

**ANNUAL GROUNDWATER MONITORING REPORT FOR 2015**

**MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07  
COCHISE COUNTY, ARIZONA**



Prepared for:

**FREEMPORT MINERALS CORPORATION  
COPPER QUEEN BRANCH**  
36 West Highway 92  
Bisbee, Arizona 85603

Prepared by:

**CLEAR CREEK ASSOCIATES, P.L.C.**  
221 North Court Avenue, Suite 101  
Tucson, Arizona 85701

March 1, 2016

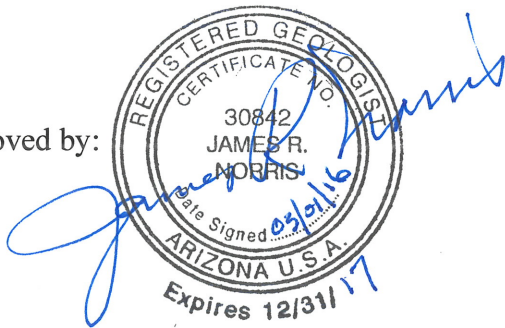
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Approved by:



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James R. Norris  
Arizona Registered Geologist No. 30842

March 1, 2016



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## 1. INTRODUCTION

This annual groundwater monitoring report provides the results of activities conducted in calendar year 2015 for the Mitigation Plan (Clear Creek Associates, 2015b) submitted to Arizona Department of Environmental Quality (ADEQ) in March 2015. The Mitigation Plan was submitted pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007) between ADEQ and Freeport Minerals Corporation Copper Queen Branch (CQB). ADEQ provided a conditional approval of the annual groundwater monitoring and groundwater monitoring report provisions of the Mitigation Plan while the plan is in review (ADEQ, 2015).

### 1.1 Mitigation Plan

The Mitigation Plan describes the process that will be followed to implement the mitigation action<sup>1</sup> for a groundwater plume of sulfate in the vicinity of the Concentrator Tailing Storage Area (CTSA) near Naco, south of Bisbee, Arizona (Figure 1). The mitigation action addresses potential affects<sup>2</sup> to existing drinking water supplies. Drinking water supplies in the vicinity of the plume do not exceed the sulfate action level of 250 milligrams per liter (mg/L) at this time because CQB mitigated previously affected supplies (CQB, 2013) under a separate plan (Clear Creek Associates, 2012) approved by ADEQ (ADEQ, 2012).

The mitigation action being implemented by CQB is Alternative 1C, which was identified as the recommended alternative by a Feasibility Study (Clear Creek Associates, 2014b) submitted to and approved by ADEQ (ADEQ, 2014). The mitigation action contains the following components:

- a water supply study to identify a potential alternate groundwater source for public water supply mitigation, if needed,
- expanded groundwater monitoring to track plume migration in the vicinity of public drinking water supplies in the Naco area and to document sulfate concentrations at the leading edge of the plume for the purposes of establishing sentinel wells with action

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<sup>1</sup> The term mitigation action encompasses all actions implemented under the Mitigation Plan. If a contingent mitigation measure is implemented or the implemented measures are changed due to adaptive management, then the term mitigation action encompasses the contingency or change.

<sup>2</sup> The terms “affect” and “affected”, with reference to a drinking water supply, are defined for the purpose of the Mitigation Plan as indicating a water supply with an average sulfate concentration exceeding 250 milligrams per liter due to sulfate originating from the Concentrator Tailing Storage Area.

levels that, if exceeded, would trigger a contingent mitigation action at a public supply, if needed,

- long term plume monitoring to monitor sulfate at public and private drinking water supplies and to describe the large scale geometry of the plume over time, and
- annual review of Arizona Department of Water Resources (ADWR) well registry records to identify new drinking water supply wells within a mile of the plume.

