vicinity of the former evaporation pond to the vicinity of Naco and to the south to the vicinity of Bisbee Junction (Figure 2). The groundwater monitoring data indicate that the sulfate plume extends over an oblong area of approximately 2 miles by 3.9 miles and is contained primarily in the basin fill and undifferentiated Bisbee Group except near the former evaporation pond where wells in the Glance Conglomerate have sulfate concentrations greater than 250 mg/L.

- The sulfate concentration in bedrock monitoring well BMO-2008-10GL was 1,020 mg/L in July 2010 and 644 mg/L in July 2011. The July 2011 sample concentration was the lowest to date. CQB attempted to collect a sample during the fourth quarter 2011, to confirm the result of the July sample, but was not able to collect the sample due to mechanical problems with the submersible pump. The well will be sampled when the mechanical problems are repaired.

- Comparison of the fourth quarter 2011 sulfate concentrations with previous quarters indicates no large scale change in the plume geometry since the Mitigation Order sampling began in the fourth quarter 2008, although concentration contours within the plume have been modified to reflect current concentrations.

- Figure 4 shows sulfate concentrations through time at public drinking water supply wells that are not receiving mitigation actions. Sulfate concentrations have remained relatively stable over time, although NWC-04 displays the greatest variability in concentration.

- Groundwater elevations decrease from northeast to southwest in the area east of the Black Gap Fault and between the Bisbee Municipal Airport and Bisbee Junction, and from east to west across the central portion of the study area west of the Black Gap Fault (Figure 3).

- Figures 5 and 6 show groundwater elevations over time for BMO monitor wells with screened intervals in basin fill and bedrock, respectively. Groundwater elevations in BMO monitor wells screened in basin fill have decreased over time. The maximum decrease has been 4.16 feet since July 2008. Groundwater elevations in BMO monitor wells screened in bedrock are relatively steady over time, although BMO-2008-10GL and BMO-2008-11G display increasing trends whereas BMO-2008-1G displays a decreasing trend.

4. REFERENCES

Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent, Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.

ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter dated January 25, 2010. April 22, 2010.

Clear Creek Associates (Clear Creek). 2010. Revision I Aquifer Characterization Report, Task 4.0 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona, Volumes I and II. December 15, 2010.

Freeport McMoRan Copper Queen Branch (CQB). 2010. Correspondence from Rebecca Sawyer, CQB, to Cynthia Campbell, ADEQ, Re: Request to Modify Groundwater Monitoring Program Mitigation Order on Consent No. P-121-07. January 25, 2010.

Hydro Geo Chem, Inc. (HGC). 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

TABLES

Table 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
ANDERSON	613396	✓	✓	✓	✓
AWC-02	616586	✓	✓	✓	✓
AWC-03	616585	✓	✓	✓	✓
AWC-04	616584	✓	✓	✓	✓
AWC-05	590620	✓	✓	✓	✓
BANKS 986	647986	✓	✓	✓	✓
BANKS 987	647987	WLO		WLO	
BARTON 919	644919	WLO		WLO	
BF-01	539783			✓	
BIMA	577927	✓	✓	✓	✓
BMO-2008-1G	909474	✓		✓	
BMO-2008-3B	909147	✓		✓	
BMO-2008-4B	910096	✓		✓	
BMO-2008-5B	909653	✓	✓	✓	✓
BMO-2008-5M	909552	✓	✓	✓	✓
BMO-2008-6B	909146	✓	✓	✓	✓
BMO-2008-6M	909019	✓	✓	✓	✓
BMO-2008-7M	908794	✓		✓	
BMO-2008-8B	910097			✓	
BMO-2008-8M	909711	✓		✓	
BMO-2008-9M	909255	✓		✓	
BMO-2008-10GL	909435			✓	
BMO-2008-10GU	909272			✓	
BMO-2008-11G	909434	✓		✓	
BMO-2008-13B	909551			✓	
BMO-2008-13M	909760			✓	
BMO-2010-1M	219957	✓	✓	✓	✓
BMO-2010-2M	219958	✓	✓	✓	✓
BMO-2010-3B	219970	✓	✓	✓	✓
BMO-2010-3M	219969	✓	✓	✓	✓
CHAMBERS	629807	✓	✓	✓	✓
COB MW-1	903992			✓	
COB MW-2	903984	✓		✓	
COB MW-3	906823			✓	
COB WL	593116			✓	
COOPER	623564	✓	✓	✓	✓
COOPER C	637069	✓	✓	✓	✓
DODSON	644927	✓	✓	✓	✓
DOUGLASS 791	592791	WLO		WLO	

Table 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
DOUGLASS 792	592792	WLO		WLO	
DURAZO	NR	✓	✓	✓	✓
EAST	599796	✓	✓	✓	✓
EPPELE 641	805641	✓	✓	✓	✓
FLEMING	218386	WLO		WLO	
FRANCO	500101	✓	✓	✓	✓
FULTZ	212447	✓	✓	✓	✓
GARNER 557	558557	WLO		WLO	
GARNER 635	587635	✓	✓	✓	✓
GGOOSE 547	628547	✓		✓	
GOAR RANCH	610695	WLO		WLO	
HOBAN	805290	✓	✓	✓	✓
HOWARD	NR	✓	✓	✓	✓
KEEFER	209744	✓	✓	✓	✓
MCCONNELL 265	539265	✓	✓	✓	✓
METZLER	35-71891	✓	✓	✓	✓
MOORE	538847	✓	✓	✓	✓
NESS	509127	✓		✓	
NOTEMAN	212483	✓	✓	✓	✓
NWC-02	562944	✓	✓	✓	✓
NWC-03	203321	✓	✓	✓	✓
NWC-03 CAP	627684	WLO		WLO	
NWC-04	551849	✓	✓	✓	✓
NWC-06	575700	✓	✓	✓	✓
OSBORN	643436	✓		✓	
PALMER	578819	✓	✓	✓	✓
PANAGAKOS	35-76413			✓	
PARRA	576415	✓	✓	✓	✓
PIONKE	613395	✓	✓	✓	✓
POOL	509518	✓	✓	✓	✓
RAMIREZ	216425	✓	✓	✓	✓
RAY	803772	✓	✓	✓	✓
ROGERS 596/803	573596	✓	✓	✓	✓
ROGERS E	216018	✓	✓	✓	✓
RUIZ	531770	✓	✓	✓	✓
SCHWARTZ	210865	✓	✓	✓	✓
STEPHENS	808560	WLO		WLO	
SUNBELT	201531	WLO		WLO	
SWAN	NR	✓		✓	

Table 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
TM-02A	522574	✓		✓	
TM-06 MILLER	522695			✓	
TM-07	522576	✓		✓	
TM-15 MILLER	522699			✓	
TM-16	522578			✓	
TM-19A	522580	✓		✓	
TM-42	562554			✓	
TVI 236	802236			✓	
TVI 713	567713	WLO		WLO	
TVI 875	568875	✓	✓	✓	✓
WEED	544535	✓	✓	✓	✓
WEISKOPF	641802	✓	✓	✓	✓
ZANDER	205126	✓	✓	✓	✓

Notes:

ADWR = Arizona Department of Water Resources

WLO = Water Level Only

NR = No Record

Table 2
Summary of Groundwater Monitoring for Fourth Quarter 2011

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
ANDERSON	613396	Anderson	Well Inventory	236	Y	Y	Water quality sample collected in October 2011.
AWC-02	616586	Arizona Water Company	Plume	330	N	Y	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.
AWC-03	616585	Arizona Water Company	Plume	269	N	Y	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.
AWC-04	616584	Arizona Water Company	Plume	250	N	Y	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.
AWC-05	590620	Arizona Water Company	Plume	1183	N	Y	Water quality sample collected in October 2011. Unable to collect water level because well was pumping.
BANKS 986	647986	Banks	Well Inventory	435	N	Y	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.
BANKS 987	647987	Banks	Well Inventory	339	Y	N	Water level collected in October 2011.
BARTON 919	644919	Barton	Plume	130	N	N	Well not scheduled for fourth quarter 2011 sampling.
BF-01	539783	Copper Queen Branch	Plume	400	N	N	Well not scheduled for fourth quarter 2011 sampling.
BIMA	577927	Bisbee Municipal Airport	Plume	465	N	Y	Water quality sample collected in October 2011. Water level not collected, could not get sounder down well.
BMO-2008-1G	909474	Copper Queen Branch	Plume	310	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-3B	909147	Copper Queen Branch	Plume	260	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-4B	910096	Copper Queen Branch	Plume	610	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-5B	909653	Copper Queen Branch	Plume	285	Y	Y	Water quality sample collected in December 2011.
BMO-2008-5M	909552	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in December 2011.
BMO-2008-6B	909146	Copper Queen Branch	Plume	265	Y	Y	Water quality sample collected in December 2011.
BMO-2008-6M	909019	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in December 2011.
BMO-2008-7M	908794	Copper Queen Branch	Plume	670	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-8B	910097	Copper Queen Branch	Plume	480	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-8M	909711	Copper Queen Branch	Plume	1210	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-9M	909255	Copper Queen Branch	Plume	775	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-10GL	909435	Copper Queen Branch	Plume	810	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-10GU	909272	Copper Queen Branch	Plume	449	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-11G	909434	Copper Queen Branch	Plume	760	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-13B	909551	Copper Queen Branch	Plume	474	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2008-13M	909760	Copper Queen Branch	Plume	1030	N	N	Well not scheduled for fourth quarter 2011 sampling.
BMO-2010-1M	219957	Copper Queen Branch	Plume	540	Y	Y	Water quality sample collected in December 2011.
BMO-2010-2M	219958	Copper Queen Branch	Plume	370	Y	Y	Water quality sample collected in December 2011.
BMO-2010-3B	219970	Copper Queen Branch	Plume	330	Y	Y	Water quality sample collected in October 2011.

Table 2
Summary of Groundwater Monitoring for Fourth Quarter 2011

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
BMO-2010-3M	219969	Copper Queen Branch	Plume	532	Y	Y	Water quality sample collected in October 2011.
CHAMBERS	629807	Chambers	Well Inventory	245	N	Y	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.
COB MW-1	903992	City of Bisbee	Plume	420	N	N	Well not scheduled for fourth quarter 2011 sampling.
COB MW-2	903984	City of Bisbee	Plume	170	N	N	Well not scheduled for fourth quarter 2011 sampling.
COB MW-3	906823	City of Bisbee	Plume	269	N	N	Well not scheduled for fourth quarter 2011 sampling.
COB WL	593116	City of Bisbee	Plume	150	N	N	Well not scheduled for fourth quarter 2011 sampling.
COOPER	623564	Cooper	Plume	325	N	Y	Water quality sample collected in November 2011. Unable to collect water level because wellhead is not accessible.
COOPER C	637069	Hutson	Plume	220	Y	N	Water level collected in October 2011. Unable to collect water sample because electricity at property is turned off.
DODSON	644927	Dodson	Plume	200	Y	Y	Water quality sample collected in October 2011.
DOUGLASS 791	592791	Douglass	Well Inventory	200	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.
DOUGLASS 792	592792	Douglass	Well Inventory	200	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.
DURAZO	NR	Durazo	Well Inventory	ND	N	Y	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.
EAST	599796	East	Well Inventory	125	Y	Y	Water quality sample collected in October 2011.
EPPELE 641	805641	Eppele	Well Inventory	265	Y	Y	Water quality sample collected in October 2011.
FLEMING	218386	Fleming	Well Inventory	400	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.
FRANCO	500101	Franco	Well Inventory	200	N	N	Well is not currently operational.
FULTZ	212447	Fultz	Well Inventory	300	N	Y	Water quality sample collected in October 2011. Unable to collect water level due to obstruction in well.
GARNER 557	558557	Garner	Plume	300	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2011.
GARNER 635	587635	Garner	Plume	680	Y	Y	Water quality sample collected in October 2011.
GGOOSE 547	628547	Copper Queen Branch	Plume	800	N	N	Well not operational. Unable to collect water level due to obstruction.
GOAR RANCH	610695	Goar	Well Inventory	250	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.
HOBAN	805290	Copper Queen Branch	Well Inventory	316	Y	Y	Water quality sample collected in December 2011.
HOWARD	NR	Howard	Well Inventory	200	Y	Y	Water quality sample collected in October 2011.
KEEFER	209744	Keefer	Well Inventory	245	Y	Y	Water quality sample collected in October 2011.
MARCELL	NR	Marcell	Plume	220	N	Y	Water quality sample collected in November 2011. Unable to collect water level because there is no available port in wellhead.
MCCONNELL 265	539265	McConnell	Well Inventory	216	Y	Y	Water quality sample collected in October 2011.

Table 2
Summary of Groundwater Monitoring for Fourth Quarter 2011

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
METZLER	35-71891	Metzler	Well Inventory	351	Y	Y	Water quality sample collected in October 2011.
MOORE	538847	Moore	Well Inventory	220	N	Y	Water quality sample collected in October 2011. Unable to collect water level because wellhead is not accessible.
NESS	509127	Ness	Well Inventory	812	N	N	Well not scheduled for fourth quarter 2011 sampling.
NOTEMAN	212483	Noteman	Well Inventory	400	N	Y	Water quality sample collected in October 2011. Unable to collect water level due to obstruction in well.
NSD-02	527587	Naco Sanitary District	Water Level	120	Y	N	Water level measurement taken in December 2011.
NSD-03	527586	Naco Sanitary District	Water Level	100	Y	N	Water level measurement taken in December 2011.
NWC-02	562944	Naco Water Company	Plume	312	N	Y	Water quality sample collected in October 2011. Unable to collect water level because the well was pumping.
NWC-03	203321	Naco Water Company	Plume	312	N	Y	Water quality sample collected in October 2011. Unable to collect water level because the well was pumping.
NWC-03 CAP	627684	Naco Water Company	Plume	179	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2011.
NWC-04	551849	Naco Water Company	Well Inventory Sulfate Trend	795	N	Y	Water quality sample collected in October, November and December 2011. Unable to collect water levels because the well was pumping.
NWC-06	575700	Naco Water Company	Well Inventory	410	N	Y	Water quality sample collected in October 2011. Unable to collect water level because the well was pumping.
OSBORN	643436	Osborn	Plume	258	N	N	Well not scheduled for fourth quarter 2011 sampling.
PALMER	578819	Palmer	Well Inventory	220	N	Y	Water quality sample collected in October. Unable to collect water level because wellhead is inaccessible.
PANAGAKOS	35-76413	Panagakos	Well Inventory	200	N	N	Well not scheduled for fourth quarter 2011 sampling.
PARRA	576415	Parra	Plume	355	N	Y	Water quality sample collected in October 2011. Unable to collect water level because of obstruction in well.
PIONKE	613395	Pionke	Well Inventory	300	Y	Y	Water quality sample collected in October 2011.
POOL	509518	Pool	Well Inventory	313	N	N	Unable to access well. Unable to contact well owner .
RAMIREZ	216425	Ramirez	Well Inventory	300	Y	Y	Water quality sample collected in October 2011.
RAY	803772	Ray	Well Inventory	100	Y	Y	Water quality sample collected in October 2011.
ROGERS 596	573596	Rogers, Ernest D	Plume	290	Y	N	Well is turned off. Rogers residence uses ROGERS 803. Water level measurement collected in October 2011.
ROGERS 803	641803	Rogers, Ernest D	Plume	140	N	Y	Water quality sample collected in October 2011. Unable to collect water level measurement because wellhead is not accessible.
ROGERS E	216018	Rogers, Ernest M	Well Inventory	290	Y	Y	Water quality sample collected in October 2011.
RUIZ	531770	Ruiz	Well Inventory	312	N	Y	Water quality sample collected in October 2011. Unable to collect water level measurement because wellhead is not accessible.
SCHWARTZ	210865	Schwartz	Well Inventory	305	Y	Y	Water quality sample collected in October 2011

Table 2
Summary of Groundwater Monitoring for Fourth Quarter 2011

Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
STEPHENS	808560	Stephens	Well Inventory	NR	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.
SUNBELT	201531	Sunbelt Marketing, Inc.	Well Inventory	380	N	N	Well identified for water level measurements only. Well not scheduled for water level measurements in the fourth quarter 2011.
SWAN	NR	Swan	Well Inventory	NR	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-02A	522574	Copper Queen Branch	Plume	925	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-06 MILLER	522695	Miller	Plume	200	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-07	522576	Copper Queen Branch	Plume	350	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-10 USBP	522696	U.S. Border Patrol	Well Inventory	290	N	Y	Water quality sample collected in December 2011. Unable to collect water level because water is below top of pumping equipment.
TM-15 MILLER	522699	Miller	Well Inventory	325	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-16	522578	Copper Queen Branch	Plume	115	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-19A	522580	Copper Queen Branch	Plume	700	N	N	Well not scheduled for fourth quarter 2011 sampling.
TM-42	562554	Copper Queen Branch	Plume	250	N	N	Well not scheduled for fourth quarter 2011 sampling.
TVI 236	802236	Turquoise Valley, Inc.	Well Inventory	222	N	N	Well not scheduled for fourth quarter 2011 sampling.
TVI 713	567713	Turquoise Valley, Inc.	Well Inventory	200	Y	N	Well identified for water level measurements only. Water level measurement taken in October 2011.
TVI 875	568875	Turquoise Valley, Inc.	Plume	330	N	Y	Water quality sample collected in October 2011. Unable to collect water level because well head is not accessible.
WEED	544535	Weed	Plume	320	N	Y	Water quality sample collected in October 2011. Unable to collect water level because well head is not accessible.
WEISKOPF	641802	Weiskopf	Plume	200	Y	Y	Water quality sample collected in October 2011.
ZANDER	205126	Zander	Well Inventory	280	Y	Y	Water quality sample collected in October 2011.

ADWR = Arizona Department of Water Resources

ft bls = below land surface

NR = No Record

35-71891 = ADWR 35 Database

Y = Yes

N = No

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
ANDERSON	613396	3/20/08	7.25	21.1	1176	431
		5/5/08	7.03	21.8	1231	452
		7/14/08	7.11	21.6	1260	472
		10/15/08	7.10	21.3	1252	475
		1/27/09	7.27	21.0	965	488
		4/14/09	7.12	21.8	1229	534
		7/14/09	7.03	22.2	1372	550
		10/12/09	6.98	21.5	1375	510
		1/27/10	7.93	20.1	1449	523
		4/21/10	7.40	20.7	1439	627
		7/19/10	6.93	24.1	1420	648
		10/19/10	7.03	20.6	1229	416
		1/17/11	7.02	20.6	1334	562
		4/11/11	6.92	15.1	1485	609
		7/14/11	7.23	24.4	1451	678
		10/11/11	6.65	21.2	1230	543
AWC-02	616586	1/7/08	ND	ND	ND	14
		3/3/08	ND	ND	ND	16
		5/5/08	ND	ND	ND	13.3
		8/12/08	7.01	22.3	630	14.3
		10/23/08	7.31	23.1	464	15.9
		3/11/09	7.19	21.8	420	15.5
		4/22/09	7.17	22.6	430	14.7
		7/22/09	7.24	22.7	444	14.2
		10/21/09	7.19	21.3	468	16.8
		2/3/10	7.44	19.7	449	18.6
		4/23/10	7.56	19.7	526	18.3
		7/20/10	7.27	23.9	450	18.2
		11/4/10	7.72	21.3	465.9	18.8
		1/19/11	7.84	19.0	500	18.4
		4/7/11	7.27	20.3	488.5	17.3
		7/13/11	5.93	23.9	431.5	12.9
		10/13/11	6.72	25.1	464.6	17.4
		10/13/11 DUP	6.72	25.1	464.6	17.4
AWC-03	616585	1/7/08	ND	ND	ND	41
		3/3/08	ND	ND	ND	38
		5/5/08	ND	ND	ND	37.3
		8/12/08	7.28	22.4	469	38.8
		10/23/08	7.48	21.0	462	41.8
		3/11/09	7.25	21.2	445	64.2
		4/22/09	7.30	21.4	452	42.4
		7/22/09	7.39	22.6	456	41.8
		10/21/09	7.48	21.3	540	50.5
		2/3/10	7.44	19.7	449	42.0
		4/23/10	7.57	19.7	468	44.4
		7/20/10	7.29	23.8	460	46.7
		11/4/10	7.80	20.8	452.3	46.3
		1/19/11	7.07	19.6	560	49.0
		4/7/11	7.28	19.9	469.8	46.8
		7/13/11	6.33	23.1	458.8	47.6
		7/13/11 DUP	6.33	23.1	458.8	46.2
		10/13/11	6.69	23.8	463.6	48.8
AWC-04	616584	2/4/08	ND	ND	ND	18
		4/7/08	ND	ND	ND	18
		6/2/08	ND	ND	ND	14.3
		8/12/08	7.08	22.5	458	21.6
		10/23/08	6.91	22.2	616	24
		3/11/09	7.02	21.3	539	27.2
		4/22/09	6.93	22.1	560	26.1
		7/22/09	7.13	22.5	587	26.2
		10/21/09	7.00	21.2	607	25.7
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.14	19.2	625	27.4
		7/20/10	7.02	24.1	600	26.6
		11/4/10	7.41	20.3	593.2	24.0
		1/19/11	8.15	20.5	690	26.2
		4/7/11	7.00	20.4	637.2	25.8
		7/13/11	6.88	20.4	610.1	25.7
		10/13/11	6.38	24.0	619.7	27.6

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
AWC-05	590620	2/4/08	ND	ND	ND	13
		4/7/08	ND	ND	ND	14
		6/2/08	ND	ND	ND	14.3
		8/12/08	6.74	23.3	425	14.9
		10/23/08	7.45	21.0	422	15.4
		3/11/09	7.31	22.1	398	16.5
		6/3/09	7.33	22.0	418	12.1
		7/22/09	7.49	24.4	423	14.1
		10/21/09	7.37	21.1	433	16.5
		2/3/10	7.35	19.3	438	16.3
		4/23/10	7.62	18.9	443	17.6
		7/20/10	7.62	24.2	440	19.1
		11/4/10	7.92	20.7	427.1	18.4
		1/19/11	7.64	20.3	420	17.0
		4/7/11	7.22	20.8	438.3	17.6
		7/13/11	6.52	22.9	419.8	17.9
		10/13/11	6.82	26.0	427.5	19
BANKS 986	647986	2/27/08	7.53	21.8	980	44
		5/12/08	7.40	22.1	1021	65.2
		7/21/08	7.43	22.9	1034	82.2
		10/13/08	7.28	21.7	980	53
		1/21/09	7.66	21.6	872	164
		4/8/09	7.56	22.7	933	47
		7/9/09	7.59	23.1	871	70.9
		10/7/09	7.50	22.2	838	67.7
		2/25/10	7.56	21.1	1020	50.5
		4/20/10	7.71	22.8	1013	53.9
		7/20/10	7.70	23.2	828.3	71.5
		10/20/10	7.60	22.4	948.7	73.4
		1/17/11	7.73	20.6	1038	53.5
		4/5/11	7.66	21.5	965.0	64.5
		7/11/11	7.72	25.4	890.0	68.8
		10/12/11	7.88	21.2	1551	172
BF-01	539783	3/4/08	6.46	21.9	2745	1320
		5/23/08	6.41	18.3	2698	1450
		8/5/08	6.11	22.4	3095	1330
		11/5/08	6.33	19.9	3027	1490
		2/20/09	6.42	19.2	1477	1330
		5/6/09	5.98	23.9	2632	1280
		8/17/09	6.21	29.7	2948	1250
		11/4/09	6.24	23.0	2846	1280
		3/1/10	6.34	21.1	2945	1260
		4/7/10	5.83	20.4	1853	1450
		7/6/10	5.93	22.6	1403	1310
		7/13/11	6.26	21.3	2960	1350
BIMA	577927	2/6/08	6.69	22.2	1335	210
		4/25/2008[1]	6.37	23.1	1521	190
		5/13/2008[1]	6.58	22.7	1489	195
		6/23/2008[1]	6.30	23.3	1572	225
		6/23/08 DUP	6.30	23.3	1572	196
		7/29/2008[1]	6.44	23.0	1647	204
		8/28/2008[1]	M	23.0	1776	256
		9/23/2008[1]	6.29	23.0	1741	296
		10/22/08	6.41	22.3	1801	285
		1/20/09	6.40	21.7	1233	190
		1/20/09 DUP	6.40	21.7	1233	200
		4/7/09	6.45	23.4	1436	212
		7/8/09	6.31	23.4	1483	189
		10/5/09	6.34	22.7	1525	233
		1/20/10	6.88	17.0	M	222
		4/19/10	6.70	21.9	1533	256
		7/12/10	6.70	24.0	1577	273
		10/18/10	6.47	24.3	1702	296
		1/19/11	6.65	21.2	1672	283
		4/4/11	6.61	24.0	1643	282
		8/25/11	6.27	25.9	1460	300
		10/10/11	6.5	24.1	1520	322

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BLOMMER	633472	2/5/08	7.43	20.2	714	206
		4/21/2008[1]	7.06	21.9	753	201
		5/15/2008[1]	7.16	22.2	845	211
		6/23/2008[1]	6.93	21.5	903	193
		7/29/2008[1]	7.21	22.2	921	203
		8/27/2008[1]	7.12	22.1	864	189
		9/23/2008[1]	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200
BMO-2008-1G	909474	8/27/08	7.09	24.2	808	107
		11/11/08	7.00	20.8	721	143
		2/25/09	7.01	22.0	860	109
		4/28/09	7.04	22.2	762	198
		8/4/09	7.23	22.8	950	104
		10/27/09	7.11	21.9	922	103
		2/17/10	7.36	20.5	899.3	98.4
		4/15/10	7.04	22.2	711	95.2
		7/7/10	6.91	21.5	640	88.1
		7/7/10 DUP	6.91	21.5	640	87.1
		2/10/11	6.80	21.0	916	105
		7/12/11	7.2	26.6	1015	121
BMO-2008-3B	909147	7/18/08	7.35	23.9	615	106
		11/4/08	7.36	21.4	599	179
		11/4/08 DUP	7.36	21.4	599	177
		2/19/09	7.24	21.4	664	155
		5/11/09	7.23	22.1	631	149
		8/6/09	7.33	21.4	718	151
		8/6/09 DUP	7.33	21.4	718	156
		10/26/09	7.32	21.8	684	153
		3/3/10	7.38	21.4	695	164
		4/8/10	6.47	21.3	585	162
		7/1/10	6.92	21.4	541	157
		2/14/11	6.98	20.6	698	169
		7/12/11	7.04	21.4	672	148
BMO-2008-4B	910096	12/11/08	7.34	22.8	374	9.4
		2/18/09	7.17	23.2	370	13.4
		4/30/09	7.33	24.5	376	11.4
		4/30/09 DUP	7.33	24.5	376	11.8
		8/6/09	7.53	24.6	397	11.5
		10/27/09	7.53	23.7	379	11.2
		2/24/10	7.48	21.8	362	9.7
		4/16/10	7.70	23.4	330	9.73
		7/2/10	7.25	23.6	323	10.10
		2/15/11	7.65	22.2	362	8.90
		7/22/11	7.33	23.7	371	10.2
BMO-2008-5B	909653	9/30/08	7.08	22.0	688	193
		2/18/09	7.03	21.5	691	192
		4/27/09	7.32	22.1	605	177
		8/4/09	7.35	22.3	724	174
		10/29/09	7.29	21.8	731	181
		10/29/09 DUP	7.29	21.8	731	185
		2/15/10	7.22	21.7	720	185
		4/15/10	7.21	23.0	571	194
		7/7/10	6.94	22.2	551	183
		10/5/10	6.85	22.3	722	201
		2/14/11	6.90	21.8	725	203
		5/12/11	7.06	21.5	722	195
		7/13/11	6.99	22.0	712	200
		12/7/11	6.95	19.9	730	213