## **1.2 Scope of Annual Groundwater Monitoring Report**

The Mitigation Plan describes the scope of the annual groundwater monitoring report as follows:

*“Groundwater monitoring reports will provide the water quality and water level data collected under the expanded groundwater monitoring ... and long term plume monitoring ... programs. The results of well drilling, installation, testing, and monitoring for expanded groundwater monitoring will be incorporated into the groundwater monitoring report as the wells are installed and data become available. The annual ADWR well records review ... will also be provided in the groundwater monitoring report. The reporting period will be a calendar year (i.e., January 1 through December 31). The groundwater monitoring report will be submitted by March 31 of the year following the reporting period.”*

The primary objective of the annual groundwater monitoring report is to provide water quality and water level data collected in 2015 for long term plume monitoring, expanded groundwater monitoring, and the water supply study. As described by the Mitigation Plan, the annual groundwater monitoring reports will transmit data to ADEQ with little interpretation. Analysis and evaluation of the monitoring data are provided in mitigation performance review reports submitted to ADEQ under the Mitigation Plan.

## **1.3 Sources of Groundwater Monitoring Data in 2015**

This section reviews the projects that generated groundwater monitoring data in 2015.

### **1.3.1 Long Term Plume Monitoring**

The long term plume monitoring program monitors the sulfate concentration at public and private drinking water supplies, and monitors water levels and sulfate levels at a site-wide array

of monitoring wells to track the large scale geometry and concentration of the plume. The objectives of long term plume monitoring are:

- determination of the sulfate concentration in drinking water supplies within one-mile of the outer edge of the sulfate plume (i.e., the 250 mg/L sulfate concentration contour),
- identification of the plume margin for ongoing delineation of the plume extent and assessment of plume migration (plume edge monitoring),
- documentation of the sulfate concentrations in the plume and areas distal to the plume to monitor long term concentration trends (regional monitoring), and
- measurement of water levels in the vicinity of the plume to document potentiometric conditions.

Groundwater sampling and water level measurement for long term plume monitoring were conducted by CQB and Clear Creek Associates personnel. Table 1 provides the groundwater monitoring schedule for the long term plume monitoring program. The groundwater sampling and analysis methods for groundwater monitoring under the Mitigation Order are described in the Quality Assurance Project Plan (QAPP) contained in Appendix F of the Work Plan (HGC, 2008). Dissolved sulfate is the only constituent monitored.

Figure 2 is a geologic map (Hayes and Landis, 1964) showing the monitoring area and identifying wells where data reported herein have been collected. The well locations are identified by name on Figures 3 and 4. Appendices A and B contain field data forms and laboratory reports, respectively, for samples collected in 2015.

### 1.3.2 Expanded Groundwater Monitoring Program

The expanded groundwater monitoring program monitors the position of the plume in the immediate vicinity of the existing Arizona Water Company and Naco Water Company public drinking water supplies near Naco. The results of this monitoring will be used to identify sentinel well locations near the public supplies and sentinel well sulfate action levels that would, if exceeded, initiate a contingent mitigation. Well installation and testing for the expanded groundwater monitoring program were completed and reported in 2015 (Clear Creek Associates, 2015d).

Basin fill wells installed for the expanded groundwater monitoring program are BMO-2014-1BL, BMO-2014-1BU, BMO-2014-2BL, BMO-2014-2BU, BMO-2014-3BL, BMO-2014-3BU, BMO-2014-4B, BMO-2014-4BL, BMO-2015-1B, BMO-2015-1BL, BMO-2015-2B, and BMO-



2015-2BL (Figure 4). The expanded groundwater monitoring program wells are being sampled for eight (8) quarters to determine baseline conditions. Sulfate and water level data from the expanded groundwater monitoring program wells are included in this report.

### 1.3.3 Water Supply Study

The water supply study investigated potential sources of potable groundwater as a contingency in the event that public drinking water supply wells near Naco become affected by the sulfate plume. A water exploration well, LADD 635, was installed in the basin fill west of Naco in 2015 (Figure 4). The well screen in LADD 635 extends from 158 to 490 feet below land surface and fully penetrates the basin fill aquifer. A report for the water supply study is in preparation and will be submitted to ADEQ by July 1, 2016.

LADD 635 was sampled once for water quality in July 2015. Water levels are being monitored at LADD 635 quarterly during the baseline monitoring of wells installed for the expanded groundwater monitoring program. Sulfate and water level data for Ladd 635 are included in this report.