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-5M	909552	10/2/08	7.13	23.6	551	107
		2/18/09	7.06	22.5	562	122
		4/27/09	7.50	22.9	501	111
		8/4/09	7.53	23.1	605	122
		10/29/09	7.35	22.4	610	123
		2/15/10	7.31	22.5	581	123
		4/16/10	7.28	22.6	509	125
		4/16/10 DUP	7.28	22.6	509	124
		7/7/10	7.02	23.5	482	123
		10/5/10	6.81	22.5	602	127
		2/14/11	6.95	22.2	591	124
		5/12/11	7.16	23.0	558	119
		7/12/11	7.22	22.7	590	126
		12/7/11	7.1	21.2	601	129
BMO-2008-6B	909146	7/16/08	7.36	24.1	475	53.3
		11/4/08	7.41	21.5	398	60.3
		2/19/09	7.23	21.1	444	54.3
		4/27/09	7.55	21.7	389	52.7
		8/4/09	7.48	23.4	470	48.5
		10/26/09	7.29	22.5	448	48.7
		2/15/10	7.53	21.2	391	33.5
		4/15/10	7.47	21.0	362	37.0
		7/1/10	7.24	22.2	361	40.1
		10/5/10	7.05	21.0	407	37.2
		2/14/11	7.27	21.8	397	40.2
		5/12/11	7.32	21.5	380	35.0
		7/12/11	7.27	21.1	390	37.8
		12/7/11	7.28	20.8	330	21.8
BMO-2008-6M	909019	7/10/08	M	22.1	702	182
		11/4/08	7.33	21.8	621	199
		2/20/09	7.11	22.0	702	193
		4/28/09	7.34	22.4	595	119
		8/4/09	7.40	23.3	750	189
		10/26/09	7.18	22.4	727	187
		2/15/10	7.29	20.8	733	193
		4/15/10	7.36	20.2	619	208
		7/1/10	7.15	22.0	571	198
		10/5/10	6.87	21.3	720	202
		2/14/11	6.80	21.3	731	202
		5/12/11	7.12	21.9	709	189
		7/12/11	7.06	21.8	709	194
		12/7/11	6.94	21.3	710	200
BMO-2008-7M	908794	7/14/08	7.63	25.2	500	31.4
		11/6/08	7.53	22.6	380	34.5
		2/18/09	7.31	23.3	452	27.6
		5/11/09	7.43	24.4	426	26.0
		8/6/09	7.81	24.1	486	25.1
		10/27/09	7.53	23.0	470	26.1
		2/17/10	7.57	23.4	452	25.4
		2/17/10 DUP	7.57	23.4	452	25.0
		4/15/10	7.52	23.2	415	26.0
		7/6/10	7.28	23.5	391	22.8
		2/14/11	7.18	22.0	465	27.5
		2/14/11 DUP	7.18	22.0	465	26.4
		7/15/11	7.1	22.8	466	26.5
BMO-2008-8B	910097	12/5/08	6.47	20.1	2480	1890
		2/19/09	6.19	21.0	2958	1570
		5/5/09	6.18	21.3	2888	1370
		8/10/09	6.42	21.5	2897	1250
		11/9/09	6.33	21.8	2889	1510
		11/9/09 DUP	6.33	21.8	2889	1520
		3/3/10	6.51	20.4	3016	1320
		4/16/10	6.06	21.4	1682	1470
		7/1/10	6.10	21.4	1594	1440
		7/15/11	6.21	21.2	2940	1380

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-8M	909711	12/9/08	7.16	23.4	852	197
		2/19/09	7.27	23.5	758	147
		2/19/09 DUP	7.27	23.5	758	149
		5/5/09	7.19	25.1	680	122
		8/10/09	7.49	24.8	673	107
		11/5/09	7.30	25.4	675	104
		3/3/10	7.70	24.1	641	99.5
		4/16/10	7.29	24.5	541	97.0
		7/1/10	6.99	25.0	502	94.7
		1/24/11	7.05	23.4	595	98.2
		7/15/11	6.89	22.1	590	79.9
BMO-2008-9M	909255	8/8/08	7.72	25.7	415	47.3
		11/5/08	7.89	21.4	444	54.4
		2/26/09	7.71	24.5	482	28.8
		5/12/09	7.76	24.8	449	51.7
		8/17/09	7.76	25.6	534	53.4
		11/3/09	7.82	24.9	552	56.9
		3/4/10	8.07	22.4	520	58.6
		4/6/10	6.74	23.8	484	60.1
		7/1/10	7.40	24.6	425	61.0
		2/10/11	6.79	24.0	520	64.2
		7/15/11	7.56	24.3	516	67
BMO-2008-10GL	909435	8/20/08	6.22	29.5	2924	1320
		11/5/08	6.47	25.3	2573	1290
		2/25/09	6.34	26.8	2646	1180
		5/12/09	6.35	26.2	2402	1120
		8/11/09	6.52	27.3	2661	1030
		11/2/09	6.52	26.7	2565	1100
		3/4/10	6.76	24.1	2937	1080
		4/8/10	6.03	25.6	1575	1260
		7/2/10	6.16	26.3	1338	1020
		7/13/11	6.32	24.8	1726	644
BMO-2008-10GU	909272	8/4/08	6.41	23.6	3660	2210
		11/5/08	6.15	20.2	3343	1890
		2/25/09	5.96	22.7	3426	1740
		5/6/09	5.99	23.2	3359	1710
		8/11/09	6.28	22.5	3348	1690
		11/2/09	6.27	21.8	3157	1730
		3/10/10	6.67	19.1	3951	1700
		4/7/10	5.96	20.4	3210	1510
		7/6/10	5.90	21.8	1610	1670
		7/13/11	6.12	22.3	3890	1670
BMO-2008-11G	909434	8/22/08	8.02	28.2	359	14.2
		11/12/08	7.96	24.2	257	13.9
		2/26/09	7.92	25.1	319	12.3
		4/28/09	8.14	25.5	273	11.8
		8/12/09	8.24	25.3	365	11.2
		11/9/09	8.03	25.5	339	13.9
		3/1/10	8.37	23.2	338	13.0
		4/9/10	6.88	24.5	301	13.0
		7/1/10	6.97	25.4	298	12.3
		2/10/11	6.99	24.0	327	11.7
		7/22/11	7.26	24.6	331	12.1
		7/22/11 DUP	7.26	24.6	331	12.0
BMO-2008-13B	909551	10/3/08	6.49	21.6	2180	980
		2/17/09	6.51	20.9	1941	1000
		5/6/09	6.55	22.0	1891	930
		8/5/09	6.63	21.5	2137	950
		10/28/09	6.81	19.7	2259	1010
		2/16/10	6.87	20.8	2093	997
		4/14/10	6.38	21.2	1346	974
		7/6/10	6.37	21.8	1208	972
		7/15/11	6.44	20.8	2160	1010

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2008-13M	909760	12/3/08	7.73	24.1	1463	494
		2/17/09	8.21	22.7	1340	441
		4/29/09	8.04	24.8	1126	217
		8/5/09	8.04	25.4	1392	387
		10/28/09	8.12	21.4	1347	403
		2/16/10	8.07	24.9	1297	375
		4/13/10	8.06	23.2	1130	398
		7/2/10	8.30	23.9	1027	386
		7/15/11	8.4	23.4	1331	388
BMO-2010-1M	219957	9/9/10	7.82	24.6	727.0	150
		11/11/10	8.68	19.9	570	98
		2/11/11	8.15	20.8	589	138
		5/12/11	7.74	23.0	710	129
		8/31/11	7.74	23.2	562	154
		12/13/11	7.63	21.3	713	149
BMO-2010-2M	219958	9/15/10	6.66	22.6	2054	915
		11/11/10	6.97	20.6	1800	935
		2/10/11	6.53	20.8	2120	950
		5/13/11	6.54	21.1	2160	887
		7/14/11	6.62	21.5	2160	917
		12/13/11	6.59	20.3	2140	984
BMO-2010-3B	219970	7/29/10	7.48	23.1	420	16.0
		11/10/10	7.43	21.2	370	14.9
		1/20/11	7.44	20.9	416.1	14.4
		4/7/11	7.38	20.1	424.6	14.9
		7/13/11	7.68	22.3	404.5	13.8
		10/13/11	7.63	23.4	411.2	15.9
BMO-2010-3M	219969	7/31/10	7.73	24.3	390	14.8
		11/10/10	7.66	21.8	340	12.6
		11/10/10 DUP	7.66	21.8	340	12.7
		1/20/11	7.72	22.6	380.4	11.5
		4/7/11	7.38	23.5	376.5	12.3
		8/25/11	7.17	24.3	340	10.4
		10/13/11	7.73	23.6	375.8	10.5
BURKE	212268	2/7/08	7.17	23.0	411	29.5
		4/22/08	7.13	27.0	423	26
		8/5/08	7.06	26.8	496	21.9
		10/20/08	7.57	26.0	466	20.5
		2/11/09	7.23	25.0	363	23.9
		4/28/09	7.16	26.1	369	24.2
		8/19/09	7.36	26.7	486	22.5
		12/16/09	7.28	25.7	488	26
		3/2/10	7.56	12.3	432	23.8
		4/22/10	7.49	16.4	452	24.8
		7/21/10	7.56	25.6	423.7	33.1
CHAMBERS	629807	3/6/08	7.73	17.8	408	7.7
		5/5/08	7.15	22.1	421	6
		7/14/08	7.43	23.2	434	5.8
		10/15/08	7.41	22.5	420	4
		1/27/09	7.57	21.5	312	5.3
		4/14/09	7.42	22.4	384	6.8
		7/15/09	7.83	23.4	414	4.3
		10/13/09	7.41	22.6	410	6.5
		1/26/10	7.31	21.3	416	5.7
		4/23/10	7.47	20.9	427.5	8.34
		7/21/10	7.49	23.1	430	7.75
		10/19/10	8.00	23.0	440	7.04
		1/18/11	7.47	22.4	390	7.30
		4/11/11	7.18	22.0	427.3	7.74
		7/18/11	7.18	23.8	420.2	8.18
		10/12/11	7.33	22.6	425.8	7.8

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
COB MW-1	903992	2/22/08	6.93	21.2	1401	720
		5/20/08	6.88	22.0	2050	980
		7/30/08	6.88	21.7	1780	730
		10/23/08	6.95	21.2	1690	750
		2/12/09	6.92	21.1	1313	750
		4/21/09	7.15	22.7	1366	720
		7/22/09	6.94	21.6	1570	680
		7/22/09 DUP	6.94	21.6	1570	730
		10/22/09	6.81	22.3	1582	820
		2/4/10	7.04	21.1	1653	680
		4/20/10	6.92	21.8	1836	783
		7/13/10	7.02	22.3	2004	919
		7/14/11	6.78	21.4	1924	927
COB MW-2	903984	5/20/08	7.32	21.2	490	40.5
		7/30/08	7.34	20.8	511	37.6
		10/23/08	7.36	20.3	498	34.9
		2/12/09	7.35	20.2	379	35.6
		4/23/09	7.33	21.8	431	34
		7/22/09	7.36	21.3	483	33.5
		10/22/09	7.24	21.0	454	32.2
		3/3/10	7.55	19.7	450	33.5
		4/26/10	7.28	21.3	479.6	34.8
		7/13/10	6.91	21.2	479.5	30.4
		7/13/10 DUP	6.91	21.2	479.5	30.6
		1/20/11	7.47	20.7	440	29.6
		7/14/11	7.11	21.1	472.6	29.8
COB MW-3	906823	2/28/08	7.39	21.0	416	57.8
		3/27/08	ND	ND	ND	57.7
		4/30/08	ND	ND	ND	37
		5/20/08	7.56	22.3	473	35.8
		7/24/08	ND	ND	ND	64.9
		7/30/08	7.64	22.3	541	67.3
		10/9/08	ND	ND	ND	52.5
		10/23/08	7.43	20.8	507	76.6
		2/12/09	7.35	21.1	432	112
		4/23/09	7.35	22.6	407	43.7
		7/22/09	7.38	21.5	460	52.3
		10/22/09	7.40	21.3	466	74.2
		10/22/09 DUP	7.40	21.3	466	73.9
		3/3/10	7.36	21.1	480	102
		4/26/10	7.35	22.0	497.9	77.6
		7/13/10	7.41	21.7	456.7	46.5
		7/14/11	7.19	21.8	440.0	40.1
COB WL	593116	2/22/08	6.99	20.6	919	90
		3/24/08	ND	ND	ND	98.2
		4/28/08	ND	ND	ND	98.7
		5/20/08	7.30	21.9	1053	98
		7/30/08	7.17	22.0	1098	97.1
		7/30/08	ND	ND	ND	100
		10/15/08	ND	ND	ND	107
		10/23/08	7.23	21.4	1075	104
		2/12/09	6.98	20.6	814	94
		4/23/09	7.29	22.2	923	98
		7/22/09	7.17	22.5	1037	97.3
		10/22/09	7.17	22.4	988	96.1
		3/3/10	7.48	21.1	1030	97.1
		4/26/10	7.36	21.9	1038	97.7
		4/26/10 DUP	7.36	21.9	1038	97.9
		7/13/10	7.18	22.3	1013	88.7
		7/14/11	6.91	21.6	1019	87.3

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
COLLINS	565260	2/12/08	6.88	21.6	1470	520
		5/29/08	7.01	22.0	1459	520
		7/31/08	6.86	21.6	1502	536
		10/20/08	8.44	24.7	1510	518
		2/11/09	6.68	21.4	1147	567
		4/21/09	6.92	22.5	1150	499
		7/22/09	7.00	22.4	1413	460
		10/20/09	6.60	21.9	1432	513
		2/2/10	6.98	21.2	1439	471
		4/23/10	6.99	20.6	1472	561
		7/20/10	6.69	25.0	1420	569
COOPER	623564	2/14/08	7.02	20.8	371	33
		5/14/08	8.08	22.1	419	34.2
		7/31/08	7.81	28.4	455	33.7
		10/20/08	8.44	24.7	448	31.2
		2/11/09	7.32	19.2	333	34.3
		4/21/09	8.19	24.9	346	33.4
		7/20/09	8.45	29.8	430	32.3
		10/14/09	7.85	24.6	423	33.6
		2/1/10	7.83	13.6	433	32.4
		4/22/10	7.82	17.9	433	34.5
		7/19/10	7.98	29.3	420	35.0
		10/18/10	7.12	73.1	450	33.1
		1/19/11	8.83	18.4	410	32.1
		4/11/11	7.65	21.0	442.6	34.3
		7/11/11	7.45	24.2	426.5	32.1
		11/22/11	7.86	20.6	426.1	33.7
COOPER C	637069	3/20/08	6.93	21.3	2081	880
		5/5/08	6.78	22.4	2139	990
		7/15/08	6.86	22.3	2162	1040
		7/15/08 DUP	6.86	22.3	2162	960
		10/16/08	6.80	21.4	2078	1020
		1/27/09	6.92	20.5	1489	950
		4/14/09	6.85	21.6	1833	930
		7/14/09	6.75	22.1	1972	910
		10/12/09	6.70	21.8	1858	830
		1/27/10	7.27	19.6	1930	620
		4/22/10	6.76	19.5	1921	884
		7/21/10	6.84	22.9	1761	921
		10/20/10	7.16	20.9	1980	829
		1/17/11	6.95	20.5	1880	756
		4/11/11	6.82	21.0	1942	834
		8/26/11	6.84	21.8	1800	847
DODSON	644927	2/20/08	7.61	17.3	857	54
		5/12/08	7.11	21.1	1118	34.2
		7/24/08	7.25	21.6	1233	49.3
		10/13/08	7.15	20.5	1095	56.9
		1/22/09	7.20	20.4	892	51.8
		4/9/09	7.09	21.4	1103	50.1
		7/8/09	7.18	21.1	1153	55.9
		10/6/09	7.07	21.1	1140	49.3
		1/21/10	7.15	18.9	1227	44.6
		4/19/10	7.46	19.9	1261	48.8
		4/19/10 DUP	7.46	19.9	1261	48.6
		7/20/10	7.16	22.7	1260	47.5
		10/18/10	6.43	21.2	1260	49.3
		1/19/11	7.88	19.5	1120	57.9
		4/5/11	7.03	20.9	1300	49.0
		7/12/11	6.86	23.7	1352	52.9
		10/10/11	6.79	20.9	1280	50.9
		10/10/11 DUP	6.79	20.9	1280	49.6

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
DURAZO	NR	2/10/09	7.22	18.8	848	386
		4/20/09	7.37	22.7	901	367
		7/15/09	7.57	22.8	1102	332
		10/14/09	7.17	21.9	1048	377
		2/1/10	7.30	21.1	1105	344
		4/26/10	7.22	23.1	1099	388
		7/20/10	7.28	23.0	1070	405
		10/19/10	7.28	21.9	1112	398
		1/19/11	7.94	21.6	1050	360
		4/4/11	7.20	21.9	1119	383
		7/14/11	7.01	23.6	1101	409
		10/12/11	7.23	24.9	1000	396
EAST	599796	2/8/08	7.45	19.9	423	10.6
		5/14/08	7.31	20.9	595	14.8
		7/23/08	7.34	20.8	605	11.8
		10/14/08	7.33	20.3	531	8.9
		1/20/09	7.33	20.0	482	12.5
		4/8/09	7.32	20.6	555	15.9
		7/13/09	7.33	21.2	613	13.8
		10/8/09	7.29	20.8	593	13.4
		1/25/10	7.08	19.0	585	10.7
		4/21/10	7.42	20.5	616	14.4
		4/21/10 DUP	7.42	20.5	616	13.9
		7/14/10	7.45	22.2	577.1	12.1
		10/20/10	7.64	21.2	650	12.1
		1/18/11	7.44	21.0	615.9	13.1
		4/5/11	7.19	20.8	612.5	13.8
		7/12/11	7.23	21.7	595.1	12.7
		10/12/11	7.31	21.4	599.7	15.1
		10/12/11 DUP	7.31	21.4	599.7	15.1
EPPELE 641	805641	3/11/08	7.98	21.4	646	21.7
		5/12/08	7.21	21.7	667	24.7
		7/21/08	7.49	23.9	605	19
		10/14/08	7.56	20.4	642	21.8
		1/21/09	7.60	21.1	500	22.7
		4/8/09	7.56	22.4	538	19.7
		7/9/09	7.43	24.3	550	17.5
		7/20/10	7.58	23.3	529.2	21.1
		10/20/10	7.66	21.0	572.1	17.2
		1/17/11	7.43	21.0	576.4	17.3
		4/5/11	7.43	21.5	569.2	16.7
		7/11/11	7.27	23.5	563.1	18.6
		7/11/11 DUP	7.27	23.5	563.1	18.3
		10/12/11	7.38	20.9	500.0	19.6
FLEMING	218386	7/15/10	6.98	24.2	1390	573
FRANCO	500101	2/6/08	7.47	19.6	1301	670
		5/5/08	6.93	23.1	1557	680
		7/14/08	7.00	22.7	1586	680
		10/15/08	7.20	20.5	1560	680
		1/22/09	7.19	20.1	1178	740
		4/14/09	7.24	23.1	1416	690
		7/13/09	7.30	27.3	1532	670
		10/12/09	7.16	24.2	1493	650
		1/26/10	6.91	18.5	1529	640
		4/23/10	7.43	15.8	1559	699
		7/13/10	7.48	28.6	901.6	188

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
FULTZ	212447	2/27/08	6.76	21.1	1827	152
		4/21/2008[1]	6.74	22.0	1739	137
		5/14/2008[1]	6.88	22.3	1532	131
		6/23/2008[1]	6.74	22.0	1788	111
		7/29/2008[1]	6.74	22.2	1989	152
		8/28/2008[1]	M	21.6	1889	137
		9/23/2008[1]	6.82	21.9	1821	137
		10/22/08	6.80	21.4	1940	145
		1/21/09	6.74	21.2	1481	82
		4/9/09	6.78	21.5	1695	138
		7/13/09	7.04	23.4	1452	81
		10/8/09	7.00	21.6	1262	72
		10/8/09 DUP	7.00	21.6	1262	71.8
		1/25/10	7.11	21.8	1282	66.7
		4/20/10	7.32	21.2	1202	68.3
		7/14/10	7.75	22.2	1132	57.0
		10/20/10	7.27	20.5	1091	54.7
		1/18/11	7.23	20.4	1136	56.9
		4/5/11	7.08	22.1	1082	49.5
		4/5/11 DUP	7.08	22.1	1082	51.7
		8/25/11	6.45	23.3	940	50.6
		10/12/11	7.22	21.7	870	48.5
GALLANT	502527	2/11/08	7.46	20.2	604	17.9
		7/23/08	7.26	21.2	925	20.9
GARNER 635	587635	2/4/08	7.61	22.7	479	37.8
		5/5/08	7.26	24.9	468	35.8
		7/15/08	7.63	25.6	480	37.4
		10/15/08	7.65	24.1	472	36
		1/28/09	7.69	23.4	368	37.4
		4/15/09	7.83	24.1	412	36.9
		7/16/09	7.56	25.1	445	35.7
		10/14/09	7.58	25.2	446	36.1
		2/2/10	7.79	22.8	465	35.1
		4/22/10	7.84	23.7	464.1	36.9
		7/20/10	7.57	25.3	458.2	38.8
		10/19/10	8.23	25.4	510	37.9
		1/19/11	7.82	24.1	463.4	35.7
		1/19/11 DUP	7.82	24.1	463.4	35.7
		4/6/11	7.76	23.4	467.4	35.8
		7/15/11	7.19	25.0	457.40	37.7
		10/11/11	7.57	24.2	400.0	38
GGOOSE 547	628547	5/21/08	7.08	22.7	856	199
		8/15/08	7.02	24.8	915	178
		10/29/08	7.27	22.6	897	216
		2/24/09	7.06	23.8	851	186
		5/14/09	7.15	23.9	743	174
		8/19/09	7.20	23.8	887	175
		11/11/09	7.15	23.1	897	188
GL-03	539782	3/4/08	7.43	25.7	417	20.3
		5/22/08	7.06	25.3	647	43.3
		8/4/08	7.10	26.8	673	36.1
		11/12/08	7.21	25.2	478	34.9
		2/26/09	7.05	26.5	603	54.8
		5/5/09	6.91	28.1	682	43.9
		8/1/09	7.12	27.4	768	43.1
		11/10/09	6.96	27.0	692	49
		3/2/10	7.36	24.9	693	43.4
		3/2/2010 DUP	7.36	24.9	693	45.1
		4/9/10	6.17	25.6	556	48.1
		7/7/10	6.48	26.3	546	44.4

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
HOBAN	805290	2/27/08	6.93	22.1	1359	510
		5/7/08	6.88	22.3	1532	670
		7/14/08	6.88	23.1	1719	690
		10/16/08	6.98	22.4	1624	692
		1/28/09	6.82	21.3	1220	580
		4/15/09	7.07	21.7	1423	700
		7/14/09	6.78	22.6	1551	670
		10/15/09	6.75	22.7	1487	670
		10/15/09 DUP	6.75	22.7	1487	780
		3/2/10	7.12	19.8	1575	580
		8/31/11	6.64	22.3	1772	893
		12/14/11	6.68	20.2	1870	944
HOWARD	NR	3/4/08	7.06	20.4	1280	571
		5/8/08	6.95	21.0	1494	673
		7/14/08	7.00	21.1	1566	610
		10/15/08	7.00	20.6	1598	683
		1/28/09	6.82	21.0	1203	640
		1/28/09 DUP	6.82	21.0	1203	640
		4/15/09	7.02	21.5	1397	620
		7/15/09	7.16	21.5	1539	640
		10/12/09	6.89	21.4	1414	600
		1/27/10	7.35	20.0	1714	440
		1/27/10 DUP	7.35	20.0	1714	520
		4/21/10	7.16	20.8	1490	710
		7/19/10	6.94	24.6	1350	548
		10/18/10	6.47	21.4	1420	568
		1/17/11	7.12	19.8	1370	520
		4/11/11	7.20	20.6	1489	616
		8/26/11	7.11	23.2	1160	498
		10/11/11	7.1	21.0	1220	545
		10/11/11 DUP	7.1	21.0	1220	538
KEEFER	209744	2/6/08	7.70	19.0	378	6.8
		5/6/08	7.19	20.3	512	9
		7/16/08	7.21	21.4	539	8
		10/28/08	7.32	20.1	534	21.2
		1/28/09	7.42	19.5	356	6.1
		4/16/09	7.29	20.0	452	7.7
		7/14/09	7.35	22.1	533	7
		10/13/09	7.24	20.7	516	8.7
		1/26/10	7.15	18.8	483	7.3
		4/20/10	7.44	20.5	540.9	8.77
		7/15/10	7.50	22.2	535.8	8.84
		10/19/10	6.72	20.2	470	7.89
		1/18/11	7.45	20.6	450	7.24
		4/6/11	7.48	19.1	546.2	8.04
		7/18/11	7.19	23.2	492.3	7.79
		10/11/11	7.39	20.7	486.9	7.98
MARCELL	NR	8/26/11	7.12	25.1	1390	669
		9/26/11	6.63	22.1	1502	638
		11/22/11	7.29	21.0	1536	687
MCCONNELL 265	539265	2/20/08	7.21	21.1	1435	720
		5/6/08	6.77	21.6	1668	737
		7/15/08	6.91	22.3	1775	700
		10/15/08	6.82	21.3	1686	703
		1/28/09	6.85	21	1274	660
		4/15/09	7.04	21.3	1472	657
		7/15/09	7.01	22.2	1607	662
		10/12/09	6.77	21.7	1594	666
		1/26/10	6.71	21.5	1641	685
		4/22/10	6.95	20.1	1691	811
		7/21/10	6.86	23.5	1560	805
		10/18/10	6.97	22.0	1704	775
		1/19/11	7.38	20.6	1610	711
		4/8/11	7.04	19.8	1775	810
		7/12/11	6.60	23.7	1702	790
		10/11/11	7.18	21.8	1590	845

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
METZLER	35-71891	3/5/08	7.27	21.6	1055	317
		5/15/08	7.12	22.8	1051	329
		7/31/08	7.16	22.5	1078	317
		10/20/08	7.24	22.2	1080	305
		10/20/08 DUP	7.24	22.2	1080	326
		2/11/09	7.12	21.3	818	321
		4/20/09	7.22	23.2	845	313
		7/15/09	7.41	22.9	1031	293
		7/15/09 DUP	7.41	22.9	1031	309
		10/14/09	7.1	22.7	989	315
		2/1/10	7.22	21.7	1021	286
		5/18/10	7.56	21.0	1053	330
		7/16/10	7.20	24.1	1007	330
		10/19/10	7.15	22.6	1006	319
		1/19/11	7.55	21.1	930	298
		4/4/11	7.03	23.3	1018	323
		7/12/11	7.07	22.3	993.0	312
		10/12/11	7.27	22.1	910	301
MOORE	538847	2/20/08	7.69	22.2	362	7.1
		5/8/08	7.09	22.4	432	7.5
		7/16/08	7.34	23.0	482	9.8
		10/29/08	7.32	22.4	452	19.2
		1/29/09	7.11	21.7	328	6.6
		4/16/09	7.40	22.1	374	6.4
		7/15/09	7.44	23.3	439	5.8
		10/13/09	7.36	22.6	429	7.1
		1/26/10	7.54	19.6	423	6.3
		4/22/10	7.47	20.6	433	7.40
		7/15/10	7.44	24.1	431.3	7.54
		7/15/10 DUP	7.44	24.1	431.3	7.11
		10/19/10	6.79	22.1	430	7.14
		1/18/11	7.48	21.1	390	6.42
		4/6/11	7.39	21.4	426.3	6.70
		7/13/11	6.91	23.2	423.4	7.62
		10/11/11	7.31	22.5	419.0	7.31
NESS	509127	7/24/08	7.35	26.5	563	50.2
		10/16/08	7.47	21.4	542	48.9
		1/26/09	7.39	17.2	422	52.3
		5/11/09	7.52	28.8	472	45.9
		8/11/09	7.56	28.7	525	39.8
		11/12/09	7.53	24.5	537	51.3
		2/2/10	7.67	19.7	535	48.7
		4/21/10	7.70	23.5	518.9	42.1
		7/19/10	7.58	28.9	524.7	48.1
		1/18/11	7.49	21.8	536.6	50.1
		7/12/11	7.48	26.3	520.0	43.5
NOTEMAN	212483	2/5/08	6.70	19.9	1317	310
		5/13/08	6.67	23.0	1445	272
		7/24/08	6.68	24.2	1539	274
		10/23/08	6.57	23.2	1643	356
		1/19/09	6.38	22.9	1098	322
		4/7/09	6.56	23.8	1375	303
		7/8/09	6.55	24.6	1405	260
		10/5/09	6.48	24.1	1442	281
		1/20/10	6.79	20.3	1450	289
		4/19/10	6.81	22.4	1446	307
		7/19/10	6.77	24.6	1438	309
		10/18/10	6.08	24.6	1430	280
		1/19/11	6.84	22.3	1446	266
		4/4/11	6.72	22.9	1446	276
		4/4/11 DUP	6.72	22.9	1446	279
		7/11/11	6.78	23.9	1406	272
		10/11/11	6.96	23.4	1250	286
NSD-02	527587	2/5/08	ND	ND	ND	43
		7/7/08	8.02	21.0	609	44
NSD-03	527586	2/5/08	ND	ND	ND	70.7
		7/7/08	7.64	21.0	570	58.9