## **1.4 ADWR Well Records Review**

The purpose of the ADWR well records review is to identify new existing wells that are installed within one mile of the edge of the plume. If a new drinking water supply well is identified within a mile of the plume, CQB offers to sample the well and adds it to the long term plume monitoring schedule, if acceptable to the well owner. The review of ADWR well registry records is reported in the annual groundwater monitoring report to maintain a current list of drinking water supply wells in the vicinity of the plume for monitoring under the Mitigation Plan.

## 2. GROUNDWATER MONITORING RESULTS

### 2.1 Sulfate Data

Sulfate analytical results for 2015 are tabulated in Table 2, along with the results of previous monitoring under the Mitigation Order. Historical sulfate concentration data collected prior to the Mitigation Order are reported and evaluated in the Aquifer Characterization Report (Clear Creek Associates, 2010).

Water quality samples are collected from wells site-wide in the first and third quarters of the year (Table 1). The third quarter has the largest number of samples and the greatest geographic coverage. Figures 5 and 6 are sulfate concentration contour maps for the first and third quarters of 2015. Water quality samples at the west edge of the plume were collected quarterly in 2015 for baseline monitoring under the expanded groundwater monitoring program. Figures 7 through 10 are sulfate concentration maps of the west edge of the plume in the first through fourth quarters of 2015. In Figures 5 through 10, concentration contouring is based on the highest sulfate concentration measured at co-located wells and the most recent sample result at wells with multiple measurements during a quarter. The extent of the sulfate plume and the sulfate contours drawn on these figures is based on consideration of both historical and 2015 sulfate concentration data.

Figure 11 shows sulfate concentrations through time at public drinking water supply wells. The sulfate concentration at the AWC wells were all less than 80 mg/L in 2015, and less than the 150 mg/L temporary sulfate action level for the AWC wellfield set by the Mitigation Plan. The NWC wells NWC-02 and NWC-06 had sulfate concentrations less than 10 mg/L in 2015. Sulfate concentrations at NWC-04 near Bisbee Junction, which is believed to be at the receding edge of the plume, ranged between 177 and 230 mg/L in 2015.

### 2.2 Water Elevation Data

Groundwater elevation data collected in 2015 are listed in Table 3, along with previous data collected for the Mitigation Order. Groundwater elevations were calculated using depth to water measurements made under static (non-pumping) conditions whenever possible.

Similar to sulfate sampling, site-wide water level measurements are made in the first and third quarters of the year (Table 1). Figures 12 and 13 are site-wide groundwater elevation contour maps for the first and third quarters of 2015. In 2015, additional water level data were collected

in the vicinity of wells installed for the expanded groundwater monitoring program. The additional data were collected at ANDERSON 396, AWC-02, AWC-03, AWC-04, AWC-05, BMO-2008-5B, BMO-2008-6B, BMO-2010-3B, COB MW-2, COB MW-3, COOPER C, HOBAN, HOWARD NR, KEEFER, LADD 977, MCCONNELL 265, NSD-02, NSD-03, NWC-02, NWC-03 CAP, NWC-06, PIONKE 395, RAMIREZ, ROGERS E, SCHWARTZ, THOMPSON 151, TVI-236, TVI-713, WEISKOPF 802, and ZANDER. These data allow groundwater elevations at the western edge of the sulfate plume to be portrayed with greater resolution. The additional measurements will be made during the baseline monitoring period for the expanded groundwater monitoring wells. Figures 14 through 17 are groundwater elevation contour maps for the west edge of the plume in quarters 1 through 4 of 2015. In Figures 12 through 17, the most recent depth to water measurement is used for contouring at wells with multiple measurements during a quarter.

Figures 18 and 19 show groundwater elevations over time for BMO monitor wells with screened intervals in basin fill. Groundwater elevations in BMO monitor wells screened in basin fill decreased from 2009 through 2012 and have been relatively steady since 2013. Figure 20 shows hydrographs for BMO monitor wells in bedrock. Groundwater elevations in BMO monitoring wells screened in bedrock show various patterns depending on the location and depth of the well. Water levels in bedrock wells beneath the basin fill tend to decline until 2012, then stabilize like the basin fill wells. Water levels in shallow bedrock wells near Bisbee Junction have increased in elevation over time. Section 4.2.3.2 of the Aquifer Characterization Report (Clear Creek Associates, 2010) has a more detailed explanation of the different potentiometric systems in bedrock.