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NWC-02	562944	10/27/08	7.47	22.2	438	5.1
		2/12/09	7.58	21.6	330	6.6
		4/23/09	7.39	23.8	373	6.4
		7/21/09	7.62	23.9	408	5
		10/21/09	7.32	22.6	436	6.8
		2/3/10	7.68	19.6	423	8.5
		4/21/10	7.57	22.1	413	7.26
		7/20/10	7.36	23.7	412.5	6.87
		10/19/10	7.42	22.5	416.2	7.39
		1/18/11	7.47	23.2	390	6.43
		4/6/11	7.27	22.9	413.5	6.4
		7/15/11	7.03	22.5	416.3	7.24
		10/13/11	7.45	21.9	370	7.31
NWC-03	203321	3/4/08	ND	ND	ND	560
		6/9/08	ND	ND	ND	524
		10/27/08	7.07	21.9	1374	489
		2/12/09	7.06	20.2	1023	412
		4/23/09	6.98	21.9	1129	466
		4/23/09 DUP	6.98	21.9	1129	460
		7/21/09	7.21	22.9	1194	458
		10/21/09	6.94	21.8	1224	444
		2/3/10	7.24	20.7	1214	444
		4/21/10	7.22	21.6	1178	433
		7/20/10	7.04	22.8	1229	477
		10/19/10	7.22	21.3	1172	432
		1/18/11	7.09	22.8	1120	386
		4/6/11	7.19	21.7	1114	361
		7/15/11	6.91	21.8	1094	386
		10/13/11	7.23	21.6	960	353
NWC-04	551849	3/4/08	ND	ND	ND	240
		6/9/08	ND	ND	ND	231
		10/27/08	7.32	25.0	856	162
		1/22/09	7.23	22.9	688	184
		2/12/09	7.20	19.8	699	181
		2/12/09 DUP	7.20	19.8	699	198
		3/11/09	7.15	23.4	846	197
		4/23/09	7.21	24.1	797	188
		5/28/09	7.01	24.1	933	210
		6/24/09	6.93	25.6	792	169
		7/21/09	7.48	24.3	859	193
		8/19/09	7.12	24.5	906	183
		9/23/09	7.16	23.8	953	202
		10/21/09	7.18	24.3	875	191
		11/18/09	7.24	22.9	909	191
		12/16/09	7.28	22.3	926	193
		2/3/10	7.49	22.3	844	167
		3/8/10	7.33	22.5	880	182
		4/21/10	7.34	22.8	913	218
		5/18/10	7.68	25.8	901.3	210
		6/15/10	7.31	24.5	917.5	212
		7/20/10	7.28	28.3	873.2	188
		8/25/10	7.55	24.8	820.9	196
		9/29/10	7.38	24.5	920.2	205
		10/19/10	7.34	23.6	870.2	195
		11/4/10	7.53	23.9	853.2	197
		12/14/10	7.41	23.6	856.8	182
		1/18/11	7.31	24.1	860	194
		2/17/11	7.46	22.3	848.6	169
		3/17/11	7.44	24.1	888.1	182
		4/5/11	7.32	23.4	878.7	196
		5/11/11	7.32	23.1	868.1	175
		6/17/11	7.28	23.7	856.3	204
		7/15/11	7.06	23.5	875.1	202
		8/25/11	7.32	25.1	780	195
		9/26/11	6.56	26.2	875.4	198
		9/26/11 DUP	6.56	26.2	875.4	199
		10/13/11	7.46	23.3	770	198
		11/22/11	7.36	22.9	853.5	201
		12/8/11	7.33	22.3	872.2	207

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NWC-06	575700	3/4/08	ND	ND	ND	7.9
		6/9/08	ND	ND	ND	7.2
		10/27/08	7.35	23.3	414	6.4
		2/12/09	7.54	21.8	306	8
		4/23/09	7.30	24.5	354	7.3
		7/21/09	7.63	23.5	388	6.4
		10/21/09	7.26	23.2	413	8
		2/3/10	7.61	20.5	404	7.5
		2/3/10 DUP	7.61	20.5	404	7.4
		4/21/10	7.54	22.4	387	8.49
		7/20/10	7.33	26.0	388.6	8.59
		10/19/10	7.49	22.7	394.5	8.32
		1/18/11	7.45	23.4	380	8.24
		4/6/11	7.42	23.1	388.3	7.76
		4/6/11 DUP	7.42	23.1	388.3	7.73
		7/15/11	7.09	22.9	394.3	8.36
		10/13/11	7.51	22.3	340	8.48
OSBORN	643436	2/25/08	7.35	22.4	508	16.4
		5/13/08	7.22	22.2	576	17.2
		7/22/08	7.24	22.9	618	17.7
		7/22/08 DUP	7.24	22.9	618	17.5
		10/16/08	7.39	22.4	595	15.9
		1/20/09	7.33	22.4	469	16
		4/7/09	7.25	24.0	542	17
		8/18/09	7.16	24.6	643	17.4
		10/5/09	7.14	22.9	599	17.9
		1/21/10	7.47	19.5	591	15.6
		4/19/10	7.60	21.5	601.9	19.3
		7/12/10	7.69	24.2	594.0	18.4
		7/12/11	7.87	29.8	575.9	19.5
PALMER	578819	2/14/08	7.91	17.5	435	15.9
		5/13/08	7.92	22.9	508	16.6
		7/22/08	7.64	25.8	548	16.2
		10/16/08	7.61	17.0	527	15.9
		1/20/09	7.33	19.4	441	14.3
		4/8/09	7.65	19.1	475	15.4
		7/8/09	7.47	27.2	521	14.3
		10/5/09	7.81	22.2	538	16.2
		1/20/10	7.72	11.9	510	13.8
		4/22/10	7.97	13.6	520	16.7
		7/12/10	7.62	30.2	518.8	15.7
		10/18/10	8.13	22.1	511.9	16.5
		1/18/11	7.24	17.1	517.0	15.7
		4/5/11	8.04	19.0	499.2	15.8
		7/12/11	7.65	26.6	517.6	16.4
		10/11/11	7.85	22.0	510.4	17
PANAGAKOS	35-76413	4/21/08	6.80	20.5	1228	410
		7/21/08	6.95	21.9	1390	444
		10/13/08	6.86	21.2	1386	480
		10/13/08 DUP	6.86	21.2	1386	500
		1/22/09	6.92	19.7	997	397
		4/9/09	6.81	21.7	1228	431
		4/9/09 DUP	6.81	21.7	1228	426
		7/9/09	6.89	22.3	1469	490
		10/6/09	6.83	21.1	1328	472
		1/21/10	7.06	18.8	1291	318
		4/20/10	7.25	21.0	1528	608
		7/20/10	6.90	24.0	1560	706
		10/18/10	6.38	22.1	1530	568
		7/14/11	6.93	23.3	1070	223
		8/25/11	7.17	23.4	1170	222

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
PARRA	576415	2/11/08	7.08	21.8	1067	360
		5/15/08	7.10	21.8	1200	405
		7/31/08	7.00	22.4	1248	423
		7/31/08 DUP	7.00	22.4	1248	404
		10/20/08	7.07	22.9	1246	387
		2/13/09	7.24	22.1	965	405
		4/20/09	7.10	22.6	971	372
		7/20/09	7.17	23.9	1174	375
		10/20/09	6.80	22.5	1188	388
		2/1/10	7.07	21.5	1197	353
		4/22/10	6.91	20.3	1219	417
		7/14/10	7.13	22.2	1201	403
		7/14/10 DUP	7.13	22.2	1201	391
		10/20/10	7.51	21.4	1270	411
		1/19/11	7.49	20.8	1130	391
		4/4/11	6.90	22.6	1207	382
		7/12/11	6.76	23.7	1156	404
		10/12/11	7.44	22.3	1070	406
PIONKE	613395	2/6/08	7.53	19.9	910	394
		5/7/08	7.08	21.4	1100	391
		7/17/08	6.99	21.9	1209	420
		10/27/08	7.03	20.8	1175	460
		1/29/09	7.13	19.9	847	385
		4/14/09	7.58	20.7	1053	411
		7/13/09	7.35	21.5	1165	472
		10/7/09	7.43	21.1	1100	403
		3/8/10	7.72	18.6	1201	406
		4/26/10	7.22	21.9	1224	438
		7/15/10	7.32	22.3	1158	474
		10/18/10	7.33	21.3	1277	473
		10/18/10 DUP	7.33	21.3	1277	487
		1/19/11	7.32	19.9	1222	471
		4/8/11	7.13	19.2	1232	467
		7/12/11	7.30	23.8	1226	500
		10/11/11	6.98	20.8	1100	502
POOL	509518	2/20/08	7.95	20.9	497	134
		5/19/08	7.40	22.2	585	122
		7/31/08	7.47	22.3	599	117
		10/21/08	7.51	21.4	598	120
		2/13/09	7.62	20.8	473	141
		4/21/09	7.73	22.6	470	124
		7/20/09	7.76	22.9	579	122
		10/20/09	7.22	21.2	577	122
		2/24/10	7.56	22.4	577	110
		4/22/10	7.75	20.2	606.5	130
		7/14/10	7.38	21.7	580.9	117
		10/20/10	7.79	21.3	620	115
		1/20/11	7.71	20.5	530	112
		1/20/11 DUP	7.71	20.5	530	114
		4/6/11	7.37	21.6	567.4	114
POWER	624535	2/12/08	7.11	18.9	428	15.5
		7/22/08	7.10	21.7	795	20.2
RAMIREZ	216425	2/4/08	7.47	21.7	408	7.6
		5/6/08	7.19	22.7	405	8.3
		7/17/08	7.32	24.5	439	8.8
		10/27/08	7.41	22.2	412	7.3
		1/29/09	7.24	22.2	301	8.3
		4/16/09	7.49	22.4	344	7.6
		7/10/09	7.52	23.9	411	6.4
		10/6/09	7.30	23.8	388	8.4
		1/25/10	7.48	22.4	390	7.8
		4/21/10	7.45	22.6	397	9.04
		7/21/10	7.38	25.1	420	8.98
		10/19/10	7.91	23.7	450	10.8
		1/18/11	7.52	23.1	380	8.18
		4/11/11	7.24	23.2	408.5	8.65
		7/18/11	7.27	25.4	402.6	8.44
		10/12/11	7.40	23.3	412.7	8.55

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
RAY	803772	2/15/08	7.30	19.1	1540	159
		4/21/2008[1]	6.92	21.3	1418	125
		5/13/2008[1]	7.05	20.9	1418	123
		6/23/2008[1]	6.87	21.1	1593	130
		7/29/2008[1]	6.98	21.8	1411	120
		8/28/2008[1]	M	21.1	1519	129
		9/23/2008[1]	6.90	22.2	1519	125
		10/22/08	6.96	20.8	1604	145
		1/20/09	6.92	20.6	1355	88
		4/8/09	6.85	21.4	1759	178
		7/9/09	6.93	22.3	1434	126
		10/7/09	6.98	21.3	1288	127
		1/26/10	6.82	20.6	1352	125
		4/20/10	7.14	21.5	1318	134
		7/14/10	7.11	23.8	1313	137
		10/20/10	7.14	19.6	1368	127
		1/17/11	7.04	20.8	1451	132
		1/17/11 DUP	7.04	20.8	1451	125
		4/5/11	7.03	20.8	1387	132
		7/11/11	7.07	22.8	1345	126
		10/12/11	7.06	21.6	1250	130
ROGERS 596	573596	10/19/09	6.89	23.3	1360	590
		11/5/09	6.79	21.9	1418	540
		2/25/10	6.99	19.6	1603	520
		4/22/10	7.21	18.2	1641	710
ROGERS 803	641803	2/7/08	7.45	18.6	601	138
		4/21/2008[1]	7.32	21.4	552	128
		5/8/2008[1]	7.14	21.2	622	141
		6/23/2008[1]	7.06	22.9	660	129
		7/29/2008[1]	6.78	23.1	339	134
		8/28/2008[1]	7.18	21.6	635	128
		9/23/2008[1]	7.24	21.9	599	133
		10/22/08	7.36	21.3	650	144
		2/10/09	7.42	17.9	475	141
		4/29/09	7.52	21.9	506	211
		8/3/09	7.39	24.2	674	150
		7/16/10	7.46	23.9	643.4	169
		10/19/10	7.32	21.1	643.8	154
		10/19/10 DUP	7.32	21.1	643.8	154
		1/20/11	7.44	18.1	610	143
		4/8/11	7.30	20.2	658.2	160
		7/14/11	7.12	23.5	653.5	166
		10/12/11	7.41	21.8	665.3	175
ROGERS E	216018	2/4/08	7.40	21.0	435	4.6
		5/7/08	7.18	22.2	415	5.9
		7/17/08	7.28	23.0	446	7.1
		10/27/08	7.38	21.4	434	15.7
		2/10/09	7.51	20.7	322	5.4
		4/16/09	7.48	22.0	361	4.9
		7/13/09	7.34	22.6	420	3.8
		10/6/09	7.31	22.3	407	5.8
		1/25/10	7.52	20.6	414	5.1
		4/21/10	7.44	21.1	421	6.04
		7/21/10	7.37	23.8	430	6.47
		10/19/10	7.80	22.8	460	5.92
		1/18/11	7.39	21.5	390	5.50
		4/11/11	7.19	22.7	427.2	6.13
		7/18/11	7.12	24.3	418.5	6.00
		10/13/11	7.52	22.2	370	5.99

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
RUIZ	531770	2/5/08	7.73	18.2	445	263
		5/15/08	7.23	25.9	965	265
		7/30/08	6.99	22.1	999	243
		10/20/08	7.04	22.0	995	238
		2/12/09	6.94	20.9	748	254
		4/21/09	7.18	22.3	759	227
		8/3/09	7.05	22.9	1029	221
		10/28/09	7.09	20.6	920	227
		2/1/10	7.08	20.9	934	236
		4/26/10	7.01	22.5	920.1	240
		7/20/10	7.08	22.5	880	240
		10/20/10	7.52	20.7	970	231
		1/18/11	7.19	20.2	860	213
		4/8/11	7.09	19.8	923.3	236
		8/26/11	6.85	22.6	800	220
		10/13/11	7.19	21.5	810	230
SCHWARTZ	210865	2/8/08	7.52	21.5	506	158
		4/21/2008[1]	7.23	21.7	563	122
		5/19/2008[1]	7.38	22.4	629	130
		6/23/2008[1]	7.02	22.1	674	129
		7/29/2008[1]	7.25	22.4	955	245
		8/28/2008[1]	M	22.3	669	131
		9/23/2008[1]	7.27	22.2	607	124
		10/22/2008[1]	7.31	22.0	653	135
		11/19/2008[1]	7.38	21.1	612	140
		12/17/2008[1]	6.78	21.6	472	144
		1/29/2009[1]	7.08	22.0	475	124
		2/23/2009[1]	7.33	22.1	610	123
		4/17/09	7.46	22.2	520	120
		7/10/09	7.52	22.8	651	116
		7/10/09 DUP	7.52	22.8	651	117
		10/6/09	7.27	22.5	613	120
		1/22/10	7.79	19.5	664	133
		4/21/10	7.50	20.9	638	129
		7/21/10	7.43	22.0	650	134
		10/19/10	7.76	21.2	710	147
		1/17/11	7.15	21.2	620	116
		4/11/11	7.20	21.5	656.9	128
		7/18/11	7.36	23.7	612.4	116
		10/12/11	7.35	22.4	635.8	124
SRC	211345	4/23/08	7.57	25.8	380	19
		8/5/08	7.40	27.2	452	15.4
SWAN	NR	2/13/08	7.28	20.7	467	24.1
		5/14/08	7.24	21.2	479	23.7
		7/24/08	7.35	22.4	506	18
		10/16/08	7.32	20.7	488	19
		1/20/09	7.05	20.4	391	19.8
		4/7/09	7.21	21.5	447	19.9
		7/8/09	7.18	23.1	473	18.5
		10/5/09	7.18	21.4	496	19.7
		1/21/10	7.49	19.5	501	18.4
		4/21/10	7.42	20.3	512.1	20.9
		7/19/10	7.13	23.8	518.6	22.2
		1/18/11	7.19	17.8	483.6	18.7
		7/12/11	7.05	22.4	478.2	19.1
TM-02A	522574	3/4/08	8.67	22.6	302	12.3
		5/23/08	7.75	22.9	321	14.7
		8/15/08	7.84	26.4	369	14.4
		10/30/08	8.07	23.9	375	21.9
		2/24/09	8.10	24.8	340	20.3
		5/6/09	8.06	26.7	320	18.7
		8/12/09	8.34	26.9	398	20
		11/4/09	8.16	26.3	381	21.8
		3/10/10	8.13	25.2	351	21.4
		3/10/10 DUP	8.13	25.2	351	21.3
		4/6/10	6.96	24.6	363	25.6
		7/6/10	7.38	24.6	343	22.1
		2/10/11	6.93	20.2	359	22.9
		7/13/11	7.92	24.8	349	22.5

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
TM-03	522575	5/20/08	7.51	22.2	778	110
		8/6/08	7.08	21.6	828	97
		11/12/08	7.47	20.5	590	128
		2/26/09	7.21	21.8	737	107
		2/26/09 DUP	7.21	21.8	737	102
		5/13/09	7.47	22.2	695	109
		8/18/09	7.48	22.4	822	98
		11/10/09	7.55	21.8	761	106
		3/2/10	7.56	21.6	748	99
		4/14/10	7.55	20.6	635	103
		7/7/10	7.19	21.4	566	103
TM-06 MILLER	522695	2/27/08	7.44	19.6	457	13.9
		5/20/08	7.50	20.7	506	32.7
		8/4/08	7.41	20.7	529	31.3
		10/29/08	7.55	20.2	531	34.5
		2/26/09	7.18	20.4	574	32.7
		5/13/09	7.35	20.9	465	30.6
		8/18/09	7.50	20.9	560	30.9
		8/18/09 DUP	7.50	20.9	560	29.9
		11/12/09	7.53	20.4	530	31.1
		4/14/10	7.35	19.4	461	29.0
		7/2/10	7.24	20.1	438	29.8
		7/21/11	7.1	20.1	516	31.7
TM-07	522576	3/6/08	7.54	20.8	726	22.5
		5/22/08	6.96	20.1	385	22.9
		8/6/08	7.04	22.8	519	22.2
		11/4/08	7.76	20.6	347	31.2
		2/20/09	7.77	19.9	376	22.5
		5/13/09	7.30	22.9	559	130
		8/17/09	7.60	22.6	442	134
		11/3/09	7.85	21.8	441	134
		3/2/10	7.67	21.6	422	124
		5/25/10	7.77	21.2	398	42.6
		7/6/10	7.58	22.0	350	44.7
		2/11/11	6.87	20.1	393	24.9
		7/21/11	6.90	21.4	402	41.7
TM-08 SWAN	522817	2/13/08	7.63	24.1	511	24.1
		5/14/08	7.44	24.4	480	12.6
		7/23/08	7.76	28.1	522	12.6
TM-10 USBP	522696	12/8/11	6.95	19.6	381	16.8
TM-15 MILLER	522699	2/27/08	7.66	21.9	344	14
		5/23/08	7.54	22.1	371	14.4
		8/5/08	7.42	23.3	413	13.7
		10/28/08	7.63	22.6	387	18.6
		10/28/08 DUP	7.63	22.6	387	18.8
		2/26/09	7.57	22.0	373	14.6
		5/13/09	7.61	23.1	344	13.7
		8/17/09	7.73	23.2	398	14.2
		11/3/09	7.73	23.4	414	14.8
		2/24/10	7.66	22.8	381	14.4
		4/27/10	7.71	23.0	383.6	14.9
		7/20/10	7.77	23.0	324	14.3
		7/12/11	7.36	23.2	380	14.2
TM-16	522578	3/5/08	7.17	20.6	1351	497
		5/22/08	7.05	20.5	1304	522
		8/6/08	6.67	20.9	1410	466
		11/5/08	7.14	19.8	1162	547
		2/20/09	6.90	21.1	1292	492
		5/13/09	6.93	21.1	1179	484
		8/19/09	7.08	21.2	1354	468
		11/10/09	7.02	21.0	1310	505
		3/2/10	7.13	20.4	1313	451
		4/14/10	6.90	19.9	987	484
		7/2/10	6.81	20.8	858	474
		7/14/11	6.97	20.5	1285	511
		7/16/11	6.97	20.5	1285	513

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
TM-19A	522581	3/6/08	8.02	22.2	240	56.1
		5/22/08	7.36	24.0	501	64.5
		8/6/08	7.32	22.6	494	55.3
		11/18/08	7.79	24.3	365	66.3
		3/3/09	7.41	24.5	489	66.2
		4/22/09	7.44	24.3	494	62.5
		8/12/09	7.61	24.4	554	61.3
		11/4/09	7.47	24.2	522	63
		3/10/10	7.54	22.9	511	60.6
		4/9/10	6.49	23.0	435	66.5
		7/7/10	6.93	23.8	428	63.2
		2/14/11	6.69	21.4	511	61.9
		7/15/11	7.11	24.1	499	62.1
TM-42	562554	3/5/08	7.10	20.8	1342	482
		5/22/08	7.05	21.4	1270	483
		8/6/08	6.69	22.0	1388	467
		11/6/08	6.90	21.0	1025	477
		2/18/09	6.72	22.3	1245	429
		5/7/09	6.88	24.5	1155	430
		5/7/09 DUP	6.88	24.5	1155	445
		8/18/09	7.04	24.4	1336	428
		11/3/09	7.07	23.1	1266	430
		2/24/10	7.13	22.7	1236	390
		4/19/10	6.87	21.5	985	444
		7/2/10	6.81	23.9	827	407
		7/12/11	6.83	22.0	1205	441
TM-43	564729	3/3/08	8.57	21.0	341	2.1
		8/4/08	8.14	25.7	436	<5
TM-43A	564726	3/3/08	6.17	19.9	2788	1420
		8/4/08	6.03	21.6	3149	1320
TM-43B	565004	3/3/08	6.79	20.6	514	0.7
		8/5/08	6.89	21.0	507	31.8
		8/5/08 DUP	6.89	21.0	507	32.5
TVI 236	802236	3/20/08	7.48	20.0	488	31.3
		5/7/08	7.13	20.4	494	32.6
		7/15/08	7.39	21.9	532	37.6
		10/15/08	7.45	22.3	490	36.6
		2/11/09	7.32	20.1	391	27.6
		4/17/09	7.36	19.3	418	28.1
		4/17/09 DUP	7.36	19.3	418	28.3
		7/21/09	7.59	22.9	484	31.3
		10/19/09	7.31	22.1	513	33.2
		2/2/10	7.39	20.4	497	26
		4/23/10	7.46	20.0	504.6	30.9
		7/15/10	7.37	21.5	499.4	39.3
		7/15/11	6.80	22.4	499.6	42.9
TVI 875	568875	2/21/08	7.28	21.1	739	244
		5/7/08	7.09	21.2	833	250
		7/15/08	7.27	22.4	925	274
		10/15/08	7.26	22.1	878	245
		2/11/09	7.20	20.7	738	312
		4/17/09	7.31	21.5	690	251
		7/21/09	7.47	22.2	812	236
		10/19/09	7.23	21.9	822	247
		2/2/10	7.32	20.8	939	250
		4/23/10	7.34	20.2	930.4	294
		7/15/10	7.46	21.8	842.5	262
		10/20/10	7.79	21.9	890	242
		1/20/11	7.39	21.0	780	226
		4/11/11	7.20	21.1	820.6	235
		7/15/11	6.75	22.2	791.9	239
		10/12/11	7.35	22.7	868.5	262
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4

Table 3
Compilation of Analytical Results
For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
WEED	544535	2/14/08	7.74	21.7	323	11.1
		5/15/08	7.22	22.7	365	12.6
		7/30/08	7.42	32.0	407	11.5
		10/20/08	8.10	31.6	405	10.2
		2/13/09	7.66	21.0	303	12.6
		4/22/09	7.46	22.2	368	11.6
		7/16/09	7.50	21.9	365	10.8
		10/20/09	7.34	21.6	381	12.7
		2/1/10	7.60	20.8	382	12.2
		4/26/10	7.69	22.1	366	13.4
		7/21/10	7.36	22.1	354.9	13.6
		7/21/10 DUP	7.36	22.1	354.9	13.5
		10/19/10	7.63	21.2	378.8	11.7
		1/19/11	7.62	21.1	383.6	12.2
		4/11/11	7.44	21.5	386.6	13
		7/18/11	7.56	22.0	379.3	12.7
		10/12/11	7.02	21.7	382.8	13.3
WEISKOPF	641802	2/15/08	7.48	20.0	1072	500
		5/7/08	7.10	21.8	1251	483
		7/16/08	7.07	22.2	1399	560
		10/28/08	6.98	20.8	1401	602
		1/29/09	6.79	20.7	1014	503
		4/15/09	7.53	21.1	1164	503
		7/15/09	7.84	22.1	1317	486
		10/15/09	6.89	21.4	1216	484
		2/2/10	7.22	20.4	1319	451
		4/22/10	7.30	19.3	1329	572
		7/19/10	7.06	23.1	1330	573
		10/20/10	7.64	21.6	1360	515
		10/20/10 DUP	7.64	21.6	1360	529
		1/17/11	7.16	22.0	1270	481
		4/11/11	6.88	22.4	1365	557
		8/26/11	6.83	23.5	1200	549
		10/13/11	7.07	22.8	1299	539
ZANDER	205126	2/4/08	7.24	19.7	392	5.7
		5/6/08	7.26	21.2	404	6.3
		7/16/08	6.92	22.9	441	6.9
		10/28/08	7.40	21.2	415	15
		2/10/09	7.50	20.4	317	6
		4/16/09	7.47	21.7	352	5.5
		7/14/09	7.36	22.9	418	4.5
		10/13/09	7.41	21.7	407	6.3
		1/26/10	7.49	20.3	411	5.7
		4/2/10	7.55	20.0	416	6.70
		7/21/10	7.38	22.7	388.2	6.78
		10/19/10	6.78	21.3	430	6.56
		1/18/11	7.59	18.9	380	6.14
		1/18/11 DUP	7.59	18.9	380	6.06
		4/6/11	7.20	19.7	425.8	6.12
		7/13/11	7.29	22.9	410.10	6.43
		10/12/11	7.35	22.2	426.2	6.38

ADWR = Arizona Department of Water Resources
deg C = degrees Celsius
M = Multi-Meter Malfunction
NR = No Record
ND = No Data
SC = Specific Conductance
SU = Standard Units
µS/cm = microsiemens per centimeter
[1] Verified drinking water supply well, sample collected for sulfate trend analysis and interim action evaluation
mg/L = milligrams per liter
DUP = Blind duplicate

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ANDERSON	613396	601134.729	3468816.065	4588.51	3/20/08	145.46	4443.05
					5/5/08	145.84	4442.67
					7/14/08	146.16	4442.35
					10/15/08	146.21	4442.30
					1/27/09	145.97	4442.54
					4/14/09	146.21	4442.30
					7/14/09	146.88	4441.63
					10/12/09	147.31	4441.20
					1/27/10	147.31	4441.20
					4/21/10	147.57	4440.94
					7/19/10	148.34	4440.17
					10/19/10	147.75	4440.76
					1/17/11	148.63	4439.88
					4/11/11	149.46	4439.05
					7/14/11	149.92	4438.59
					10/11/11	150.19	4438.32
AWC-02	616586	598907.911	3468549.357	4547.64	8/27/08	121.12	4426.52
					4/8/08[2]	116	4431.64
					10/23/08[3]	115	4432.64
					4/22/09[3]	118	4429.64
					10/9/09[3]	117	4430.64
					4/23/10[3]	119	4428.64
AWC-03	616585	599090.322	3468681.898	4539.52	8/27/08	119.40	4420.12
					4/8/2008[2]	112	4427.52
					10/23/08[3]	106	4433.52
					4/22/09[3]	114	4425.52
					10/9/09[3]	116	4423.52
					4/23/10[3]	116	4423.52
AWC-04	616584	598949.929	3468717.084	4540.48	8/18/08	112.56	4427.92
					4/8/2008[2]	108	4432.48
					10/23/08[3]	111.31	4429.17
					4/22/09[3]	110	4430.48
					10/9/09[3]	110	4430.48
					4/23/10[3]	109	4431.48
AWC-05	590620	599269.904	3468541.692	4542.51	8/27/08	299.65	4242.86
					4/8/08	284	4258.51
					10/23/08	284	4258.51
					4/22/09	286	4256.51
					6/3/09	125	4417.51
					10/9/09[3]	289	4253.51
					4/23/10[3]	278	4264.51
BANKS 987	647987	606981.921	3469206.175	4648.18	2/27/08	208.00	4440.18
					5/12/08	216.30	4431.88
					7/21/08	228.95	4419.23
					10/13/08	228.20	4419.98
					1/21/09	206.64	4441.54
					4/8/09	205.50	4442.68
					7/9/09	235.68	4412.50
					10/7/09	236.71	4411.47
					2/25/10	216.98	4431.20
					4/20/10	219.35	4428.83
					7/20/10	235.60	4412.58
					10/20/10	230.24	4417.94
					1/17/11	215.28	4432.90
					4/5/11	221.68	4426.50
					7/11/11	237.39	4410.79
					10/12/11	237.34	4410.84

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BARTON 919	644919	606243.850	3469076.689	4692.36	5/12/08	113.71	4578.65
					7/23/08	113.56	4578.80
					10/16/08	113.20	4579.16
					3/11/09	112.92	4579.44
					4/10/09	112.89	4579.47
					7/7/09	112.86	4579.50
BF-01	539783	604169.077	3472151.593	4835.23	3/4/08	348.99	4486.24
					5/23/08	348.80	4486.43
					8/5/08	348.66	4486.57
					11/5/08	348.94	4486.29
					2/20/09	348.78	4486.45
					5/6/09	348.73	4486.50
					8/17/09	348.73	4486.50
					11/4/09	348.65	4486.58
					3/1/10	348.84	4486.39
					4/7/10	348.70	4486.53
					7/6/10	348.69	4486.54
					7/13/11	348.67	4486.56
BIMA	577927	606001.245	3471852.804	4802.05	5/13/08	367.31	4434.74
					8/18/08	370.24	4431.81
					10/23/08	353.96	4448.09
					1/20/09	353.07	4448.98
					4/7/09	357.76	4444.29
					7/8/09	365.44	4436.61
					10/5/09	370.11	4431.94
					4/19/10	382.25	4419.80
					7/21/10	386.89	4415.16
					10/18/10	387.39	4414.66
					1/19/11	391.47	4410.58
					4/4/11	395.22	4406.83
BMO-2008-1G	909474	606467.681	3471723.644	4805.10	8/27/08	62.05	4743.05
					11/11/08	60.95	4744.15
					2/25/09	61.43	4743.67
					4/28/09	62.01	4743.09
					8/4/09	62.96	4742.14
					10/27/09	63.61	4741.49
					2/17/10	64.51	4740.59
					4/15/10	65.05	4740.05
					7/7/10	65.83	4739.27
					2/10/11	67.74	4737.36
					7/12/11	69.37	4735.73
BMO-2008-3B	909147	602012.923	3467919.582	4583.97	7/18/08	138.05	4445.92
					11/4/08	137.95	4446.02
					2/19/09	138.19	4445.78
					5/11/09	138.46	4445.51
					8/6/09	139.02	4444.95
					10/26/09	139.60	4444.37
					3/3/10	140.03	4443.94
					4/8/10	140.07	4443.90
					7/1/10	140.70	4443.27
					2/14/11	141.41	4442.56
					7/12/11	142.21	4441.76

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-4B	910096	601099.405	3468383.430	4573.17	12/11/08	130.77	4442.40
					2/18/09	130.58	4442.59
					4/30/09	131.24	4441.93
					8/6/09	131.96	4441.21
					10/27/09	132.04	4441.13
					2/24/10	131.82	4441.35
					4/16/10	132.65	4440.52
					7/2/10	133.20	4439.97
					2/15/11	133.78	4439.39
					7/22/11	134.80	4438.37
BMO-2008-5B	909653	600438.159	3468994.715	4585.10	9/30/08	145.10	4440.00
					2/18/09	144.35	4440.75
					4/27/09	144.78	4440.32
					8/4/09	145.36	4439.74
					10/29/09	145.88	4439.22
					2/15/10	145.42	4439.68
					4/15/10	145.80	4439.30
					7/7/10	146.59	4438.51
					10/5/10	147.00	4438.10
					2/14/11	147.56	4437.54
					5/12/11	148.04	4437.06
					7/13/11	148.31	4436.79
					12/7/11	148.45	4436.65
BMO-2008-5M	909552	600445.071	3468994.282	4585.02	10/2/08	146.65	4438.37
					2/18/09	145.97	4439.05
					4/27/09	146.46	4438.56
					8/4/09	147.13	4437.89
					10/29/09	147.68	4437.34
					2/15/10	147.07	4437.95
					4/16/10	147.34	4437.68
					7/7/10	148.28	4436.74
					10/5/10	148.68	4436.34
					2/14/11	148.74	4436.28
					5/12/11	149.66	4435.36
					7/12/11	150.20	4434.82
					12/7/11	150.30	4434.72
BMO-2008-6B	909146	600366.523	3469820.644	4627.44	7/16/08	190.13	4437.31
					11/4/08	190.23	4437.21
					2/19/09	189.71	4437.73
					4/27/09	189.99	4437.45
					8/4/09	190.80	4436.64
					10/26/09	191.04	4436.40
					2/15/10	190.82	4436.62
					4/15/10	190.75	4436.69
					7/1/10	191.43	4436.01
					10/5/10	192.50	4434.94
					2/14/11	192.19	4435.25
					5/12/11	192.70	4434.74
					7/12/11	193.30	4434.14
					12/7/11	193.85	4433.59

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-6M	909019	600367.943	3469813.885	4626.90	7/10/08	191.63	4435.27
					11/4/08	190.25	4436.65
					2/20/09	190.70	4436.20
					4/28/09	190.98	4435.92
					8/4/09	191.77	4435.13
					10/26/09	192.14	4434.76
					2/15/10	191.78	4435.12
					4/15/10	191.64	4435.26
					7/1/10	192.53	4434.37
					10/5/10	192.96	4433.94
					2/14/11	193.14	4433.76
					5/12/11	193.68	4433.22
					7/12/11	194.47	4432.43
					12/7/11	194.92	4431.98
BMO-2008-7M	908794	603099.165	3470029.283	4688.33	7/14/08	238.31	4450.02
					11/6/08	239.69	4448.64
					2/18/09	238.90	4449.43
					5/11/09	239.03	4449.30
					8/6/09	239.17	4449.16
					10/27/09	239.55	4448.78
					2/17/10	239.98	4448.35
					4/15/10	240.13	4448.20
					7/6/10	240.28	4448.05
					2/14/11	241.26	4447.07
					7/15/11	241.81	4446.52
BMO-2008-8B	910097	604171.347	3471141.719	4753.25	12/5/08	297.94	4455.31
					2/19/09	297.63	4455.62
					5/5/09	297.37	4455.88
					8/10/09	297.53	4455.72
					11/9/09	297.85	4455.40
					3/3/10	298.37	4454.88
					4/16/10	298.46	4454.79
					7/1/10	298.64	4454.61
					2/11/11	299.56	4453.69
					5/13/11	299.78	4453.47
					7/15/11	300.00	4453.25
BMO-2008-8M	909711	604167.912	3471127.902	4752.45	12/9/08	299.79	4452.66
					2/19/09	298.32	4454.13
					5/5/09	298.27	4454.18
					8/10/09	298.57	4453.88
					11/5/09	298.81	4453.64
					3/3/10	299.18	4453.27
					4/16/10	299.42	4453.03
					7/1/10	299.70	4452.75
					1/24/11	300.46	4451.99
					5/13/11	301.00	4451.45
					7/15/11	300.96	4451.49
BMO-2008-9M	909255	604668.669	3471121.675	4762.61	8/8/08	287.17	4475.44
					11/5/08	287.65	4474.96
					2/26/09	285.65	4476.96
					5/12/09	285.28	4477.33
					8/17/09	286.09	4476.52
					11/3/09	286.55	4476.06
					3/4/10	287.45	4475.16
					4/6/10	287.81	4474.80
					7/1/10	288.26	4474.35
					2/10/11	289.77	4472.84
					5/13/11	290.47	4472.14
					7/15/11	290.95	4471.66

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2008-10GL	909435	605264.072	3471702.043	4792.21	8/20/08	521.75	4270.46
					11/5/08	520.50	4271.71
					2/25/09	516.72	4275.49
					5/12/09	514.68	4277.53
					8/11/09	513.23	4278.98
					11/2/09	509.43	4282.78
					3/4/10	510.88	4281.33
					4/8/10	506.31	4285.90
					7/2/10	511.80	4280.41
					7/13/11	512.16	4280.05
BMO-2008-10GU	909272	605267.551	3471731.866	4793.45	8/4/08	299.28	4494.17
					11/5/08	295.89	4497.56
					2/25/09	289.84	4503.61
					5/6/09	289.35	4504.10
					8/11/09	289.09	4504.36
					11/2/09	289.77	4503.68
					3/10/10	289.58	4503.87
					4/7/10	289.5	4503.95
					7/6/10	288.93	4504.52
					7/13/11	301.02	4492.43
BMO-2008-11G	909434	603800.995	3472626.482	4844.67	8/22/08	577.76	4266.91
					11/12/08	576.80	4267.87
					2/26/09	575.91	4268.76
					4/8/09	575.46	4269.21
					8/12/09	574.84	4269.83
					11/9/09	573.41	4271.26
					3/1/10	573.68	4270.99
					4/9/10	573.56	4271.11
					7/1/10	572.97	4271.70
					2/10/11	571.61	4273.06
					7/22/11	571.20	4273.47
BMO-2008-13B	909551	601657.612	3470076.358	4649.21	10/3/08	206.42	4442.79
					2/17/09	206.11	4443.10
					5/6/09	206.32	4442.89
					8/5/09	206.79	4442.42
					10/28/09	207.08	4442.13
					2/16/10	207.26	4441.95
					4/14/10	207.27	4441.94
					7/6/10	207.68	4441.53
					2/10/11	208.51	4440.70
					5/13/11	208.95	4440.26
					7/15/11	209.36	4439.85
BMO-2008-13M	909760	601650.495	3470040.455	4647.15	12/3/08	206.00	4441.15
					2/17/09	208.74	4438.41
					4/29/09	208.53	4438.62
					8/5/09	208.85	4438.30
					10/28/09	208.91	4438.24
					2/16/10	209.16	4437.99
					4/13/10	209.20	4437.95
					7/2/10	209.30	4437.85
					2/10/11	210.36	4436.79
					5/13/11	210.50	4436.65
					7/15/11	210.67	4436.48
BMO-2010-1M	219957	605581.263	3469935.750	4718.55	9/7/10	224.13	4494.42
					11/10/10	222.97	4495.58
					2/11/11	222.01	4496.54
					5/12/11	223.08	4495.47
					8/31/11	224.38	4494.17
					12/13/11	222.86	4495.69

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2010-2M	219958	605685.549	3470564.646	4746.16	9/7/10	264.13	4482.03
					11/11/10	263.94	4482.22
					2/10/11	264.13	4482.03
					5/13/11	266.97	4479.19
					7/14/11	268.05	4478.11
					12/13/11	270.98	4475.18
BMO-2010-3B	219970	599977.962	3468347.363	4550.59	7/28/10	115.38	4435.21
					11/10/10	115.80	4434.79
					1/20/11	115.46	4435.13
					4/7/11	116.11	4434.48
					7/13/11	117.30	4433.29
					10/13/11	117.72	4432.87
BMO-2010-3M	219969	599970.801	3468353.543	4550.53	7/30/10	118.63	4431.90
					11/10/10	118.75	4431.78
					1/20/11	118.32	4432.21
					4/7/11	119.09	4431.44
					8/25/11	120.74	4429.79
					10/13/11	120.67	4429.86
BURKE	212268	602230.087	3473029.816	4856.30	4/22/08	606.55	4249.75
					8/5/08	605.86	4250.44
					10/28/08	604.88	4251.42
					2/19/09	603.91	4252.39
					4/28/09	603.70	4252.60
					8/19/09	602.66	4253.64
COB MW-1	903992	603153.259	3469889.889	4683.26	2/22/08	232.47	4450.79
					5/20/08	233.12	4450.14
					7/30/08	233.37	4449.89
					10/23/08	233.62	4449.64
					2/12/09	234.05	4449.21
					4/21/09	234.99	4448.27
					7/22/09	234.34	4448.92
					10/22/09	234.69	4448.57
					2/4/10	235.15	4448.11
					4/20/10	235.47	4447.79
					7/13/10	235.68	4447.58
					7/14/11	236.98	4446.28
COB MW-2	903984	600973.257	3468114.836	4566.21	2/22/08	122.85	4443.36
					5/20/08	123.00	4443.21
					7/30/08	123.53	4442.68
					10/23/08	124.02	4442.19
					2/12/09	123.39	4442.82
					4/23/09	124.16	4442.05
					7/22/09	124.91	4441.30
					10/22/09	125.33	4440.88
					3/3/10	124.93	4441.28
					4/26/10	125.47	4440.74
					7/13/10	126.54	4439.67
					1/20/11	126.46	4439.75
					7/14/11	128.17	4438.04

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Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
COB MW-3	906823	599169.225	3468726.000	4538.63	2/28/08	120.84	4417.79
					5/20/08	125.00	4413.63
					7/30/08	118.50	4420.13
					10/23/08	117.93	4420.70
					2/12/09	110.91	4427.72
					4/23/09	125.13	4413.50
					7/22/09	124.09	4414.54
					10/22/09	118.03	4420.60
					3/3/10	120.14	4418.49
					4/26/10	123.12	4415.51
					7/13/10	128.60	4410.03
					7/14/11	132.41	4406.22
COB WL	593116	606357.506	3472502.012	4832.06	2/22/08	56.50	4775.56
					5/20/08	57.50	4774.56
					7/30/08	58.64	4773.42
					10/23/08	58.76	4773.30
					2/12/09	58.89	4773.17
					4/23/09	59.73	4772.33
					7/22/09	61.27	4770.79
					10/22/09	62.82	4769.24
					3/3/10	65.24	4766.82
					4/26/10	66.13	4765.93
					7/13/10	67.52	4764.54
					7/14/11	73.86	4758.20
COLLINS	565260	602551.286	3471341.335	4733.72	2/12/08	289.47	4444.25
					5/29/08	288.53	4445.19
					7/31/08	290.08	4443.64
					10/20/08	290.15	4443.57
					4/21/09	290.66	4443.06
					7/20/09	290.78	4442.94
					10/20/09	290.52	4443.20
					2/2/10	291.64	4442.08
					4/23/10	291.96	4441.76
					7/20/10	292.21	4441.51
COOPER C	637069	601349.987	3468913.011	4599.14	3/4/08	155.08	4444.06
					5/5/08	155.34	4443.80
					7/15/08	156.01	4443.13
					10/16/08	155.85	4443.29
					1/27/09	155.62	4443.52
					4/14/09	155.86	4443.28
					7/14/09	156.50	4442.64
					10/12/09	156.89	4442.25
					1/27/10	157.03	4442.11
					4/22/10	157.31	4441.83
					7/21/10	158.00	4441.14
					10/20/10	158.41	4440.73
					1/17/11	158.37	4440.77
					4/11/11	158.74	4440.40
					8/26/11	159.51	4439.63
					10/13/11	159.81	4439.33

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
DODSON	644927	605594.560	3469063.772	4686.34	5/12/08	81.38	4604.96
					7/24/08	82.20	4604.14
					10/13/08	81.82	4604.52
					1/22/09	82.33	4604.01
					4/9/09	82.84	4603.50
					7/8/09	86.88	4599.46
					10/6/09	87.27	4599.07
					1/21/10	88.54	4597.80
					4/19/10	89.53	4596.81
					7/20/10	90.79	4595.55
					10/18/10	90.33	4596.01
					1/19/11	90.34	4596.00
					4/5/11	91.05	4595.29
					7/12/11	92.07	4594.27
					10/10/11	93.11	4593.23
DOUGLASS 791	592791	607632.993	3470222.677	4703.27	2/13/08	22.11	4681.16
					5/13/08	24.60	4678.67
					7/22/08	27.00	4676.27
					10/16/08	23.60	4679.67
					1/19/09	26.51	4676.76
					4/8/09	28.53	4674.74
					7/7/09	31.04	4672.23
					10/5/09	31.49	4671.78
					1/21/10	34.55	4668.72
					4/19/10	36.40	4666.87
					7/12/10	36.74	4666.53
					1/18/11	25.96	4677.31
DOUGLASS 792	592792	607607.541	3469829.115	4681.73	2/13/08	87.76	4593.97
					5/13/08	87.21	4594.52
					7/22/08	86.90	4594.83
					10/16/08	86.45	4595.28
					1/20/09	86.26	4595.47
					4/8/09	86.04	4595.69
					7/7/09	86.16	4595.57
					10/5/09	86.19	4595.54
					1/21/10	86.45	4595.28
					4/19/10	87.19	4594.54
					7/12/10	87.55	4594.18
					1/18/11	87.80	4593.93
					7/12/11	88.38	4593.35
EAST	599796	607076.365	3468712.215	4626.01	2/8/08	50.20	4575.81
					5/14/08	52.45	4573.56
					7/23/08	52.16	4573.85
					10/14/08	52.19	4573.82
					1/20/09	50.52	4575.49
					4/8/09	51.91	4574.10
					7/13/09	56.93	4569.08
					10/8/09	60.95	4565.06
					1/25/10	59.35	4566.66
					4/21/10	58.88	4567.13
					7/14/10	61.86	4564.15
					10/20/10	61.20	4564.81
					1/18/11	59.79	4566.22
					4/5/11	59.73	4566.28
					7/12/11	63.79	4562.22
					10/12/11	63.64	4562.37

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Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
EPPELE 641	805641	607165.354	3469229.942	4642.86	3/11/08	29.52	4613.34
					5/12/08	30.64	4612.22
					7/21/08	25.59	4617.27
					10/14/08	24.53	4618.33
					1/21/09	27.35	4615.51
					4/8/09	29.08	4613.78
					7/9/09	31.51	4611.35
					10/7/09	29.92	4612.94
					7/20/10	50.38	4592.48
					10/20/10	48.88	4593.98
					1/17/11	51.13	4591.73
					4/5/11	53.81	4589.05
					7/11/11	56.82	4586.04
					10/12/11	37.62	4605.24
FLEMING	218386	605565.701	3469342.523	4693.68	2/18/09	299.30	4394.38
					4/8/09	301.81	4391.87
					7/7/09	304.60	4389.08
					10/6/09	307.84	4385.84
					1/21/10	311.73	4381.95
					4/20/10	315.26	4378.42
					7/15/10	318.32	4375.36
					11/4/10	349.62	4344.06
					1/19/11	356.89	4336.79
					7/12/11	364.72	4328.96
FULTZ	212447	607153.306	3469063.892	4642.92	10/22/08	40.59	4602.33
					1/21/09	40.66	4602.26
					4/9/09	42.88	4600.04
					7/13/09	54.94	4587.98
					10/8/09	56.16	4586.76
					1/25/10	53.45	4589.47
					4/20/10	63.82	4579.10
					7/14/10	119.86	4523.06
GARNER 557	558557	602659.240	3468962.415	4638.45	2/21/08	191.05	4447.40
					5/5/08	191.28	4447.17
					7/15/08	191.44	4447.01
					10/16/08	191.83	4446.62
					1/28/09	191.92	4446.53
					4/15/09	192.09	4446.36
					7/16/09	192.52	4445.93
					10/14/09	192.82	4445.63
					2/2/10	193.33	4445.12
					4/22/10	193.49	4444.96
					7/20/10	193.93	4444.52
					10/19/10	194.29	4444.16
					1/19/11	194.61	4443.84
					4/6/11	194.86	4443.59
					7/15/11	195.25	4443.20
					10/11/11	195.72	4442.73

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
GARNER 635	587635	602665.352	3468967.902	4640.74	2/4/08	193.20	4447.54
					5/5/08	195.90	4444.84
					7/15/08	193.58	4447.16
					10/15/08	194.35	4446.39
					1/28/09	194.80	4445.94
					4/15/09	195.54	4445.20
					7/16/09	194.88	4445.86
					10/14/09	196.36	4444.38
					2/2/10	195.32	4445.42
					4/22/10	196.01	4444.73
					8/25/10	195.57	4445.17
					10/19/10	225.83	4414.91
					1/19/11	196.89	4443.85
					4/6/11	197.40	4443.34
					7/15/11	198.07	4442.67
					10/11/11	197.75	4442.99
GGOOSE 547	628547	606256.657	3469820.260	4717.11	5/21/08	220.91	4496.20
					8/15/08	238.48	4478.63
					10/29/08	235.90	4481.21
					2/24/09	236.13	4480.98
					5/14/09	236.17	4480.94
					8/19/09	236.01	4481.10
					8/19/09	236.01	4481.10
					11/11/09	237.66	4479.45
					3/9/10	238.84	4478.27
					4/27/10	239.17	4477.94
GL-03	539782	604386.940	3473747.943	4924.31	5/22/08	660.15	4264.16
					8/4/08	659.79	4264.52
					12/2/08	658.25	4266.06
					2/26/09	658.62	4265.69
					5/5/09	657.23	4267.08
					8/12/09	656.56	4267.75
					8/12/09	656.56	4267.75
					11/10/09	655.31	4269.00
					3/2/10	655.52	4268.79
					4/9/10	655.35	4268.96
					7/7/10	655.05	4269.26
GOAR RANCH	610695	602454.751	3468892.471	4631.13	2/21/08	183.90	4447.23
					5/5/08	188.11	4443.02
					7/16/08	184.41	4446.72
					10/22/08	184.68	4446.45
					1/27/09	184.87	4446.26
					4/15/09	184.96	4446.17
					7/7/09	185.36	4445.77
					10/12/09	185.72	4445.41
					2/2/10	186.25	4444.88
					4/22/10	186.44	4444.69
					7/13/10	186.76	4444.37
					1/19/11	187.52	4443.61
					7/12/11	188.24	4442.89

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
HOBAN	805290	601705.848	3468880.329	4597.21	2/27/08	163.05	4434.16
					5/7/08	163.28	4433.93
					7/14/08	163.87	4433.34
					10/16/08	163.95	4433.26
					1/28/09	163.82	4433.39
					4/15/09	164.16	4433.05
					7/14/09	164.59	4432.62
					10/15/09	165.00	4432.21
					3/2/10	165.32	4431.89
					5/18/10	165.71	4431.50
					7/20/10	166.17	4431.04
					10/19/10	166.45	4430.76
					8/31/11	167.76	4429.45
					12/14/11	168.13	4429.08
HOWARD[4]	NR	601281.159	3468770.377	4593.91	3/4/08	150.10	4443.81
					5/8/08	150.70	4443.21
					7/14/08	150.91	4443.00
					10/15/08	150.67	4443.24
					1/28/09	150.67	4443.24
					4/15/09	151.15	4442.76
					7/15/09	151.76	4442.15
					10/12/09	152.08	4441.83
					1/27/10	152.20	4441.71
					4/21/10	152.30	4441.61
					7/19/10	153.16	4440.75
					10/18/10	153.53	4440.38
					1/17/11	153.51	4440.40
					4/11/11	154.24	4439.67
					8/26/11	154.79	4439.12
					10/11/11	155.02	4438.89
KEEFER	209744	599879.175	3468119.015	4572.03	2/6/08	134.67	4437.36
					5/6/08	135.28	4436.75
					7/16/08	136.24	4435.79
					10/28/08	135.87	4436.16
					1/28/09	134.88	4437.15
					4/16/09	135.00	4437.03
					7/14/09	136.07	4435.96
					10/13/09	136.67	4435.36
					1/26/10	136.26	4435.77
					4/20/10	136.26	4435.77
					7/15/10	137.29	4434.74
					10/19/10	137.68	4434.35
					1/18/11	137.42	4434.61
					4/6/11	137.91	4434.12
					7/18/11	140.39	4431.64
					10/11/11	141.68	4430.35

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
MCCONNELL 265	539265	601463.094	3468840.139	4600.70	2/20/08	156.15	4444.55
					5/6/08	156.40	4444.30
					7/15/08	157.07	4443.63
					11/19/08	157.17	4443.53
					1/28/09	156.70	4444.00
					4/15/09	157.22	4443.48
					7/15/09	157.59	4443.11
					10/12/09	158.13	4442.57
					1/26/10	158.35	4442.35
					4/22/10	158.68	4442.02
					7/21/10	159.37	4441.33
					10/18/10	159.63	4441.07
					1/19/11	159.69	4441.01
					4/8/11	159.10	4441.60
					7/12/11	160.77	4439.93
					10/11/11	161.17	4439.53
METZLER	35-71891	602091.308	3471381.176	4728.53	3/5/08	288.30	4440.23
					5/15/08	286.53	4442.00
					7/31/08	286.82	4441.71
					10/20/08	287.09	4441.44
					2/11/09	287.74	4440.79
					4/20/09	287.47	4441.06
					7/15/09	287.58	4440.95
					10/14/09	287.99	4440.54
					2/1/10	288.38	4440.15
					5/18/10	288.65	4439.88
					7/16/10	288.88	4439.65
					10/19/10	289.09	4439.44
					1/19/11	289.54	4438.99
					4/4/11	289.87	4438.66
					7/12/11	289.98	4438.55
					10/12/11	290.47	4438.06
NESS	509127	607866.391	3471419.494	4761.23	7/24/08	557.90	4203.33
					10/16/08	549.30	4211.93
					2/25/09	536.40	4224.83
					5/11/09	544.64	4216.59
					8/11/09	566.87	4194.36
					11/12/09	537.34	4223.89
					2/2/10	531.85	4229.38
					4/21/10	568.11	4193.12
					7/19/10	573.02	4188.21
					1/18/11	541.80	4219.43
					7/12/11	597.71	4163.52
NOTEMAN	212483	606053.800	3471576.400	4800.68	5/13/08	339.77	4460.91
					8/27/08	344.34	4456.34
					11/22/08	322.26	4478.42
					2/25/09	327.54	4473.14
NSD-02	527587	598820.051	3468821.474	4531.38	10/7/09	101.17	4430.21
					3/16/10	99.43	4431.95
					5/25/10	101.63	4429.75
					8/25/10	102.38	4429.00
					3/17/11	102.68	4428.70
					6/17/11	109.29	4422.09
					12/7/11	104.41	4426.97