### **2.3 Quality Assurance/Quality Control**

A data verification report is prepared for quality assurance and quality control purposes. The data verification report evaluates field and laboratory quality assurance data for acceptability in the context of data quality objectives for groundwater monitoring identified in the QAPP. The data verification report for 2015 is in Appendix C. Based on the data verification review, the field measurements and analytical results collected in 2015 are of acceptable quality for use in monitoring activities conducted pursuant to the Mitigation Order.

### **2.4 ADWR Well Records Review**

Groundwater wells installed in Arizona are required to be registered with ADWR. Appendix C contains the ADWR well records review for 2015. The ADWR well records review was

conducted using a version of the well records database current through January 2016. The following steps were conducted for the review:

- Identify registered wells within one mile of the sulfate plume that have been added to the ADWR Program 55 Well Registry Database since the last well records review in April 2012.
- Categorize the new wells based on water use to identify potential drinking water sources.
- Verify well status and usage through well owner interviews for wells that cannot be placed in a usage category using available data sources.

The 2015 ADWR well records review identified 18 wells installed within a mile of the plume since April 2012. Fifteen (15) of the new wells are monitoring wells installed by CQB, and three (3) are private wells. Two of the new private wells, BOOTH and POWER 639, were previously identified as drinking water supply wells and sampled by CQB (Table 2). BOOTH was sampled from January to October 2013, but the well owner has since discontinued participation in the sampling program. POWER 639 is no longer used as a drinking water supply and is currently being mitigated by CQB by connection to Arizona Water Company service. One new well, OLMOS, is a drinking water well to which access for sampling was obtained in 2016. Consequently, there are no data for OLMOS in 2015. OLMOS was added to the schedule for long-term groundwater monitoring (Table 1). The LADD 635 well installed in 2015 was not identified for the well records review because it is more than a mile from the plume, placing it outside the review area.