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NSD-03	527586	598070.538	3468694.259	4518.28	10/7/09	85.62	4432.66
					3/16/10	83.51	4434.77
					5/25/10	84.49	4433.79
					8/25/10	85.70	4432.58
					3/17/11	86.76	4431.52
					6/17/11	88.76	4429.52
					12/7/11	89.30	4428.98
NWC-02	562944	600177.435	3467474.673	4600.44	10/27/08	160.51	4439.93
					4/29/09[5]	160.5	4439.94
					9/10/09[5]	155	4445.44
					4/2010[5]	131	4469.44
NWC-03	203321	601153.857	3468350.838	4574.99	11/3/08	131.48	4443.51
					4/29/09[5]	130	4444.99
					9/10/09[5]	126	4448.99
					10/9/09[5]	125	4449.99
NWC-03 CAP[6]	627684	601151.704	3468343.653	4572.82	2/2/09	130.03	4442.79
					4/23/09	130.62	4442.20
					7/21/09	131.26	4441.56
					10/21/09	131.60	4441.22
					2/3/10	131.34	4441.48
					4/21/10	131.86	4440.96
					7/20/10	131.50	4441.32
					1/18/11	132.91	4439.91
					7/15/11	134.42	4438.40
					10/13/11	134.73	4438.09
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09[5]	328	4362.77
					9/10/09[5]	324	4366.77
					4/2010[5]	216	4474.77
NWC-06	575700	599822.821	3467749.954	4592.50	4/29/09[5]	156	4436.50
					9/10/09[5]	155	4437.50
					10/9/09[5]	148	4444.50
					4/2010[5]	140	4452.50
OSBORN	643436	607031.823	3470270.548	4711.95	5/13/08	68.65	4643.30
					8/5/08	69.53	4642.42
					10/16/08	69.83	4642.12
					1/20/09	69.23	4642.72
					4/7/09	69.60	4642.35
					7/8/09	96.61	4615.34
					10/5/09	75.09	4636.86
					1/21/10	75.37	4636.58
					4/19/10	81.59	4630.36
					7/12/10	83.00	4628.95
					7/12/11	74.60	4637.35
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	1/22/09	155.28	4536.12
					4/9/09	156.15	4535.25
					7/9/09	161.61	4529.79
					10/6/09	167.20	4524.20
					1/21/10	166.92	4524.48
					4/20/10	167.11	4524.29
					7/20/10	171.78	4519.62
					10/18/10	176.39	4515.01
					7/14/11	173.78	4517.62
					8/25/11	172.89	4518.51

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
PARRA	576415	602170.716	3471263.549	4727.21	5/15/08	279.78	4447.43
					8/18/08	280.06	4447.15
					11/3/08	280.39	4446.82
					2/13/09	280.75	4446.46
					4/28/09	280.88	4446.33
					7/20/09	280.99	4446.22
PIONKE	613395	601045.471	3468960.981	4592.13	7/17/08	149.88	4442.25
					11/3/08	150.99	4441.14
					2/25/09	149.68	4442.45
					4/14/09	150.01	4442.12
					7/13/09	150.47	4441.66
					10/7/09	150.96	4441.17
					3/8/10	151.11	4441.02
					4/26/10	151.32	4440.81
					7/15/10	151.90	4440.23
					10/18/10	152.38	4439.75
					1/19/11	152.38	4439.75
					4/8/11	153.04	4439.09
					7/12/11	153.57	4438.56
					10/11/11	153.87	4438.26
POOL	509518	599683.603	3470013.823	4639.09	2/20/08	204.22	4434.87
					5/19/08	204.72	4434.37
					7/31/08	205.56	4433.53
					10/21/08	205.06	4434.03
					2/13/09	204.74	4434.35
					4/21/09	204.87	4434.22
					7/20/09	205.69	4433.40
					10/20/09	206.06	4433.03
					2/24/10	205.59	4433.50
					4/22/10	205.48	4433.61
					7/14/10	206.58	4432.51
					10/20/10	206.74	4432.35
RAMIREZ	216425	599730.649	3467584.363	4596.61	10/27/08	159.45	4437.16
					1/29/09	158.74	4437.87
					4/16/09	158.66	4437.95
					7/10/09	159.64	4436.97
					10/6/09	160.36	4436.25
					1/25/10	160.10	4436.51
					4/21/10	159.96	4436.65
					7/21/10	161.05	4435.56
					10/19/10	161.23	4435.38
					1/18/11	161.22	4435.39
					4/11/11	161.48	4435.13
					7/18/11	162.39	4434.22
					10/12/11	163.04	4433.57

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
RAY	803772	607083.422	3469195.147	4647.91	2/15/08	40.85	4607.06
					5/13/08	43.82	4604.09
					7/29/08	45.25	4602.66
					10/22/08	44.54	4603.37
					1/20/09	44.31	4603.60
					4/8/09	44.68	4603.23
					7/9/09	48.99	4598.92
					10/7/09	49.87	4598.04
					1/26/10	47.61	4600.30
					4/20/10	49.78	4598.13
					7/14/10	51.36	4596.55
					10/20/10	49.85	4598.06
					1/17/11	50.51	4597.40
					4/5/11	51.84	4596.07
					7/11/11	55.74	4592.17
					10/12/11	53.63	4594.28
ROGERS 596	573596	601001.503	3468491.639	4577.35	11/11/09	135.46	4441.89
					2/25/10	135.89	4441.46
					4/22/10	135.62	4441.73
					7/16/10	136.63	4440.72
					10/19/10	136.61	4440.74
					1/20/11	134.21	4443.14
					4/8/11	137.68	4439.67
					7/14/11	138.09	4439.26
					10/12/11	138.09	4439.26
ROGERS 750[7]	641750	600977.690	3468417.386	4579.02	2/7/08	129.85	4449.17
					7/29/08	131.86	4447.16
					10/22/08	132.08	4446.94
					2/10/09	130.62	4448.40
					4/29/09	131.33	4447.69
					8/3/09	135.07	4443.95
ROGERS E	216018	600449.648	3467636.029	4590.66	7/17/08	149.65	4441.01
					11/3/08	150.15	4440.51
					2/10/09	149.02	4441.64
					4/16/09	149.53	4441.13
					7/13/09	150.31	4440.35
					10/6/09	150.76	4439.90
					1/25/10	150.64	4440.02
					4/21/10	150.97	4439.69
					8/25/10	151.15	4439.51
					10/19/10	151.57	4439.09
					10/13/11	153.79	4436.87
RUIZ	531770	602857.357	3471424.219	4735.18	2/5/08	293.29	4441.89
					5/15/08	293.57	4441.61
					7/30/08	293.86	4441.32
					10/20/08	294.18	4441.00
					2/12/09	294.62	4440.56
					4/21/09	294.66	4440.52
					8/3/09	294.98	4440.20
					10/28/09	295.33	4439.85
					2/1/10	295.70	4439.48
					4/26/10	295.96	4439.22
					4/8/11	297.20	4437.98

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
SCHWARTZ[8]	210865	600811.014	3468269.622	4564.49	2/8/08	121.80	4442.69
					5/19/08	123.49	4441.00
					7/29/08	122.64	4441.85
					10/22/08	123.39	4441.10
					1/29/09	122.87	4441.62
					4/17/09	123.53	4440.96
					7/10/09	124.15	4440.34
					10/6/09	124.55	4439.94
					1/22/10	124.32	4440.17
					4/21/10	124.65	4439.84
					7/21/10	125.80	4438.69
					10/19/10	126.30	4438.19
					1/17/11	125.35	4439.14
					4/11/11	127.50	4436.99
					7/18/11	127.67	4436.82
					10/12/11	127.51	4436.98
STEPHENS	808560	606981.766	3469072.799	4651.22	5/13/08	44.94	4606.28
					8/5/08	46.61	4604.61
					10/16/08	46.60	4604.62
					1/21/09	47.19	4604.03
					4/8/09	48.45	4602.77
					7/7/09	49.41	4601.81
					10/7/09	50.33	4600.89
					1/26/10	51.13	4600.09
					4/20/10	51.24	4599.98
					7/14/10	51.91	4599.31
					1/18/11	52.98	4598.24
					7/11/11	54.44	4596.78
SUNBELT	201531	605998.250	3471735.149	4806.52	2/6/08	352.10	4454.42
					5/15/08	358.97	4447.55
					8/5/08	Dry	<4426
					10/16/08	347.00	4459.52
					1/21/09	344.78	4461.74
					4/10/09	349.64	4456.88
					7/8/09	356.99	4449.53
					10/5/09	Dry	<4426
					1/21/10	Dry	<4426
					4/19/10	Dry	<4426
					7/12/10	Dry	<4426
					1/19/11	Dry	<4426
					8/25/11	Dry	<4426
SWAN	NR	607378.547	3470648.298	4716.59	2/13/08	26.50	4690.09
					5/14/08	30.69	4685.90
					7/24/08	32.06	4684.53
					10/16/08	27.53	4689.06
					1/20/09	29.77	4686.82
					4/7/09	31.47	4685.12
					7/8/09	33.61	4682.98
					10/5/09	35.12	4681.47
					1/21/10	36.64	4679.95
					4/21/10	38.06	4678.53
					7/19/10	39.67	4676.92
					1/18/11	35.06	4681.53
					7/12/11	39.32	4677.27

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TM-02A	522574	604152.059	3472008.794	4808.43	3/4/08	346.62	4461.81
					5/23/08	346.16	4462.27
					8/15/08	353.91	4454.52
					10/30/08	349.45	4458.98
					2/24/09	348.64	4459.79
					5/6/09	349.38	4459.05
					8/12/09	349.13	4459.30
					11/4/09	348.97	4459.46
					3/10/10	348.19	4460.24
					4/6/10	353.86	4454.57
					7/6/10	349.20	4459.23
					2/10/11	347.60	4460.83
					7/13/11	348.14	4460.29
TM-03	522575	606366.130	3473711.046	4897.85	3/12/08	127.14	4770.71
					5/20/08	127.40	4770.45
					8/6/08	128.02	4769.83
					11/12/08	128.00	4769.85
					2/26/09	126.94	4770.91
					5/13/09	113.86	4783.99
					8/18/09	128.80	4769.05
					11/10/09	125.38	4772.47
					3/2/10	128.02	4769.83
					4/14/10	130.56	4767.29
					7/7/10	131.25	4766.60
TM-06 MILLER	522695	606055.975	3468376.658	4707.88	2/26/08	158.78	4549.10
					5/20/08	158.76	4549.12
					8/4/08	158.80	4549.08
					10/29/08	158.85	4549.03
					2/16/09	159.28	4548.60
					5/13/09	158.81	4549.07
					8/18/09	158.91	4548.97
					11/12/09	158.96	4548.92
					3/8/10	158.99	4548.89
					4/14/10	159.02	4548.86
					7/2/10	159.13	4548.75
					7/21/11	159.88	4548.00
TM-16	522578	605588.075	3469842.199	4717.71	3/5/08	81.00	4636.71
					5/22/08	81.24	4636.47
					8/6/08	81.65	4636.06
					11/5/08	81.75	4635.96
					2/26/09	81.88	4635.83
					5/13/09	82.01	4635.70
					8/19/09	82.37	4635.34
					11/10/09	82.83	4634.88
					3/2/10	83.09	4634.62
					4/14/10	83.22	4634.49
					7/2/10	83.51	4634.20
					7/14/11	80.41	4637.30

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TM-19A	522581	602458.710	3469197.426	4645.87	3/6/08	199.85	4446.02
					5/22/08	199.50	4446.37
					8/6/08	199.19	4446.68
					11/18/08	199.46	4446.41
					3/3/09	199.81	4446.06
					4/22/09	200.57	4445.30
					8/12/09	201.46	4444.41
					11/4/09	201.16	4444.71
					3/10/10	201.34	4444.53
					4/9/10	201.55	4444.32
					7/7/10	202.35	4443.52
					2/14/11	203.00	4442.87
					7/15/11	203.30	4442.57
TM-42	562554	603698.271	3469104.903	4666.67	3/5/08	211.04	4455.63
					5/22/08	210.98	4455.69
					8/6/08	211.55	4455.12
					11/6/08	207.05	4459.62
					2/18/09	212.31	4454.36
					5/7/09	212.37	4454.30
					8/18/09	212.77	4453.90
					11/3/09	213.05	4453.62
					2/24/10	213.36	4453.31
					4/19/10	213.51	4453.16
					7/2/10	213.52	4453.15
					7/12/11	214.62	4452.05
TVI 236	802236	600552.215	3467978.431	4561.98	5/7/08	123.30	4438.68
					7/15/08	121.55	4440.43
					10/15/08	122.35	4439.63
					2/11/09	121.28	4440.70
					4/17/09	122.73	4439.25
					7/21/09	123.96	4438.02
					10/19/09	123.88	4438.10
					2/2/10	122.26	4439.72
					4/23/10	122.70	4439.28
					7/15/10	125.08	4436.90
					7/15/11	127.23	4434.75
TVI 713	567713	600729.095	3468412.946	4567.22	5/7/08	127.10	4440.12
					7/14/08	126.30	4440.92
					10/15/08	130.00	4437.22
					2/11/09	149.87	4417.35
					4/17/09	126.73	4440.49
					7/21/09	127.36	4439.86
					10/19/09	127.79	4439.43
					2/2/10	126.71	4440.51
					4/23/10	127.53	4439.69
					7/15/10	129.14	4438.08
					10/20/10	130.84	4436.38
					1/20/11	134.36	4432.86
					4/11/11	135.72	4431.50
					7/15/11	131.61	4435.61
					10/12/11	130.33	4436.89

Table 4
Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation[1] (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
WEISKOPF	641802	601154.951	3468658.855	4586.89	2/15/08	143.31	4443.58
					5/7/08	143.90	4442.99
					7/16/08	144.22	4442.67
					10/28/08	145.81	4441.08
					1/29/09	143.99	4442.90
					4/15/09	144.38	4442.51
					7/15/09	144.99	4441.90
					10/15/09	145.66	4441.23
					2/2/10	145.28	4441.61
					4/22/10	145.72	4441.17
					7/19/10	146.46	4440.43
					10/20/10	147.11	4439.78
					1/17/11	146.72	4440.17
					4/11/11	146.31	4440.58
					8/26/11	148.06	4438.83
					10/13/11	148.30	4438.59
ZANDER	205126	599678.880	3467998.486	4580.94	2/4/08	144.85	4436.09
					5/6/08	145.33	4435.61
					7/16/08	146.40	4434.54
					10/28/08	146.01	4434.93
					2/10/09	144.83	4436.11
					4/16/09	144.94	4436.00
					7/14/09	146.14	4434.80
					10/13/09	146.77	4434.17
					1/26/10	146.34	4434.60
					4/22/10	146.27	4434.67
					7/21/10	147.81	4433.13
					10/19/10	147.80	4433.14
					1/18/11	147.52	4433.42
					4/6/11	147.84	4433.10
					7/13/11	148.91	4432.03
					10/12/11	149.50	4431.44

ADWR = Arizona Department of Water Resources

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

ft amsl = feet above mean sea level

NR = No Record

[1] Survey Source: Survey conducted by Gilbert Technical Service, Inc and Arizona Land Sepcialists, Inc

[2] Measuring point elevation for third quarter 2008 changed to reflect well survey completed on September 18, 2008

[3] Depth to Water measurement provided by Arizona Water Company

[4] Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

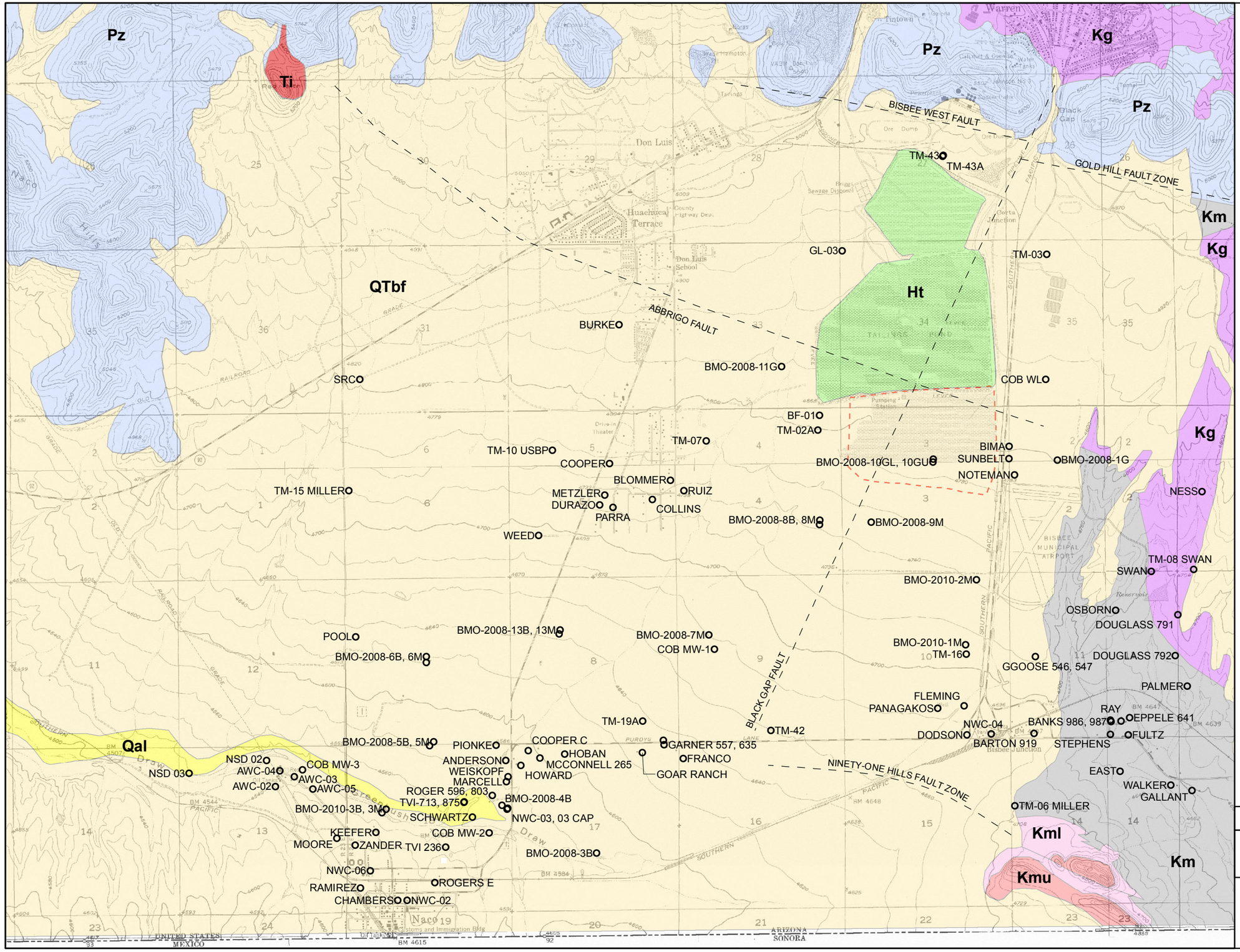
[5] Depth to Water measurement provided by Naco Water Company

[6] Measuring point elevation for second quarter 2009 changed to reflect well survey completed on April 27, 2009

[7] Well previously identified as ROGERS 803

[8] Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

FIGURES



Legend

- Sampling / Water Level Location
  Not all wells shown are currently sampled. Current sampling locations are based on the Revised Monitoring Program approved by ADEQ in 2010.
- Former Evaporation Ponds

Geologic Unit

- Ht - Holocene Tailings
- Qal - Quaternary Alluvium
- QTbf - Quaternary-Tertiary Basin Fill
- Ti - Tertiary Intrusive
- Undifferentiated Bisbee Group
  - Kc - Cintura Formation
  - Kmu - Upper Mural Limestone
  - Kml - Lower Mural Limestone
  - Km - Morita Formation
- Kg - Glance Conglomerate
- Pz - Paleozoic Sedimentary Formations

Scale

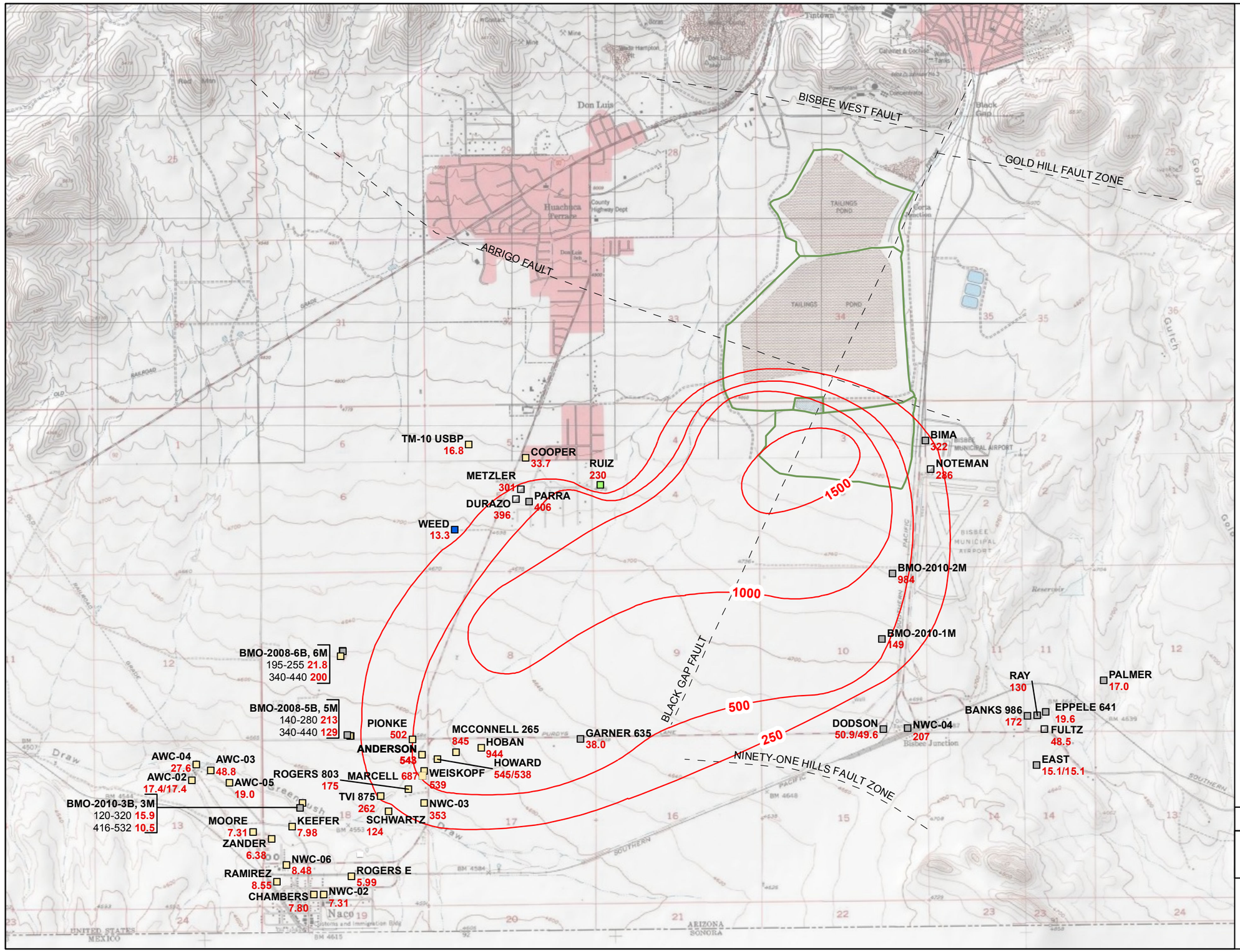
0 1,500 3,000 6,000 Feet

Notes:
Projection: UTM Zone 12N NAD83

Date	File ID
12/13/11	055038-009C

CLEAR CREEK ASSOCIATES

Figure 1
Generalized Geology and Well Locations



Legend

- POOL Well ID
- 115 Sulfate Concentration (mg/L)
- Sulfate Concentration Contour (mg/L)
- Faults (inferred)
- CTSA Facility

Co-located Wells
- Well ID
- Screen (ft bls): SO4 Concentration (mg/L)

Screened Formation
- Basin Fill
- Basin Fill and Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group - Estimated
- Undifferentiated Bisbee Group and Glance Conglomerate
- Glance Conglomerate
- Glance Conglomerate-Estimated

Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

Garner 635 and BMO-2010-1M not used for contouring. Sulfate concentration contours are based on third quarter 2011 and adjusted for current data.

Scale (Feet)

0 3,000 6,000

Notes:

Projection: UTM Zone 12N NAD83

Date	File ID
12/20/11	055038-162

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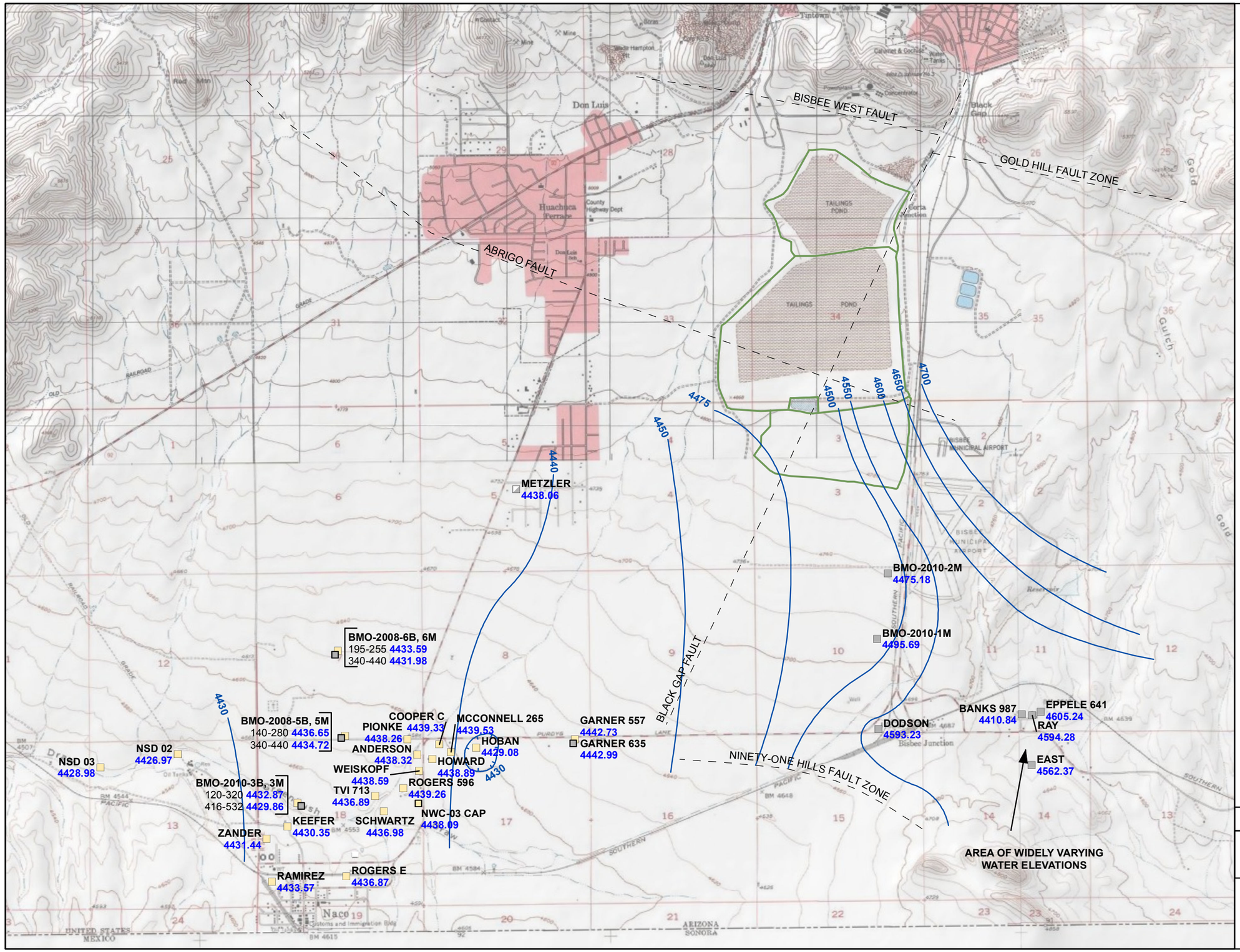
Figure 2
Sulfate Concentrations in Groundwater for Fourth Quarter 2011



Legend

- POOL — Well ID
- 4432.35 — Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (dashed where inferred)
- Groundwater Depression
- Faults (inferred)
- CTSA Facility

Co-located Wells
- Well ID
- Screen (ft bgs): Water Elevation (ft amsl)

Screened Formation
- Basin Fill
- Basin Fill and Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group - Estimated
- Undifferentiated Bisbee Group and Glance Conglomerate
- Glance Conglomerate
- Glance Conglomerate-Estimated

Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

BANKS 987 and EPPELE 641 not used for contouring. Groundwater elevation contours are based on third quarter 2011 data and adjusted based on current data.

Scale (Feet)

0 3,000 6,000

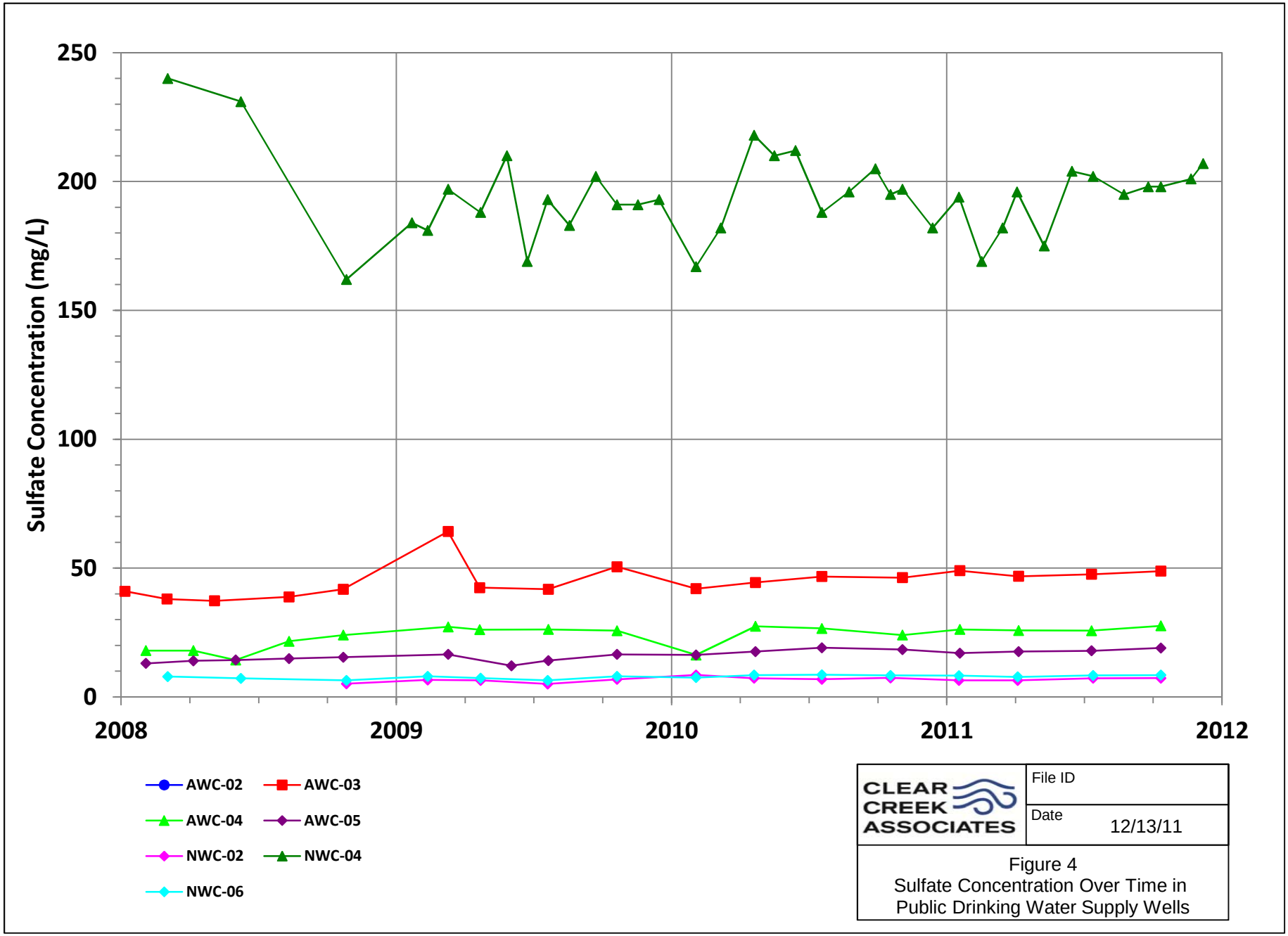
Notes:

Projection: UTM Zone 12N NAD83

Date	File ID
12/20/11	055038-161

CLEAR CREEK ASSOCIATES

Figure 3
Groundwater Elevations for
Fourth Quarter 2011



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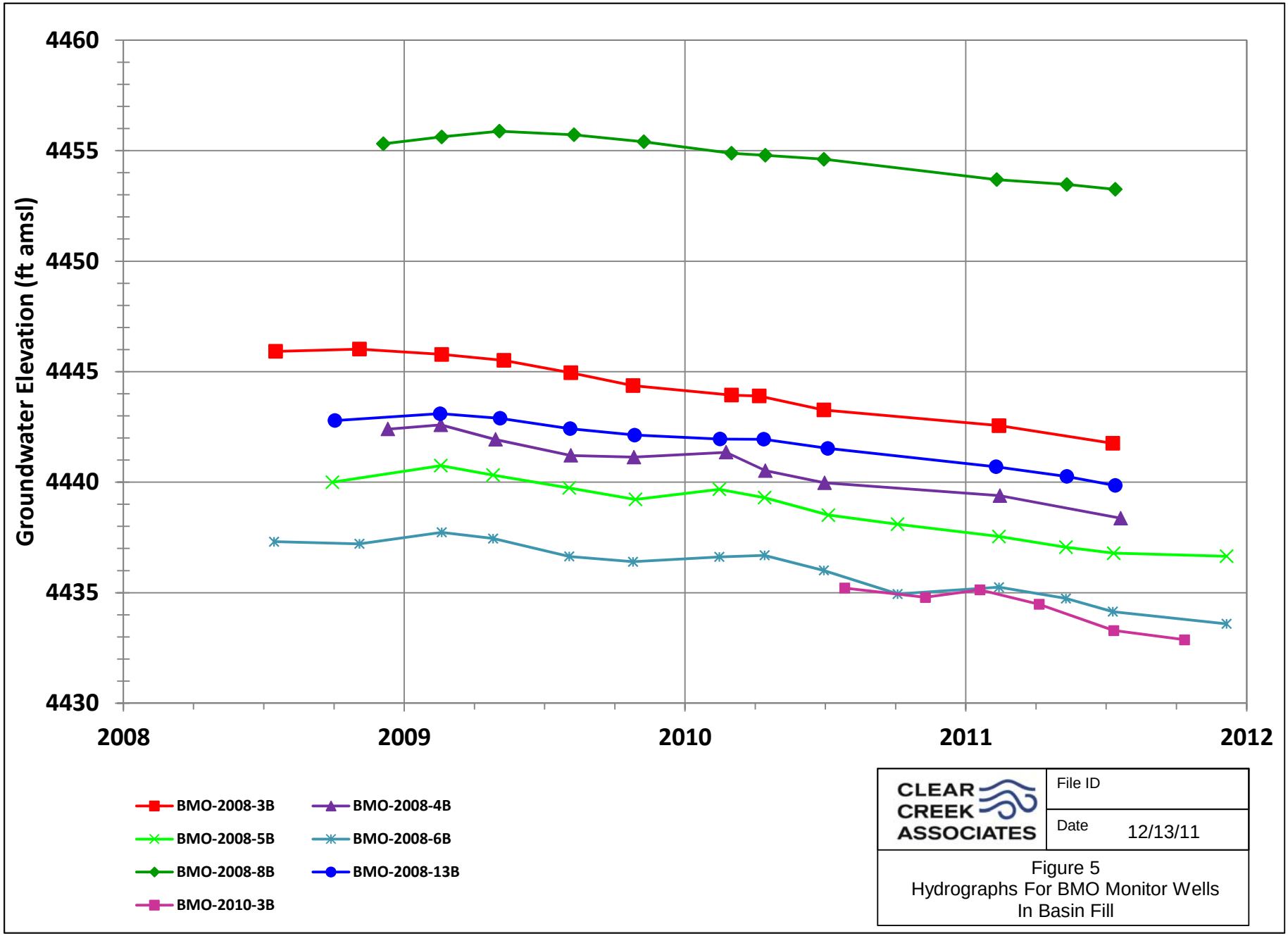

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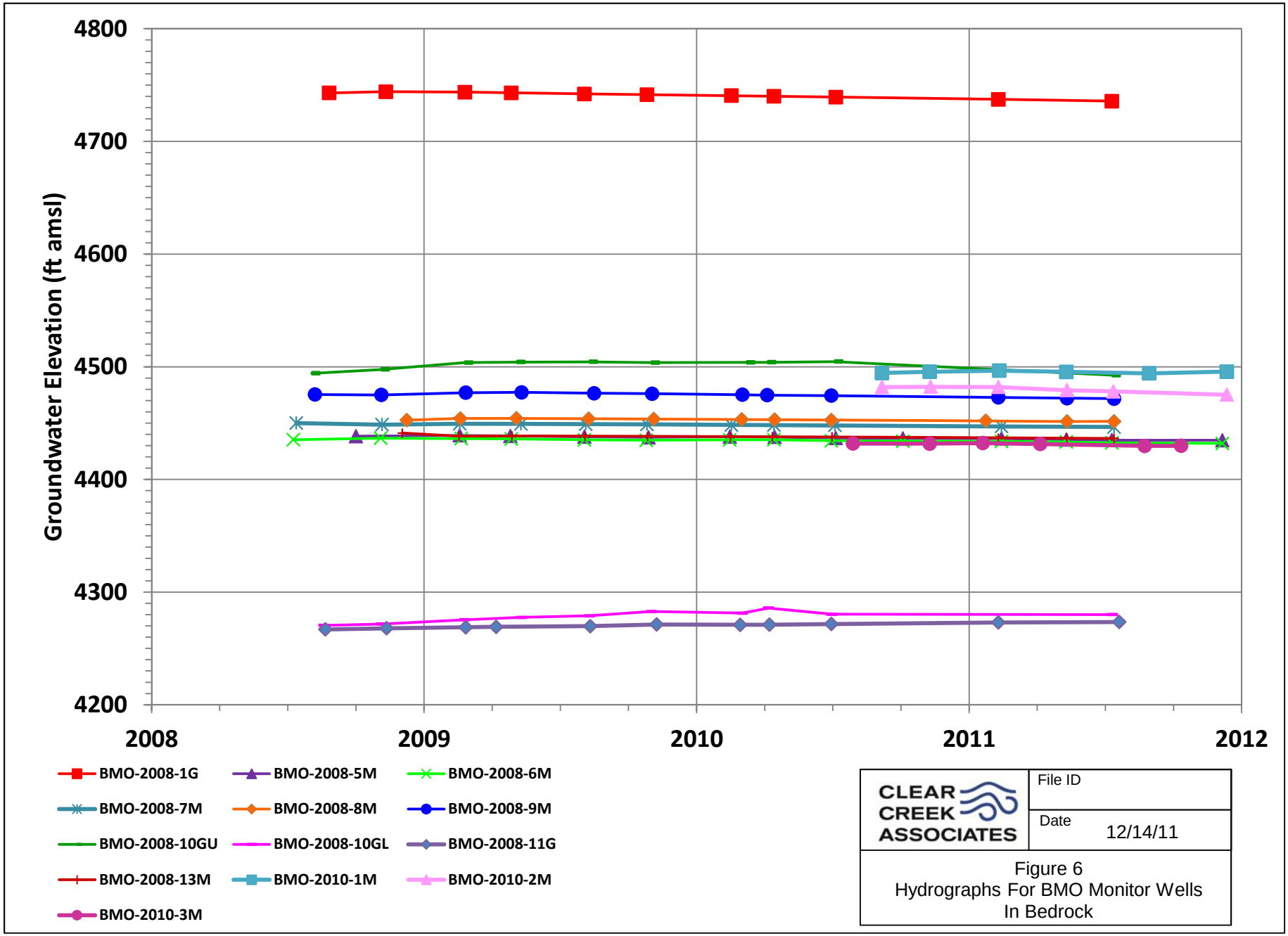

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APPENDIX A

DATA VERIFICATION REPORT

APPENDIX A

DATA VERIFICATION REPORT

FOURTH QUARTER 2011
GROUNDWATER MONITORING REPORT

Prepared for:

FREEPORT-MCMORAN
COPPER QUEEN BRANCH
36 West Highway 92
Bisbee, Arizona 85603

Prepared by:

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January 19, 2012

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1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the fourth quarter 2011 by Clear Creek Associates (Clear Creek) and Freeport-McMoRan Corporation Copper Queen Branch (CQB) pursuant to Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). Clear Creek and CQB collected groundwater samples pursuant to the groundwater monitoring program approved by ADEQ in April 2010 (ADEQ, 2010). Analytical results for groundwater samples collected for this project during the fourth quarter 2011 were provided to Clear Creek by SVL Analytical, Inc. (SVL) of Kellogg, Idaho for preparation of the fourth quarter 2011 Groundwater Monitoring Report.

Quality assurance (QA) and quality control (QC) procedures are specified in the *Quality Assurance Project Plan for Aquifer Characterization Plan* (QAPP) (Appendix F of HGC, 2008) for field sampling, chain-of-custody (COC) documentation, laboratory analysis, and reporting. This report reviews field sampling for samples collected by Clear Creek and CQB. Additionally, sample handling and laboratory QA/QC data are evaluated according to the data quality indicators (DQIs) given in the QAPP.

The laboratory reports for the fourth quarter 2011 samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, internal QA/QC tests performed by SVL and any case narratives are presented with the laboratory reports included in Appendix B. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, SVL did not advise of any modifications that should be made regarding the usability and data validation status of the laboratory test results. The analytical results for all 61 samples collected by Clear Creek and CQB are contained in 6 reports having the SVL Project numbers identified in the following table.

SVL ID	WELLS REPORTED
Number of wells sampled: 49 Number of well samples collected (not including duplicates): 51 Number of duplicate samples collected: 4 Number of field and equipment blanks collected: 6 Total number of samples collected: 61	
W1J0362	AWC-02, AWC-03, AWC-04, AWC-05, BANKS 986, BMO-2010-3B, BMO-2010-3M, CHAMBERS, DUP20111012, DUP20111013, EAST, EB20111012, EB20111013, FB20111012, FB20111013, KEEFER, MOORE, PALMER, ROGERS 803, SCHWARTZ, TVI875, WEED, WEISKOPF, ZANDER
W1J0376	ANDERSON, BIMA, DODSON, DUP, DUP, DURAZO, EB, EB, EPPELE 641, FB, FB, FULTZ, GARNER 635, HOWARD, MCCONNELL 265, METZLER, NOTEMAN, NWC-02, NWC-03, NWC-04, NWC-06, PARRA, PIONKE, RAY, ROGERS E, RUIZ
W1K0537	COOPER, MARCELL, NWC-04
W1L0181	NWC-04, TM-10
W1L0146	BMO-2008-5B, BMO-2008-5M, BMO-2008-6B, BMO-2008-6M
W1L0294	BMO-2010-1M, BMO-2010-2M, HOBAN

2. FIELD OPERATIONS

Field operations for this project consisted of the following for all monitoring wells sampled by Clear Creek and CQB:

- Static water level measurement if possible,
- Well purging,
- Collection of water quality field parameters (pH in standard units [SU], specific conductance [SC] in microsiemens per centimeter [µS/cm], and temperature in degrees Celsius [°C]),
- Collection of groundwater samples for water quality analysis,
- Collection of groundwater quality assurance and quality control samples, and
- Equipment decontamination.

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

2.1 Water Level Monitoring

Static water level measurements were attempted at each well that was sampled and at all wells where water level monitoring was conducted by Clear Creek and CQB. Water levels were measured while the well pump was off. However, it was not always possible to ascertain from the well owners how long the pump had been off. Before measuring the water level at each well, the battery on the water level indicator was checked and the sensitivity level was adjusted, if necessary. Each measurement was collected and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

2.2 Groundwater Sampling

During this monitoring period, an attempt was made to collect groundwater samples from wells designated in the groundwater monitoring program approved by ADEQ (ADEQ, 2010). More detailed information regarding the wells sampled for water quality and water level measurements is listed in Tables 2, 3, and 4 of the main text.

2.2.1 Pre-Sampling Field Activities

On each day of sampling, the pH[1] and SC[2] multipurpose probe was calibrated. In addition, the water level indicator was checked for a signal which indicates a working meter and sufficient battery strength. On each day where sampling extended for more than half a day, a mid-day calibration check was performed on the pH and SC probe to ensure accurate measurement. In addition to calibrating the instruments each day, measures were taken to 1) properly decontaminate field equipment, 2) ensure the appropriate storage and transport temperature of the samples, and 3) document activities related to the collection of groundwater samples as part of this project. These objectives were met by 1) replenishing or obtaining supplies of deionized water and ice daily, 2) use of the proper preservative and sample collection containers, 3) properly packing the samples on ice during field activities, 4) using deionized water to properly decontaminate field equipment prior to the start of sampling each day and after sampling at each well, and 5) obtaining the appropriate field notebook in order to document field activities related to the groundwater monitoring program.

2.2.2 Well Purging, Field Measurements, and Sample Collection

Three wetted casing volumes were purged from each well prior to sampling, when possible. However, when three casing volumes could not be purged, this information was noted on the groundwater sampling form (Appendix C) at each well for which this was the case. Purge water was discharged to the ground surface.

Field measurements were collected at varying intervals during well purging at each well where a water quality sample was collected. If possible, field parameters were monitored until the measurements stabilized within 0.3 standard units for pH, 2 degrees Celsius for temperature and 100 microSiemen/centimeter for specific conductance as described in Section 4.2.1.2 of the QAPP.

During this monitoring period 55 groundwater samples were collected for analysis from 49 wells. Groundwater samples were collected by filtering the sample into a 250 milliliter bottle using clean filtration apparatus and one disposable 0.45-micron filter. All bottles were provided by SVL and maintained in a clean and secure work area until used in the field.

[1] Field pH meter was calibrated using a three point calibration and pH buffers 4, 7, and 10
[2] Field SC meter was calibrated using a standard stock solution of 3900 µS/cm

2.2.3 Post-Sampling Field Activities

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

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

3. SAMPLE HANDLING

All samples collected by Clear Creek and CQB were shipped to SVL for analysis. COC documentation accompanied all samples submitted and included the sample name, collection date and time. Laboratory reports include the date and time the samples were received by SVL. As noted on the analytical data reports from SVL, all of the sample bottles were received intact, properly preserved, and in good condition. The samples were shipped within one to four days of sample collection and the time between sample collection and receipt of samples by SVL was one to five days. The samples were collected, shipped, and received by SVL within the established holding time for dissolved sulfate analysis in accordance with United States Environmental Protection Agency (EPA) Method 300.0.

4. LABORATORY QUALITY CONTROL

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

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

4.1 Licensure

SVL is licensed with the Arizona Department of Health Services (license number AZ0538) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

4.2 Analytical Method

EPA method 300.0 was used for sulfate analysis during this monitoring period.

4.3 Method Detection Limit (MDL) and Reporting Limit (RL)

The MDL and RL of the analytical method used by SVL are shown in the following table. The MDL for analyses of samples was equal to or less than the target MDL identified in the QAPP.

Method	MDL (mg/L)	RL (mg/L)	Target MDL[1] (mg/L)
EPA 300.0	0.07	0.30	10

mg/L = milligrams per liter
[1] Target MDL from Table F.2 of QAPP

4.4 Timeliness

All samples submitted for sulfate analysis were analyzed within the twenty-eight day holding time specified by EPA Method 300.0.

4.5 Quality Control Measurements

The following QC samples were prepared and analyzed:

- Calibration blanks and calibration verification standards
- Analytical spike samples
- Laboratory duplicate samples
- Field blank samples

4.5.1 Calibration Blanks, and Calibration Verification Standards

Results from the analyses of the initial calibration blanks and initial calibration verification standards conducted by EPA Method 300.0 were reviewed. The results of each initial calibration blank analyzed showed no detections of the target analyte. All analytical results for the initial calibration verification standards and laboratory fortified blanks showed percent recoveries that were within the acceptance criteria specified by the SVL QA plan and the QAPP.

4.5.2 Analytical Spike

Analytical spike samples were analyzed for the EPA Method 300.0. The spike samples were prepared by adding a sulfate spike to randomly chosen samples. Spike recoveries for 13 of 16 analyses were above 110 percent. Instances in which analytical spike recoveries were unusable were qualified with an "M3" flag indicating that the analyte concentration was disproportionate to the spike level or an "M1" flag indicating that the spike level was too high. In each case where an M1 or M3 qualifier was used the laboratory control sample recovery was acceptable and no corrective action was required per the SVL Quality Manual and QAPP. The laboratory control samples were prepared by adding a sulfate spike to de-ionized water.

4.5.3 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were reviewed as part of this quality data verification report. Field duplicate samples are discussed in Section 5.1. In all cases where the relative percent difference (RPD) could be calculated, the RPD was within 20 percent, which is the tolerance range set by the laboratory. The results met QA criteria and demonstrate an appropriate level of precision in laboratory analysis of these samples.

4.5.4 Sample Re-Analysis

During the fourth quarter 2011, no field samples were re-analyzed at the request of Clear Creek. Sample re-analysis is sometimes requested based on comparison to historical results.

4.5.5 Field Blank Samples

During the fourth quarter 2011, 6 field blank samples were collected, including three field blanks (FB(20111010), FB(20111011) and FB20111013) and three equipment blanks (EB(20111010), EB(20111011) and EB20111013). Field blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field blank samples were collected and submitted along with other samples to evaluate the potential for contaminant introduction under field conditions. As required by Section 4.2.1.5 of the QAPP, a minimum of one field blank and one equipment blank sample was collected for every twenty samples. Analytical results from field blank and equipment blank samples showed no detections.

5. DATA QUALITY INDICATORS

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

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

Each of these DQIs is discussed below in relation to the fourth quarter 2011 groundwater sampling and analysis conducted by Clear Creek and CQB.

5.1 Precision

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

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Section 4.5.3 there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period four field filtered duplicate samples (DUP(20111010), DUP(20111011), DUP20111012 and DUP20111013) were collected by Clear Creek and CQB for analysis. The collection of four duplicate samples meets QA/QC method and quantity goal as stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the four duplicate samples collected are provided in the table below. The range of RPD values was between 0 and 2.59 percent, all within the 20 percent acceptance criteria for field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is deemed to be met.

SVL Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
W1J0362	EAST	DUP20111012	15.1	15.1	0.00%
W1J0362	AWC-02	DUP20111013	17.4	17.4	0.00%
W1J0376	DODSON	DUP(20111010)	50.9	49.6	2.59%
W1J0376	HOWARD	DUP(20111011)	545	538	1.29%

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

5.2 Bias

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

5.3 Accuracy

Accuracy is a measure of the agreement of a measurement to a known value and is measured using the recoveries from laboratory control samples. As discussed in Sections 4.5.1, 4.5.2, and 4.5.3 there were no significant exceedances of the recovery QA criteria for any of the calibration standards, analytical spikes, or laboratory duplicates, respectively. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

5.4 Representativeness

All samples were taken from locations specified in the Work Plan (HGC, 2008) following sampling procedures specified in the QAPP. Therefore, the samples are judged to provide a good representation of groundwater quality at the sampled locations. The analytical data are judged to be representative of groundwater conditions because the analyses used standard procedures and methods that met QA/QC guidelines of the QAPP.

5.5 Comparability

All samples were collected using standardized procedures (HGC, 2008) and were analyzed by SVL using standardized methods. Insofar as standardized sample collection and analytical methods are adhered to, the sample results should be comparable.

5.6 Completeness

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

5.7 Sensitivity

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

6. REFERENCES

Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent, Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.

ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter dated January 25, 2010. April 22, 2010.

Hydro Geo Chem, Inc. 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

APPENDIX B

ANALYTICAL REPORTS

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
PALMER	W1J0362-01	Ground Water	11-Oct-11 13:52	BD	14-Oct-2011
MOORE	W1J0362-02	Ground Water	11-Oct-11 15:20	BD	14-Oct-2011
KEEFER	W1J0362-03	Ground Water	11-Oct-11 16:35	BD	14-Oct-2011
BANKS 986	W1J0362-04	Ground Water	12-Oct-11 09:35	BD	14-Oct-2011
EAST	W1J0362-05	Ground Water	12-Oct-11 10:12	BD	14-Oct-2011
CHAMBERS	W1J0362-06	Ground Water	12-Oct-11 11:02	BD	14-Oct-2011
DUP20111012	W1J0362-07	Ground Water	12-Oct-11 11:40	BD	14-Oct-2011
RAMIREZ	W1J0362-08	Ground Water	12-Oct-11 12:12	BD	14-Oct-2011
ZANDER	W1J0362-09	Ground Water	12-Oct-11 13:05	BD	14-Oct-2011
TVI875	W1J0362-10	Ground Water	12-Oct-11 13:41	BD	14-Oct-2011
SCHWARTZ	W1J0362-11	Ground Water	12-Oct-11 15:20	BD	14-Oct-2011
ROGERS 803	W1J0362-12	Ground Water	12-Oct-11 15:47	BD	14-Oct-2011
WEED	W1J0362-13	Ground Water	12-Oct-11 16:27	BD	14-Oct-2011
BMO-2010-3M	W1J0362-14	Ground Water	13-Oct-11 11:06	BD	14-Oct-2011
FB20111013	W1J0362-15	Ground Water	13-Oct-11 11:45	BD	14-Oct-2011
EB20111013	W1J0362-16	Ground Water	13-Oct-11 11:50	BD	14-Oct-2011
AWC-05	W1J0362-17	Ground Water	13-Oct-11 12:35	BD	14-Oct-2011
BMO-2010-3B	W1J0362-18	Ground Water	13-Oct-11 12:26	BD	14-Oct-2011
AWC-03	W1J0362-19	Ground Water	13-Oct-11 12:45	BD	14-Oct-2011
AWC-02	W1J0362-20	Ground Water	13-Oct-11 13:00	BD	14-Oct-2011
DUP20111013	W1J0362-21	Ground Water	13-Oct-11 13:10	BD	14-Oct-2011
AWC-04	W1J0362-22	Ground Water	13-Oct-11 13:40	BD	14-Oct-2011
WEISKOPF	W1J0362-23	Ground Water	13-Oct-11 13:55	BD	14-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **PALMER**
SVL Sample ID: **W1J0362-01 (Ground Water)**

Sampled: 11-Oct-11 13:52
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	17.0	mg/L	0.30	0.07		W143272	AEW	10/24/11 21:34	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **MOORE**
SVL Sample ID: **W1J0362-02 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 11-Oct-11 15:20
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.31	mg/L	0.30	0.07		W143272	AEW	10/24/11 21:43	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **KEEFER**
SVL Sample ID: **W1J0362-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 11-Oct-11 16:35
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.98	mg/L	0.30	0.07		W143272	AEW	10/24/11 22:12	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **BANKS 986**
SVL Sample ID: **W1J0362-04 (Ground Water)**

Sampled: 12-Oct-11 09:35
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	172	mg/L	1.50	0.37	5	W143272	AEW	10/24/11 22:21	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **EAST**
SVL Sample ID: **W1J0362-05 (Ground Water)**

Sampled: 12-Oct-11 10:12
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	15.1	mg/L	0.30	0.07		W143272	AEW	10/24/11 22:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **CHAMBERS**
SVL Sample ID: **W1J0362-06 (Ground Water)**

Sampled: 12-Oct-11 11:02
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.80	mg/L	0.30	0.07		W143272	AEW	10/24/11 22:40	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **DUP20111012**
SVL Sample ID: **W1J0362-07 (Ground Water)**

Sampled: 12-Oct-11 11:40
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	15.1	mg/L	0.30	0.07		W143272	AEW	10/24/11 22:50	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **RAMIREZ**
SVL Sample ID: **W1J0362-08 (Ground Water)**

Sampled: 12-Oct-11 12:12
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	8.55	mg/L	0.30	0.07		W143272	AEW	10/24/11 22:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **ZANDER**
SVL Sample ID: **W1J0362-09 (Ground Water)**

Sampled: 12-Oct-11 13:05
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	6.38	mg/L	0.30	0.07		W143272	AEW	10/25/11 13:20	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **TVI875**
SVL Sample ID: **W1J0362-10 (Ground Water)**

Sampled: 12-Oct-11 13:41
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	262	mg/L	15.0	3.70	50	W143272	AEW	10/24/11 23:38	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **SCHWARTZ**
SVL Sample ID: **W1J0362-11 (Ground Water)**

Sampled: 12-Oct-11 15:20
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	124	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 00:06	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **ROGERS 803**
SVL Sample ID: **W1J0362-12 (Ground Water)**

Sampled: 12-Oct-11 15:47
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	175	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 00:16	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **WEED**
SVL Sample ID: **W1J0362-13 (Ground Water)**

Sampled: 12-Oct-11 16:27
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	13.3	mg/L	0.30	0.07		W143272	AEW	10/25/11 00:25	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **BMO-2010-3M**
SVL Sample ID: **W1J0362-14 (Ground Water)**

Sampled: 13-Oct-11 11:06
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	10.5	mg/L	0.30	0.07		W143272	AEW	10/25/11 00:35	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **FB20111013**
SVL Sample ID: **W1J0362-15 (Ground Water)**

Sampled: 13-Oct-11 11:45
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143389	AEW	10/27/11 12:45	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **EB20111013**
SVL Sample ID: **W1J0362-16 (Ground Water)**

Sampled: 13-Oct-11 11:50
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143389	AEW	10/27/11 12:55	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **AWC-05**
SVL Sample ID: **W1J0362-17 (Ground Water)**

Sampled: 13-Oct-11 12:35
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	19.0	mg/L	0.30	0.07		W143272	AEW	10/25/11 00:44	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **BMO-2010-3B**
SVL Sample ID: **W1J0362-18 (Ground Water)**

Sampled: 13-Oct-11 12:26
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	15.9	mg/L	0.30	0.07		W143272	AEW	10/25/11 00:54	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **AWC-03**
SVL Sample ID: **W1J0362-19 (Ground Water)**

Sampled: 13-Oct-11 12:45
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	48.8	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 01:03	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **AWC-02**
SVL Sample ID: **W1J0362-20 (Ground Water)**

Sampled: 13-Oct-11 13:00
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	17.4	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 01:13	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **DUP20111013**
SVL Sample ID: **W1J0362-21 (Ground Water)**

Sampled: 13-Oct-11 13:10
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	17.4	mg/L	1.50	0.37	5	W143272	AEW	10/25/11 01:23	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **AWC-04**
SVL Sample ID: **W1J0362-22 (Ground Water)**

Sampled: 13-Oct-11 13:40
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	27.6	mg/L	0.30	0.07		W143273	AEW	10/25/11 20:37	

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John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Client Sample ID: **WEISKOPF**
SVL Sample ID: **W1J0362-23 (Ground Water)**

Sampled: 13-Oct-11 13:55
Received: 14-Oct-11
Sampled By: BD

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	539	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 21:07	D2

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W143389	26-Oct-11	
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W143272	24-Oct-11	
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W143273	25-Oct-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W143389	26-Oct-11	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.4	10.0	104	90 - 110	W143272	24-Oct-11	
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W143273	25-Oct-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	14.6	14.7	0.2	20	W143389	26-Oct-11	
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	1260	1290	2.6	20	W143272	24-Oct-11	D2
EPA 300.0	Sulfate as SO4	mg/L	27.5	27.6	0.3	20	W143273	25-Oct-11	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	26.1	14.7	10.0	115	90 - 110	W143389	26-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	57.2	49.2	10.0	R > 4S	90 - 110	W143389	26-Oct-11	D2,M3
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	1270	1290	10.0	R > 4S	90 - 110	W143272	24-Oct-11	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	17.4	6.38	10.0	111	90 - 110	W143272	25-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	39.5	27.6	10.0	119	90 - 110	W143273	25-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	31.1	19.6	10.0	115	90 - 110	W143273	26-Oct-11	M1

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0362**
Reported: 28-Oct-11 14:47

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BIMA	W1J0376-01	Ground Water	10-Oct-11 15:18	ML	14-Oct-2011
DODSON	W1J0376-02	Ground Water	10-Oct-11 16:46	ML	14-Oct-2011
DUP	W1J0376-03	Ground Water	10-Oct-11 15:45	ML	14-Oct-2011
FB	W1J0376-04	Ground Water	10-Oct-11 16:30	ML	14-Oct-2011
EB	W1J0376-05	Ground Water	10-Oct-11 16:33	ML	14-Oct-2011
NOTEMAN	W1J0376-06	Ground Water	11-Oct-11 09:20	ML	14-Oct-2011
MCCONELL 265	W1J0376-07	Ground Water	11-Oct-11 13:27	ML	14-Oct-2011
GARNER 635	W1J0376-08	Ground Water	11-Oct-11 12:02	ML	14-Oct-2011
ANDERSON	W1J0376-09	Ground Water	11-Oct-11 14:39	ML	14-Oct-2011
HOWARD	W1J0376-10	Ground Water	11-Oct-11 15:41	ML	14-Oct-2011
PIONKE	W1J0376-11	Ground Water	11-Oct-11 18:07	ML	14-Oct-2011
DUP	W1J0376-12	Ground Water	11-Oct-11 13:30	ML	14-Oct-2011
EB	W1J0376-13	Ground Water	11-Oct-11 16:25	ML	14-Oct-2011
FB	W1J0376-14	Ground Water	11-Oct-11 16:19	ML	14-Oct-2011
EPPELE 641	W1J0376-15	Ground Water	12-Oct-11 10:03	ML	14-Oct-2011
FULTZ	W1J0376-16	Ground Water	12-Oct-11 11:18	ML	14-Oct-2011
METZLER	W1J0376-17	Ground Water	12-Oct-11 13:25	ML	14-Oct-2011
DURAZO	W1J0376-18	Ground Water	12-Oct-11 14:17	ML	14-Oct-2011
PARRA	W1J0376-19	Ground Water	12-Oct-11 15:42	ML	14-Oct-2011
RAY	W1J0376-20	Ground Water	12-Oct-11 17:17	ML	14-Oct-2011
NWC-06	W1J0376-21	Ground Water	13-Oct-11 09:44	ML	14-Oct-2011
NWC-04	W1J0376-22	Ground Water	13-Oct-11 08:29	ML	14-Oct-2011
NWC-03	W1J0376-23	Ground Water	13-Oct-11 09:12	ML	14-Oct-2011
NWC-02	W1J0376-24	Ground Water	13-Oct-11 10:12	ML	14-Oct-2011
RUIZ	W1J0376-25	Ground Water	13-Oct-11 11:39	ML	14-Oct-2011
ROGERS E	W1J0376-26	Ground Water	13-Oct-11 13:08	ML	14-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).
The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: -0.8°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W1J0376-01 A	Filtered Raw HDPE	BIMA	W1J0376-02 A	Filtered Raw HDPE	DODSON
W1J0376-03 A	Filtered Raw HDPE	DUP	W1J0376-04 A	Filtered Raw HDPE	FB

SVL holds the following certifications:
AZ:0538, **CA**:2080, **FL**(**NELAC**):E87993, **ID**:ID00019 & ID00965 (Microbiology), **NV**:ID000192007A, **WA**:1268

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Default Cooler (Received Temperature: -0.8°C) (Continued)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W1J0376-05 A	Filtered Raw HDPE	EB	W1J0376-06 A	Filtered Raw HDPE	NOTEMAN
W1J0376-07 A	Filtered Raw HDPE	MCCONELL 265	W1J0376-08 A	Filtered Raw HDPE	GARNER 635
W1J0376-09 A	Filtered Raw HDPE	ANDERSON	W1J0376-10 A	Filtered Raw HDPE	HOWARD
W1J0376-11 A	Filtered Raw HDPE	PIONKE	W1J0376-12 A	Filtered Raw HDPE	DUP
W1J0376-13 A	Filtered Raw HDPE	EB	W1J0376-14 A	Filtered Raw HDPE	FB
W1J0376-15 A	Filtered Raw HDPE	EPPELE 641	W1J0376-16 A	Filtered Raw HDPE	FULTZ
W1J0376-17 A	Filtered Raw HDPE	METZLER	W1J0376-18 A	Filtered Raw HDPE	DURAZO
W1J0376-19 A	Filtered Raw HDPE	PARRA	W1J0376-20 A	Filtered Raw HDPE	RAY
W1J0376-21 A	Filtered Raw HDPE	NWC-06	W1J0376-22 A	Filtered Raw HDPE	NWC-04
W1J0376-23 A	Filtered Raw HDPE	NWC-03	W1J0376-24 A	Filtered Raw HDPE	NWC-02
W1J0376-25 A	Filtered Raw HDPE	RUIZ	W1J0376-26 A	Filtered Raw HDPE	ROGERS E

Case Narrative

12/01/2011mab: Report reissued. Client requested SO4 reanalysis for sample -18. A dilution error was made; the corrected value is now reported.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **BIMA**
SVL Sample ID: **W1J0376-01 (Ground Water)**

Sampled: 10-Oct-11 15:18
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	322	mg/L	3.00	0.74	10	W143273	AEW	10/25/11 21:17	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **DODSON**
SVL Sample ID: **W1J0376-02 (Ground Water)**

Sampled: 10-Oct-11 16:46
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	50.9	mg/L	1.50	0.37	5	W143273	AEW	10/25/11 21:27	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **DUP**
SVL Sample ID: **W1J0376-03 (Ground Water)**

Sampled: 10-Oct-11 15:45
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	49.6	mg/L	1.50	0.37	5	W143273	AEW	10/25/11 21:37	D1

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **FB**
SVL Sample ID: **W1J0376-04 (Ground Water)**

Sampled: 10-Oct-11 16:30
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143273	AEW	10/25/11 21:47	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **EB**
SVL Sample ID: **W1J0376-05 (Ground Water)**

Sampled: 10-Oct-11 16:33
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143273	AEW	10/25/11 22:16	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **NOTEMAN**
SVL Sample ID: **W1J0376-06 (Ground Water)**

Sampled: 11-Oct-11 09:20
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	286	mg/L	3.00	0.74	10	W143273	AEW	10/25/11 22:26	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **MCCONELL 265**
SVL Sample ID: **W1J0376-07 (Ground Water)**

Sampled: 11-Oct-11 13:27
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	845	mg/L	15.0	3.70	50	W143273	AEW	10/25/11 22:36	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **GARNER 635**
SVL Sample ID: **W1J0376-08 (Ground Water)**

Sampled: 11-Oct-11 12:02
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	38.0	mg/L	1.50	0.37	5	W143273	AEW	10/25/11 22:46	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **ANDERSON**
SVL Sample ID: **W1J0376-09 (Ground Water)**

Sampled: 11-Oct-11 14:39
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	543	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 22:56	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **HOWARD**
SVL Sample ID: **W1J0376-10 (Ground Water)**

Sampled: 11-Oct-11 15:41
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	545	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 23:06	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **PIONKE**
SVL Sample ID: **W1J0376-11 (Ground Water)**

Sampled: 11-Oct-11 18:07
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	502	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 23:16	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **DUP**
SVL Sample ID: **W1J0376-12 (Ground Water)**

Sampled: 11-Oct-11 13:30
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	538	mg/L	7.50	1.85	25	W143273	AEW	10/25/11 23:26	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **EB**
SVL Sample ID: **W1J0376-13 (Ground Water)**

Sampled: 11-Oct-11 16:25
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143273	AEW	10/25/11 23:36	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **FB**
SVL Sample ID: **W1J0376-14 (Ground Water)**

Sampled: 11-Oct-11 16:19
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.07		W143273	AEW	10/25/11 23:46	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **EPPELE 641**
SVL Sample ID: **W1J0376-15 (Ground Water)**

Sampled: 12-Oct-11 10:03
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	19.6	mg/L	0.30	0.07		W143273	AEW	10/26/11 00:15	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **FULTZ**
SVL Sample ID: **W1J0376-16 (Ground Water)**

Sampled: 12-Oct-11 11:18
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	48.5	mg/L	1.50	0.37	5	W143273	AEW	10/26/11 00:35	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **METZLER**
SVL Sample ID: **W1J0376-17 (Ground Water)**

Sampled: 12-Oct-11 13:25
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	301	mg/L	15.0	3.70	50	W143273	AEW	10/26/11 12:41	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **DURAZO**
SVL Sample ID: **W1J0376-18 (Ground Water)**

Sampled: 12-Oct-11 14:17
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	396	mg/L	7.50	1.85	25	W143273	AEW	10/26/11 00:55	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **PARRA**
SVL Sample ID: **W1J0376-19 (Ground Water)**

Sampled: 12-Oct-11 15:42
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	406	mg/L	7.50	1.85	25	W143274	AEW	10/26/11 15:10	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **RAY**
SVL Sample ID: **W1J0376-20 (Ground Water)**

Sampled: 12-Oct-11 17:17
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	130	mg/L	1.50	0.37	5	W143274	AEW	10/26/11 15:20	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **NWC-06**
SVL Sample ID: **W1J0376-21 (Ground Water)**

Sampled: 13-Oct-11 09:44
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	8.48	mg/L	0.30	0.07		W143274	AEW	10/26/11 15:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **NWC-04**
SVL Sample ID: **W1J0376-22 (Ground Water)**

Sampled: 13-Oct-11 08:29
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	198	mg/L	3.00	0.74	10	W143274	AEW	10/26/11 15:59	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **NWC-03**
SVL Sample ID: **W1J0376-23 (Ground Water)**

Sampled: 13-Oct-11 09:12
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	353	mg/L	7.50	1.85	25	W143274	AEW	10/26/11 16:09	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Copper Queen Branch
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Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **NWC-02**
SVL Sample ID: **W1J0376-24 (Ground Water)**

Sampled: 13-Oct-11 10:12
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.31	mg/L	0.30	0.07		W143274	AEW	10/26/11 16:19	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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36 West Highway 92
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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **RUIZ**
SVL Sample ID: **W1J0376-25 (Ground Water)**

Sampled: 13-Oct-11 11:39
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	230	mg/L	3.00	0.74	10	W143274	AEW	10/26/11 16:49	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Client Sample ID: **ROGERS E**
SVL Sample ID: **W1J0376-26 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 13-Oct-11 13:08
Received: 14-Oct-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	5.99	mg/L	0.30	0.07		W143274	AEW	10/26/11 16:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W143273	25-Oct-11	
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W143274	26-Oct-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W143273	25-Oct-11	
EPA 300.0	Sulfate as SO4	mg/L	10.0	10.0	100	90 - 110	W143274	26-Oct-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	27.5	27.6	0.3	20	W143273	25-Oct-11	
EPA 300.0	Sulfate as SO4	mg/L	8.48	8.48	0.0	20	W143274	26-Oct-11	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	39.5	27.6	10.0	119	90 - 110	W143273	25-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	31.1	19.6	10.0	115	90 - 110	W143273	26-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	19.7	8.48	10.0	112	90 - 110	W143274	26-Oct-11	M1
EPA 300.0	Sulfate as SO4	mg/L	18.1	5.99	10.0	121	90 - 110	W143274	26-Oct-11	M1

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1J0376**
Reported: 01-Dec-11 16:38

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1K0537**
Reported: 09-Dec-11 09:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W1K0537-01	Ground Water	22-Nov-11 10:24	ML	23-Nov-2011
MARCELL	W1K0537-02	Ground Water	22-Nov-11 11:11	ML	23-Nov-2011
COOPER	W1K0537-03	Ground Water	22-Nov-11 12:51	ML	23-Nov-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1K0537**
Reported: 09-Dec-11 09:11

Client Sample ID: **NWC-04**
SVL Sample ID: **W1K0537-01 (Ground Water)**

Sampled: 22-Nov-11 10:24
Received: 23-Nov-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	201	mg/L	3.00	0.39	10	W150052	AEW	12/05/11 15:27	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1K0537**
Reported: 09-Dec-11 09:11

Client Sample ID: **MARCELL**
SVL Sample ID: **W1K0537-02 (Ground Water)**

Sampled: 22-Nov-11 11:11
Received: 23-Nov-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	687	mg/L	7.50	0.98	25	W150052	AEW	12/06/11 12:43	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1K0537**
Reported: 09-Dec-11 09:11

Client Sample ID: **COOPER**
SVL Sample ID: **W1K0537-03 (Ground Water)**

Sampled: 22-Nov-11 12:51
Received: 23-Nov-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	33.7	mg/L	0.30	0.04		W150052	AEW	12/05/11 16:12	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1K0537**
Reported: 09-Dec-11 09:11

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.04	0.30	W150052	05-Dec-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W150052	05-Dec-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	0.42	0.43	0.2	20	W150052	05-Dec-11	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	11.5	0.43	10.0	110	90 - 110	W150052	05-Dec-11	
EPA 300.0	Sulfate as SO4	mg/L	14.7	3.93	10.0	108	90 - 110	W150052	05-Dec-11	

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0181**
Reported: 12-Dec-11 16:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W1L0181-01	Ground Water	08-Dec-11 10:31	ML	09-Dec-2011
TM-10	W1L0181-02	Ground Water	08-Dec-11 13:15	CS	09-Dec-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0181**
Reported: 12-Dec-11 16:30

Client Sample ID: **NWC-04**
SVL Sample ID: **W1L0181-01 (Ground Water)**

Sampled: 08-Dec-11 10:31
Received: 09-Dec-11
Sampled By: ML

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	207	mg/L	3.00	0.39	10	W150285	AEW	12/09/11 13:33	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
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Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0181**
Reported: 12-Dec-11 16:30

Client Sample ID: **TM-10**
SVL Sample ID: **W1L0181-02 (Ground Water)**

Sampled: 08-Dec-11 13:15
Received: 09-Dec-11
Sampled By: CS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	16.8	mg/L	0.30	0.04		W150285	AEW	12/09/11 14:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch
36 West Highway 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0181**
Reported: 12-Dec-11 16:30

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.04	0.30	W150285	09-Dec-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W150285	09-Dec-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	208	207	0.3	20	W150285	09-Dec-11	D2

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	218	207	10.0	109	90 - 110	W150285	09-Dec-11	D2

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0146**
Reported: 13-Dec-11 15:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2008-5M	W1L0146-01	Ground Water	07-Dec-11 10:45	CLS	08-Dec-2011
BMO-2008-5B	W1L0146-02	Ground Water	07-Dec-11 11:25	CLS	08-Dec-2011
BMO-2008-6M	W1L0146-03	Ground Water	07-Dec-11 13:25	CLS	08-Dec-2011
BMO-2008-6B	W1L0146-04	Ground Water	07-Dec-11 14:25	CLS	08-Dec-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0146**
Reported: 13-Dec-11 15:18

Client Sample ID: **BMO-2008-5M**
SVL Sample ID: **W1L0146-01 (Ground Water)**

Sampled: 07-Dec-11 10:45
Received: 08-Dec-11
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	129	mg/L	3.00	0.39	10	W150232	AEW	12/08/11 22:13	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0146**
Reported: 13-Dec-11 15:18

Client Sample ID: **BMO-2008-5B**
SVL Sample ID: **W1L0146-02 (Ground Water)**

Sampled: 07-Dec-11 11:25
Received: 08-Dec-11
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	213	mg/L	3.00	0.39	10	W150232	AEW	12/08/11 22:24	D2

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0146**
Reported: 13-Dec-11 15:18

Client Sample ID: **BMO-2008-6M**
SVL Sample ID: **W1L0146-03 (Ground Water)**

Sampled: 07-Dec-11 13:25
Received: 08-Dec-11
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	200	mg/L	3.00	0.39	10	W150232	AEW	12/08/11 22:35	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0146**
Reported: 13-Dec-11 15:18

Client Sample ID: **BMO-2008-6B**
SVL Sample ID: **W1L0146-04 (Ground Water)**

Sampled: 07-Dec-11 14:25
Received: 08-Dec-11
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	21.8	mg/L	1.50	0.20	5	W150232	AEW	12/08/11 22:46	D1

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0146**
Reported: 13-Dec-11 15:18

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.04	0.30	W150232	08-Dec-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W150232	08-Dec-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	1260	1270	1.5	20	W150232	08-Dec-11	D2

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	1310	1270	10.0	R > 4S	90 - 110	W150232	08-Dec-11	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	198	192	10.0	R > 4S	90 - 110	W150232	08-Dec-11	D2,M3

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0294**
Reported: 20-Dec-11 09:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2010-1M	W1L0294-01	Ground Water	13-Dec-11 17:00	CS	15-Dec-2011
BMO-2010-2M	W1L0294-02	Ground Water	13-Dec-11 17:40	CS	15-Dec-2011
HOBAN	W1L0294-03	Ground Water	14-Dec-11 09:40	CS	15-Dec-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0294**
Reported: 20-Dec-11 09:14

Client Sample ID: **BMO-2010-1M**
SVL Sample ID: **W1L0294-01 (Ground Water)**

Sampled: 13-Dec-11 17:00
Received: 15-Dec-11
Sampled By: CS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	149	mg/L	3.00	0.39	10	W151240	AEW	12/16/11 10:52	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Freeport McMoRan - Bisbee
36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0294**
Reported: 20-Dec-11 09:14

Client Sample ID: **BMO-2010-2M**
SVL Sample ID: **W1L0294-02 (Ground Water)**

Sampled: 13-Dec-11 17:40
Received: 15-Dec-11
Sampled By: CS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	984	mg/L	30.0	3.90	100	W151240	AEW	12/16/11 11:01	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0294**
Reported: 20-Dec-11 09:14

Client Sample ID: **HOBAN**
SVL Sample ID: **W1L0294-03 (Ground Water)**

Sampled: 14-Dec-11 09:40
Received: 15-Dec-11
Sampled By: CS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	944	mg/L	15.0	1.95	50	W151240	AEW	12/16/11 11:10	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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36 West Hwy 92
Bisbee, AZ 85603

Project Name: Copper Queen Branch Sulfate Mitigation Order
Work Order: **W1L0294**
Reported: 20-Dec-11 09:14

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.04	0.30	W151240	15-Dec-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	9.88	10.0	98.8	90 - 110	W151240	15-Dec-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	96.5	96.2	0.3	20	W151240	15-Dec-11	D2

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	105	96.2	10.0	92.9	90 - 110	W151240	15-Dec-11	D2,M3

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

APPENDIX C

GROUNDWATER SAMPLING FORMS

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/11/11

Well ID: ANDERSON Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 236

Casing Diameter (in): 6

Static Water Level (ft bmp): 150.19

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
				5.87	21.8	1270	rear spigot brown water
				6.65	21.2	1230	Front Sp clear
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ANDERSON	14:39	Poly	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [x] Other: TANK

Additional Comments: Sample from tank

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: LO Date: 10-13-11

Well ID: AINC-02 Weather: Sunny, 70's

ADWR No: Sampler: BJD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
13:00				6.72	25.1	464.6	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	13:00						
DUP 2011 1013	13:05						

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.02 | Date: 10-13-11

Well ID: AWC-03 | Weather: Sunny 70's

ADWR No: | Sampler: BJO

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
12:45				6.69	23.8	463.6	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-03	12:43	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☒ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other: Well has been running. No purge.

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-13-11

Well ID: AWC-04 Weather: Sunny 80's

ADWR No: Sampler: BJD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
13:10				6.38	24.0	619.7	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-04	13:10	Poly	250ml	1	300.0	X	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☒ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☒ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-13-11

Well ID: AWC-05 | Weather: Sunny 80s

ADWR No: | Sampler: BSO

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
12:34				6.82	26.0	427.5	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-05	12:35	Poly	250mL	1	300.0	ϕ	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Pumping

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-12-11

Well ID: BANKS 986 | Weather: Sunny 60's

ADWR No: | Sampler: BSO

WELL DATA

Well Depth (ft bls): 435

Casing Diameter (in): 6"

Static Water Level (ft bmp): NA

Casing Volume (gal): ~ 300 x3 = 900

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
8:30	Pump On						
9:00	30	12	360	7.91	23.7	1531	
9:05		<1					Discharge dropped
9:15	45		375	7.87	21.3	1545	
9:25	55	<1	387	7.88	21.2	1551	
9:28	DRY						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BANKS 986	~~09:35~~ ~~09:28~~	Poly	250mL	1	300.0	0	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: 237.34 at BANKS 987

Spoke to Andy, BANKS. Switch on the well has been acting up. Need to turn it ON/OFF a couple times inside to get it pumping at full capacity

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-12-11

Well ID: BANKS 987 Weather: Sunny 60's

ADWR No: Sampler: BJD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 237.34

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/10/11

Well ID: BIMA | Weather: Sunny

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 465

Casing Diameter (in): 4"

Static Water Level (ft bmp): N/A (from 10/18/10 = 387.37)

Casing Volume (gal): (51) x3 = (153)

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C) F	Specific Conductance (µS/cm)	Comments
	Pump On						
1422				—			
1433	11 X	6.4		6.38	74.8	1500	
1444	22			6.49	75.3	1510	
1447	25	5		6.50	75.4	1520	
1455	33	2					
1518							
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm) 0.3 100

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
~~BIMA~~	1457	Poly	250	1	300.0	N	N
BIMA	1518	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☑ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

EC cal to 3.53mS

Additional Comments: Could not get reading (WL) below ~300Ft

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-7-11
Well ID:	BMO-2008-5B	Weather:	Sunny - 48°
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	285
Casing Diameter (in):	5"
Static Water Level (ft bmp):	148.45
Casing Volume (gals):	139.2
3 Casing Volumes (gals):	417

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1100							
1105	5	27	135	6.98	19.6	732	
1115	15	27	405	6.96	19.8	731	
1125	25	27	675	6.95	19.9	730	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-5B	1125	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

136.55

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-7-11
Well ID:	BMO-2008-5M	Weather:	Partly Cloudy, 45°
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	150.3
Casing Volume (gals):	305.6
3 Casing Volumes (gals):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0950							
0955	5	18	90	7.07	21.2	604	
1015	25	18	450	7.10	21.0	609	
1035	45	18	810	7.12	21.1	602	
1045	55	18	990	7.10	21.2	601	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-5M	1045	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments: 0950

299.7

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-7-11
Well ID:	BMQ-2008-6B	Weather:	Sunny
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	265'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	193.85
Casing Volume (gals):	72.5
3 Casing Volumes (gals):	217.5

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1340							
1345	5	5.1	25	7.24	20.7	338	
1355	15	5.1	75	7.26	20.9	329	
1410	30	5.1	150	7.27	20.8	328	
1425	45	5.1	225	7.28	21.8	330	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMQ-2008-6B		plastic	250 ml	1	EPA 300.0	none	filtered

71.15

Additional Comments:

1243

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-7-11
Well ID:	BMO-2008-GM	Weather:	Sunny - 52
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	450
Casing Diameter (in):	5"
Static Water Level (ft bmp):	194.92
Casing Volume (gals):	260.2
3 Casing Volumes (gals):	780.6

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1245							
1255	10	21	210	6.94	21.1	708	
1305	20	21	420	6.93	21.2	719	
1315	30	21	630	6.95	21.3	714	
1325	40	21	840	6.94	21.3	710	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2008-GM		plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

255.1

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-13-11
Well ID:	BMO-2010-1M	Weather:	Partly Cloudy
ADWR No:		Sampler:	Christopher L Shuman

WELL DATA

Well Depth (ft bls):	550
Casing Diameter (in):	5"
Static Water Level (ft bmp):	222.86
Casing Volume (gals):	333.6
3 Casing Volumes (gals):	1000.8

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1350							
1400	10	10	100	7.55	21.3	710	
1415	15	10	150	7.48	21.2	715	
1450	60	5	325	7.65	21.3	712	
1550	120	5	675	7.64	21.4	710	
1655	185	5	1000	7.63	21.3	713	
1700							

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2010-1M	1700	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

327.1

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-13-11
Well ID:	BMO-2010-2M	Weather:	Cloudy
ADWR No:		Sampler:	Christopher L Slaymaker

WELL DATA

Well Depth (ft bls):	380
Casing Diameter (in):	5"
Static Water Level (ft bmp):	270.98
Casing Volume (gals):	111.1
3 Casing Volumes (gals):	333.3

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1710							
1715	5	12	60	6.56	20.1	2.13	
1720	10	12	120	6.57	20.0	2.13	
1730	20	12	240	6.57	20.2	2.15	
1740	30	12	360	6.59	20.3	2.14	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
BMO-2010-2M	1740	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

109.

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-13-11

Well ID: BMO-2010-3B Weather: Sunny 80s

ADWR No: Sampler: BSD

WELL DATA

Well Depth (ft bls):	330
Casing Diameter (in):	5"
Static Water Level (ft bmp):	117.72
Casing Volume (gal):	218 x3 = 654
Total Volume Purged (gal):	

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
11:10	Pump On						
11:30	20	9	180	7.82	22.6	409.2	
11:50	40	9	360	7.53	22.9	408.6	
12:20	70	9	630	7.57	23.1	410.6	
12:25	75	9	675	7.63	23.4	411.2	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3B	12:26	Poly	250mL	1	300.0	ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-13-11

Well ID: BMO-2010-3M | Weather: SUNNY, 70's

ADWR No: | Sampler: BSD

WELL DATA

Well Depth (ft bls):	531'
Casing Diameter (in):	5"
Static Water Level (ft bmp):	120.67
Casing Volume (gal):	420 x3 = 1260
Total Volume Purged (gal):	1260

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
9:00	Pump On						
9:30	30	10	300	7.95	21.5	471.3	
10:00	60	10	600	8.03	21.8	377.1	
10:30	90	10	900	7.78	23.0	374.8	
10:45	105	10	1050	7.72	23.3	376.3	
11:00	120	10	1200	7.73	23.6	375.8	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3M	11:06	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-12-11

Well ID: CHAMBERS | Weather: Sunny 70's

ADWR No: | Sampler: BJD

WELL DATA

Well Depth (ft bls): 245

Casing Diameter (in): NA

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal): 210

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
10:48	Pump On						
10:51	3	15	45	7.60	23.1	419.4	
10:54	6	15	90	7.33	21.6	420.3	
10:57	9	15	135	7.29	21.1	422.6	
11:00	12	15	180	7.33	22.6	425.8	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
CHAMBERS	11:02	Poly	250ml	1	300.0	ϕ	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: No port in wellhead
Purge til parameters stabilize. Minimum time between readings is ~3min because yard floods when well is run too long

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 11/22/11

Well ID: COOPER Weather: Sunny 50's

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 325

Casing Diameter (in): 6

Static Water Level (ft bmp): N/A

Casing Volume (gal): N/A x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
12:27	Pump On						
12:32	5	7	35	7.77	20.9	428.4	
12:37	10		70	7.85	21.6	424.8	
12:42	15		105	7.88	21.5	424.9	
12:47	20		140	7.86	20.6	420.1	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COOPER	1251	POLY	250	1	300.0	N	k

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead.
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Doris - 432-7435 249-7133

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/13/11

Well ID: Copper C | Weather: Sunny 80's

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6

Static Water Level (ft bmp): 159.81

Casing Volume (gal): 88 x3 = 265

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							No sample collected
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Opened valve water came out open Y pipe in back near fence, ran out of water could not "restart"

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/10/11

Well ID: Dodson | Weather: Sunny

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 200

Casing Diameter (in): 6"

Static Water Level (ft bmp): 93.11

Casing Volume (gal): 157 x3 = 471

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1546	Pump On						
1550	4	5	20	6.43	71.7	1350	
1557	11	9	83	6.75	69.9	1350	
1606	20	8	155	6.63	70.9	1340	
1614	28	5	195	6.80	70.5	1330	
1622	36	13	299	6.86	70.6	1310	
1630	44	13	403	6.87	70.1	1,290	
1641	55	13	546	6.66	69.9	1280	
1645	59	13	598	6.79	69.7	1280	
					70.9		Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
DODSON	1646	POLY	250	1	300.0	N	Y
DUP	1646	POLY	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/12/11

Well ID: DURAZO Weather: Sunny

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):	N/A
Casing Diameter (in):	6"
Static Water Level (ft bmp):	N/A
Casing Volume (gal):	x3 =
Total Volume Purged (gal):	~250

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1347	Pump On						
1357	10	5	50	7.16	26.4	990	
1402	15	5	100	7.07	25.6	1000	
1407	20	5	150	7.22	25.2	1010	
1412	25	5	200	7.23	24.9	1000	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
DURAZO	14:17	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☑ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-12-11

Well ID: EAST | Weather: SUNNY 70's

ADWR No: | Sampler:

WELL DATA

Well Depth (ft bls):	125'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	63.69
Casing Volume (gal):	92 x3 = 276
Total Volume Purged (gal):	324

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
09:45	Pump On						
09:55	10	12	120	7.51	21.9	~~56~~ 599.7	
10:00	15	12	180	7.36	21.6	600.3	
10:05	20	12	240	7.31	21.5	599.3	
10:10	25	12	300	7.31	21.4	599.7	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
EAST	10:12	Poly	250 ~~ML~~ AT	1	300.0	Ø	Y
DUP20111012	11:40	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/12/11

Well ID: EPPELE 641 Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 265

Casing Diameter (in): 8"

Static Water Level (ft bmp): 37.62

Casing Volume (gal): 593 ~~227~~ x3 = ~~681~~ 1780

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0831	Pump On						
0841	10	14	140	7.28	20.9	500	
0851	20	↓	280	7.1	21.2	500	
0900	29		406	7.34	21.1	500	
0906	35		490	7.38	21.0	500	
0916	45		630	7.41	20.9	500	
0928	57		798	7.38	20.9	500	
0940	69		966	—	—	—	DRY
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
EPPELE 641	10:03	Poly	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

☒ Water level measurement collected.

☐ No water level measurement collected. No access to wellhead/No port in wellhead

☐ No water level measurement collected. Obstruction in well.

☐ No water level measurement collected. Well is pumping.

☐ Other:

WELL PURGING INFORMATION

☐ Purged 3 well volumes and field parameters stabilized.

☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.

☐ Purged well until field parameters stabilized.

☒ Other: DRY & field parameters stabilized

Additional Comments: Pump went dry at ~966 gal. at 09:40

Pump 10:01

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Ray
Mutz
Dumas
Ray → call

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/12/16

Well ID: FULTZ | Weather: Sunny

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls):	300 → 400 per owner
Casing Diameter (in):	6"
Static Water Level (ft bmp):	N/A
Casing Volume (gal):	~350 x3 = ~1050
Total Volume Purged (gal):	~ 349

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1036	Pump On						
1042	6	8	48	6.45	22.4	850	
1052	16	8	128	6.97	21.6	880	
1058	22	8	176	7.22	21.9	870	
1105	29	8	232	7.21	21.9	870	
1110	34	9	277	7.23	21.7	870	
1115	39	9	322	7.22	21.7	870	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
FULTZ	11:18	Poly	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized. → Per owner request
- [ ] Other:

Additional Comments: Last WL = 63.82

Per JN - 1 well volume, stabilize + sample.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/11/11

Well ID: GARNER 557 Weather: Sunny

ADWR No: 558557 Sampler: MMC

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 195.72

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: WLO - In enclosed pumphouse

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/11/11

Well ID: GARNER 635 | Weather: Sunny

ADWR No: 587635 | Sampler: MWL

WELL DATA

Well Depth (ft bls): 680

Casing Diameter (in): 5

Static Water Level (ft bmp): 197.75

Casing Volume (gal): 483 x3 = 1449

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1013	Pump On						
1018	5	9	45	7.08	22.7	400	
1038	25	12	285	7.43	23.7	400	
1103	50	13	610	7.55	24.0	400	
1128	75	16	1010	7.59	24.1	410	
1143	90	16	1250	7.56	24.2	400	
1158	105	16	1490	7.57	24.2	400	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
GARNER 635	12:02	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-14-11
Well ID:	Hoban	Weather:	Sunny - 48°
ADWR No:		Sampler:	Christopher L Shumm

WELL DATA

Well Depth (ft bls):	300
Casing Diameter (in):	5"
Static Water Level (ft bmp):	168.13
Casing Volume (gals):	134.4
3 Casing Volumes (gals):	403.2

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
0840							
0845	5	17.6	88	6.52	20.0	1913	
0855	15	17.6	264	6.60	20.2	1876	
0910	30	17.6	528	6.65	20.4	1857	
0940	60	17.6	1056	6.68	20.2	1870	

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
Hoban	0940	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

131.8

Pump set 220'

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/11/11

Well ID: HOWARD Weather: SUNNY

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):	220
Casing Diameter (in):	6"
Static Water Level (ft bmp):	155.02
Casing Volume (gal):	65 x3 = 195
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1514	Pump On						
1519	5	13	65	6.93	22.8	1110	
1524	10	13	130	7.25	21.3	1090	
1529	15		195	7.21	21.1	1170	
1534	20		260	7.10	21.0	1220	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
HOWARD	1541	POLY	250	1	300.0	—	Y
DUP	1541	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-11-11

Well ID: KEEFER Weather: SUNNY, 60 70's

ADWR No: Sampler: BJD

WELL DATA

Well Depth (ft bls):	245
Casing Diameter (in):	6"
Static Water Level (ft bmp):	141.68
Casing Volume (gal):	153 x3 = 460
Total Volume Purged (gal):	525

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
16:00	Pump On						
16:10	10	15	150	7.55	21.5	468.0	
16:20	20	15	300	7.42	20.7	479.2	
16:30	30	15	450	7.39	20.7	5486.9	
16:36							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
KEEFER	16:35	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/11/11

Well ID: McConnell 265 | Weather: Sunny

ADWR No: 529265 | Sampler: MMC

WELL DATA

Well Depth (ft bls): 216

Casing Diameter (in): 6"

Static Water Level (ft bmp): 161.17

Casing Volume (gal): 81 x3 = 243

Total Volume Purged (gal): 300

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1302	Pump On						
1307	5	12	60	6.58	22.4	1570	
1312	10	12	120	7.06	21.6	1590	
1317	15	12	180	7.10	21.8	1600	
1322	20	12	240	7.18	21.8	1590	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McConnell		Poly	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: Hanna HI 991301

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 11/22/11

Well ID: MARCELL | Weather: Sunny

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 220

Casing Diameter (in): 6"

Static Water Level (ft bmp): 180 * per previous measurement

Casing Volume (gal): 59 x3 = 176

Total Volume Purged (gal):

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1050	Pump On						
1057	7	11	77	7.33	20.5	1556	
1102	12		132	7.25	20.4	1544	
1107	17		187	7.29	21.0	1536	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Marcell	11:11	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead.
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☒ Other: Unable to sound

WELL PURGING INFORMATION

- ☒ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/12/11

Well ID: METZLER Weather: Sunny 80

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls): 351

Casing Diameter (in): 6

Static Water Level (ft bmp): 290.47

Casing Volume (gal): 89 x3 = 267

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
12:36	Pump On						
12:44	8	6	48	6.98	22.0	890	
12:52	16	6	96	7.22	22.2	890	
1302	26	6	156	7.02	22.3	900	
1309	31	6	186	7.24	22.1	890	
1315	39	6	234	7.26	22.2	900	
1321	45	6	270	7.27	22.1	910	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
METZLER	1325	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

☑ Water level measurement collected.

☐ No water level measurement collected. No access to wellhead/No port in wellhead

☐ No water level measurement collected. Obstruction in well.

☐ No water level measurement collected. Well is pumping.

☐ Other:

WELL PURGING INFORMATION

☑ Purged 3 well volumes and field parameters stabilized.

☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.

☐ Purged well until field parameters stabilized.

☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-11-11

Well ID: MOORE Weather: SUNNY 70's

ADWR No: Sampler: BSO

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
15:00	Pump On						
15:05	5	10	50	7.51	22.9	415.7	
15:10	10	10	100	~~7.4~~ 7.38	21.7	415.8	
15:15	15	10	150	7.31	22.5	419.0	
15:20							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
MOORE	15:20	Poly	250	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: well head is buried.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/11/11

Well ID: ~~PZ-64~~ NOTEMAN | Weather: Sunny

ADWR No: 212483 | Sampler: MML

WELL DATA

Well Depth (ft bls):	470
Casing Diameter (in):	5
Static Water Level (ft bmp):	N/A
Casing Volume (gal):	x3 = 225
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
08:51	Pump On						
0856	5	9	45	6.37	~~72.5~~ 22.8	1270	
0901	10	9	90	6.80	23.3	1250	
0906	15	9	135	6.93	23.5	1260	
0911	20	9	180	6.94	23.5	1260	
0916	25	9	225	6.96	23.4	1250	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NOTEMAN	0920	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☑ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Last available WL = 327.54

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 12-7-11

Well ID: NSD-02 Weather: Cold

ADWR No: Sampler: BDD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 109.41

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
							k

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead.
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: QLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 12-7-11

Well ID: NSP-03 Weather: Cold

ADWR No: Sampler: BSD

WELL DATA

Well Depth (ft bls): /

Casing Diameter (in):

Static Water Level (ft bmp): 89.30

Casing Volume (gal): / x3 =

Total Volume Purged (gal): /

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
							k

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead.
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1-0 Date: 10/13/11

Well ID: NWC-02 Weather: Sunny 70s

ADWR No: Sampler: MMC

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1000		N/A		7.28	22.6	370	
1005				7.42	22.0	360	
1010				7.45	21.9	370	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-02	1012	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☑ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10/13/11

Well ID: NWC-03 Weather: Sunny

ADWR No: Sampler:

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0900		N/A		7.08	21.6	990	
0905				7.19	21.5	970	
0910				7.23	21.6	960	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-03	0912	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected. – See NWC-03 CAP
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Well on for ~2hrs.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/13/11

Well ID: NWC-03 CAP | Weather: sunny

ADWR No: 627684 | Sampler: MMC

WELL DATA

Well Depth (ft bls): 43

Casing Diameter (in):

Static Water Level (ft bmp): 134.73

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: WLD

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: | Date: 10/13/11

Well ID: ~~AMW#4~~ NWC-04 | Weather: sunny

ADWR No: 55-551849 | Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0811		N/A		6.79	22.7	780	
0816				7.28	22.9	790	
0821				7.39	23.1	800	
0826				7.46	23.3	770	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	0829	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☑ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Well has been running

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1 Date: 11/22/11

Well ID: NWC-04 Weather: Sunny, 50's

ADWR No: 55-551849 Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): N/A

Casing Volume (gal): N/A x3 =

Total Volume Purged (gal): N/A

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1012				7.30	22.3	873.5	
1016				7.37	22.5	862.2	
1020				7.36	22.9	853.5	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	10:24	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead.
- ☐ No water level measurement collected. Obstruction in well.
- ☑ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Pump running on and off

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1 | Date: 12/8/11

Well ID: NWC-04 | Weather: Sunny 40s

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): N/A

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
1013				7.26	21.8	884.8	
1019				7.21	22.3	902.6	
1024				7.33	22.6	881.6	
1029				7.33	22.3	872.2	
1031				—	—	—	Sample
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	10:31	Poly	250	1	300.0	N	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead.
- ☐ No water level measurement collected. Obstruction in well.
- ☑ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/13/11

Well ID: NWC-060 | Weather: Sunny 70's

ADWR No: 575700 | Sampler: MML

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
0931		N/A		7.36	22.4	350	
0936				7.48	22.4	350	
0941				7.51	22.3	340	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-060	0944	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☑ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Running about 30 min

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-11-11

Well ID: PALMER Weather: SUNNY 70s

ADWR No: Sampler: BSD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): NA

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
				7.85	22.0	510.9	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PALMER	13:52	Pdy	250ml	1	300-0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other: NO Purge Sample From tank

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/12/11

Well ID: PARRA Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 355

Casing Diameter (in): 6

Static Water Level (ft bmp): N/A

Casing Volume (gal): N/A x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1503	Pump On						
1513	10	5	50	7.28	22.5	1070	
1518	15	5	75	7.30	22.5	1080	
1523	20	5	100	7.35	22.2	1080	
1530	27	5	135	7.45	22.2	1076	
1538	35	5	175	7.44	22.3	1070	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PARRA	15:42	Poly	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☑ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/11/11

Well ID: PIONKE Weather: SUNNY

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls):	300
Casing Diameter (in):	6
Static Water Level (ft bmp):	153.87
Casing Volume (gal):	146 x3 = 438
Total Volume Purged (gal):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1613	Pump On						
1630	17	4	68	6.95	21.8	1120	
1650	47	4	148	6.92	21.7	1120	
1710	67	4	228	6.99	21.4	1110	
1730	87	4	308	7.00	21.2	1110	
1750	107	4	388	7.01	21.0	1100	
1805	122	4	448	6.98	20.8	1100	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
PIONKE	18:	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-12-11

Well ID: RAMIREZ | Weather: SUNNY 70's

ADWR No: | Sampler: BSD

WELL DATA

Well Depth (ft bls):	300'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	163.09
Casing Volume (gal):	202 x3 = 606
Total Volume Purged (gal):	624

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
11:20	Pump On						
11:40	20	12	240	7.47	23.0	412.6	
11:50	30	12	360	7.42	~~23~~ 23.9	410.6	
12:00	40	12	480	7.42	23.2	410.5	
12:10	50	12	600	7.40	23.3	412.7	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RAMIREZ	12:12	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: Date: 10/12/11

Well ID: RAY Weather: Sunny

ADWR No: Sampler: MML

WELL DATA

Well Depth (ft bls): 100

Casing Diameter (in): 6"

Static Water Level (ft bmp): 53.63

Casing Volume (gal): 168 x3 = 204

Total Volume Purged (gal):

7 gpm

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1644	Pump On						
1649	5	8	40	6.90	24.0	1250	
1654	10	8	80	7.06	21.2	1240	
1659	15	8	120	7.05	20.7	1240	
1707	23	8	184	7.03	21.8	1250	
1712	28	8	224	7.06	21.6	1250	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RAY	17:17	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

☑ Water level measurement collected.

☐ No water level measurement collected. No access to wellhead/No port in wellhead

☐ No water level measurement collected. Obstruction in well.

☐ No water level measurement collected. Well is pumping.

☐ Other:

WELL PURGING INFORMATION

☑ Purged 3 well volumes and field parameters stabilized.

☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.

☐ Purged well until field parameters stabilized.

☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-12-11

Well ID: ROGERS 596 Weather: SUNNY 80's

ADWR No: Sampler: BSD

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 138.09

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: WLO

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-12-11

Well ID: ROGERS 803 Weather: SUNNY 80's

ADWR No: Sampler: BJB

WELL DATA

Well Depth (ft bls): 140

Casing Diameter (in): 6"

Static Water Level (ft bmp):

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
15:30	Pump On						
15:35	5	7	35	7.45	22.3	658.4	
15:40	10	7	70	7.39	21.6	663.5	
15:45	15	7	105	7.41	21.8	665.3	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ROGERS 803	15:47	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [ ] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [x] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments: 138.09 in ROGERS 596.

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/13/11

Well ID: ROGERS E | Weather: Sunny 80s

ADWR No: 216018 | Sampler: MML

WELL DATA

Well Depth (ft bls): 290'

Casing Diameter (in): 6"

Static Water Level (ft bmp): 153.79

Casing Volume (gal): 200 x3 = 600

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1205	Pump On						
1215	10	10	100	7.50	22.2	380	
1225	20	10	200	7.53	22.1	370	
1235	30	10	300	7.45	22.0	370	
1245	40	10	400	7.53	22.1	370	
1255	50	10	500	7.44	22.3	370	
1305	60	10	600	7.52	22.2	370	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ROGERS E	1308	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☑ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☑ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Hanna meter

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10/13/11

Well ID: RUIZ | Weather: SUNNY 70's

ADWR No: | Sampler: MML

WELL DATA

Well Depth (ft bls): 312

Casing Diameter (in): 6"

Static Water Level (ft bmp): N/A

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
11:19	Pump On						
11:24	5	4.5	22.5	6.97	22.5	790	
11:28	9	4.5	40.5	7.13	21.7	810	
11:32	13	4.5	62.5	7.17	21.6	810	
11:35	16	4.5	72.0	7.19	21.5	810	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RUIZ	11:39	POLY	250	1	300.0	—	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☑ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☑ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: Sounder lost tension at ~235ft

3 casings ~ 80gal (previous)

Tank filling

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: ~~1-11~~ 10-12-11

Well ID: SCHWARTZ Weather: Sunny 80s

ADWR No: Sampler: BSD

WELL DATA

Well Depth (ft bls):	305
Casing Diameter (in):	6"
Static Water Level (ft bmp):	127.51
Casing Volume (gal):	262 x3 = 786
Total Volume Purged (gal):	800

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
14:00	Pump On						
14:20	20	10	200	7.31	23.6	631.2	
14:40	40	10	400	7.35	22.6	633.0	
15:00	60	10	600	7.37	21.9	637.2	
15:10	70	10	700	7.35	22.4	635.8	
15:22							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
SCHWARTZ	15:20	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No:		Client:	Freeport Copper Queen Branch
Task No:		Date:	12-8-11
Well ID:	TM-10 - Border Patrol	Weather:	Sunny 63°
ADWR No:		Sampler:	Christopher L Sherman

WELL DATA

Well Depth (ft bls):	290'
Casing Diameter (in):	
Static Water Level (ft bmp):	Below Airline
Casing Volume (gals):	
3 Casing Volumes (gals):	

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1214							
1215							BS after 10 seconds
1240							BS after 10 seconds
1250				6.47	19.7	381	
1300				6.84	19.6	382	
1315				6.95	19.6	381	Sampled

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments
TM-10	1315	plastic	250 ml	1	EPA 300.0	none	filtered

Additional Comments:

Sounded to 283', bottom of Airline - No water
Started pump - immediately discharged water for Appox 10 seconds

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-12-11

Well ID: TV1 713 Weather: Sunny 70's

ADWR No: Sampler: BSO

WELL DATA

Well Depth (ft bls):

Casing Diameter (in):

Static Water Level (ft bmp): 130.33

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
	Pump On						
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☐ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: LO Date: 10-12-11

Well ID: TV1 875 Weather: Sunny 80s

ADWR No: Sampler: BSD

WELL DATA

Well Depth (ft bls):	330
Casing Diameter (in):	8"
Static Water Level (ft bmp):	NA
Casing Volume (gal):	~ 525 x3 = 1575
Total Volume Purged (gal):	7500

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
13:25	Pump On						
13:30	5	500	2500	7.40	22.5	892.2	
13:35	10	500	5000	7.33	21.9	878.4	
13:40	15	500	7500	7.35	22.7	868.5	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TV1875	13:41	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☒ Purged 3 well volumes based on previous water level and field paremeters stabilized. -Based on TV1 713
- ☐ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments: SWL at 713 = 130.33
Q = 500 gpm based on Groundskeeper

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-12-11

Well ID: WEED | Weather: Sunny 70's

ADWR No: | Sampler: BSD

WELL DATA

Well Depth (ft bls): 320

Casing Diameter (in):

Static Water Level (ft bmp): NA

Casing Volume (gal): x3 =

Total Volume Purged (gal):

Casing Capacity	
Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
16:05	Pump On						
16:10	5	5	25	7.69	21.8	381.4	
16:20	15	5	75	7.62	21.6	382.8	
16:25	20	5	100	7.62	21.7	382.8	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEED	16:27	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- ☐ Water level measurement collected.
- ☒ No water level measurement collected. No access to wellhead/No port in wellhead
- ☐ No water level measurement collected. Obstruction in well.
- ☐ No water level measurement collected. Well is pumping.
- ☐ Other:

WELL PURGING INFORMATION

- ☐ Purged 3 well volumes and field parameters stabilized.
- ☐ Purged 3 well volumes based on previous water level and field paremeters stabilized.
- ☒ Purged well until field parameters stabilized.
- ☐ Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 Client: Freeport Copper Queen Branch

Task No: 1.0 Date: 10-13-11

Well ID: WEISKOPF Weather: SUNNY 80's

ADWR No: Sampler: BJD

WELL DATA

Well Depth (ft bls):	200
Casing Diameter (in):	6"
Static Water Level (ft bmp):	148.30
Casing Volume (gal):	77 x3 = 231
Total Volume Purged (gal):	250

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
13:30	Pump On						
13:40	10	10	100	7.15	24.0	1267	
13:45	15	10	150	7.08	23.1	1288	
13:50	20	10	200	7.07	22.8	1299	
							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
WEISKOPF	13:55	Poly	250 mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [x] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [x] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES

Groundwater Sampling Form

Project No: 055038 | Client: Freeport Copper Queen Branch

Task No: 1.0 | Date: 10-12-11

Well ID: ZANDER | Weather: SUNNY, 80s

ADWR No: | Sampler: BSD

WELL DATA

Well Depth (ft bls):	280'
Casing Diameter (in):	6"
Static Water Level (ft bmp):	149.50
Casing Volume (gal):	192 x3 = 576
Total Volume Purged (gal):	600

Casing Capacity

Nominal Size (inches)	Gallons per Linear Foot
2	0.16
4	0.65
5	1.02
6	1.47
8	2.61
10	4.08

Casing Volume = gallons/foot * water column (feet)

FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
12:25	Pump On						
12:35	10	15	150	7.42	23.1	428.9	
12:45	20	15	300	7.33	22.1	426.3	
12:55	30	15	450	7.35	22.2	426.2	
13:06							Pump Off

FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)

SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
ZANDER	13:05	Poly	250mL	1	300.0	Ø	Y

WATER LEVEL MEASUREMENT COLLECTION

- [X] Water level measurement collected.
- [ ] No water level measurement collected. No access to wellhead/No port in wellhead
- [ ] No water level measurement collected. Obstruction in well.
- [ ] No water level measurement collected. Well is pumping.
- [ ] Other:

WELL PURGING INFORMATION

- [X] Purged 3 well volumes and field parameters stabilized.
- [ ] Purged 3 well volumes based on previous water level and field paremeters stabilized.
- [ ] Purged well until field parameters stabilized.
- [ ] Other:

Additional Comments:

CLEAR CREEK ASSOCIATES