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## **TABLES**

**TABLE 1**  
**Schedule for Long Term Plume Monitoring**

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter
ANDERSON 396	613396	PNDW	RM	WLO	WLO	✓
ANDERSON 458	221458	PDWS	DWS (Mit)		✓	
ASLD 435	616435	STOCK	RM	WLO	WLO	
AWC-02	616586	PWS	DWS (>2000)	✓	✓	
AWC-03	616585	PWS	DWS (>2000)	✓	✓	
AWC-04	616584	PWS	DWS (>2000)	✓	✓	
AWC-05	590620	PWS	DWS (>2000)	✓	✓	
BANKS 986	647986	PDWS	DWS (>2000)		✓	
BANKS 987	647987	PNDW	RM	WLO	WLO	
BARTON 919	644919	PNDW	RM	WLO	WLO	
BIMA	577927	PNDW	RM			✓
BMO-2008-1G	909474	MW	PE (Lateral)	✓	✓	
BMO-2008-3B	909147	MW	PE (Lateral)	✓	✓	
BMO-2008-4B	910096	IRR	PE (Below)	WLO	✓	
BMO-2008-5B	909653	PDWS	DWS (<2000)	✓	✓	
BMO-2008-5M	909552	MW	PE (Lateral)	✓	✓	
BMO-2008-6B	909146	MW	PE (Lateral)	✓	✓	
BMO-2008-6M	909019	MW	PE (Lateral)	✓	✓	
BMO-2008-7M	908794	MW	PE (Below)	WLO	✓	
BMO-2008-8B	910097	MW	RM	WLO	WLO	✓
BMO-2008-8M	909711	MW	PE (Below)	WLO	✓	
BMO-2008-9M	909255	MW	PE (Below)	WLO	✓	
BMO-2008-10GL	909435	MW	RM	WLO	WLO	✓
BMO-2008-10GU	909272	MW	RM	WLO	WLO	✓
BMO-2008-11G	909434	MW	PE (Lateral)	✓	✓	
BMO-2008-13B	909551	MW	RM	WLO	WLO	✓
BMO-2008-13M	909760	MW	RM	WLO	WLO	✓
BMO-2010-1M	219957	MW	PE (Below)	WLO	✓	
BMO-2010-2M	219958	MW	RM	WLO	WLO	✓
BMO-2010-3B	219970	MW	PE (Lateral)	✓	✓	
BMO-2010-3M	219969	MW	PE (Lateral)	✓	✓	
BMO-2012-1M	221388	MW	PE (Lateral)	✓	✓	
BMO-2014-1BL	917393	MW	PE (Lateral)		Quarterly thru 4Q16	
BMO-2014-1BU	917394	MW	PE (Lateral)		Quarterly thru 4Q16	
BMO-2014-2BL	917452	MW	PE (Lateral)		Quarterly thru 4Q16	
BMO-2014-2BU	917453	MW	PE (Lateral)		Quarterly thru 4Q16	
BMO-2014-3BL	917527	MW	PE (Lateral)		Quarterly thru 4Q16	
BMO-2014-3BU	917494	MW	PE (Lateral)		Quarterly thru 4Q16	
BMO-2014-4B	917620	MW	PE (Lateral)		Quarterly thru 1Q17	
BMO-2014-4BL	917619	MW	PE (Lateral)		Quarterly thru 1Q17	
BMO-2015-1B	917622	MW	PE (Lateral)		Quarterly thru 1Q17	
BMO-2015-1BL	917621	MW	PE (Lateral)		Quarterly thru 1Q17	
BMO-2015-2B	917827	MW	PE (Lateral)		Quarterly thru 1Q17	
BMO-2015-2BL	917828	MW	PE (Lateral)		Quarterly thru 1Q17	
BOOTH	914931	PDWS	DWS (<2000)	✓	✓	
BURKE	212268	PDWS	DWS (>2000)		✓	
CHAMBERS	629807	PDWS	DWS (>2000)		✓	
COB MW-1	903992	MW	RM	WLO	WLO	✓
COB MW-2	903984	MW	PE (Lateral)	✓	✓	
COB MW-3	906823	MW	RM	WLO	✓	
COB WL	593116	MW	PE (Lateral)	✓	✓	
COOPER	623564	PDWS	DWS (<2000)	✓	✓	

**TABLE 1**  
**Schedule for Long Term Plume Monitoring**

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter
COOPER C	637069	MW	RM		✓	
DODSON	644927	PDWS	DWS (<2000)	✓	✓	
DOUGLASS 791	592791	PNDW	RM		WLO	
DOUGLASS 792	592792	PNDW	RM		WLO	
EAST	599796	PDWS	DWS (>2000)		✓	
ECHAVE	219449	PDWS	DWS (>2000)		✓	
EPPELE 641	805641	PDWS	DWS (>2000)		✓	
FRANCO 383	221383	PDWS	DWS (Mit)		✓	
FULTZ	212447	PDWS	RM		✓	
GARNER 557	558557	PNDW	RM	WLO	WLO	
GARNER 635	587635	PDWS	DWS (Mit)		✓	
GOAR RANCH	610695	PNDW	RM	WLO	WLO	
HOBAN	805290	MW	RM	WLO	✓	
HOWARD NR	NR	PNDW	RM	WLO	WLO	✓
HOWARD 312	221312	PDWS	DWS (Mit)		✓	
KEEFER	209744	PDWS	DWS (>2000)		✓	
LADD 251	520251	PNDW	RM	WLO	WLO	
LADD 538	505538	PNDW	RM	WLO	WLO	
LADD 635	224635	STOCK	RM	Quarterly WLO through 1Q17		
LADD 837	519837	PNDW	RM	WLO	WLO	
LADD 977	642977	STOCK	RM	WLO	WLO	
MARCELL	NR	PNDW	RM			✓
MCCONNELL 265	539265	PNDW	RM	WLO	WLO	✓
MCCONNELL 459	221459	PDWS	DWS (Mit)		✓	
METZLER	35-71891	PNDW	RM	WLO	WLO	
MOORE	538847	PDWS	DWS (>2000)		✓	
NESS	509127	PDWS	DWS (>2000)		✓	
NOTEMAN	212483	PNDW	RM			✓
NSD-02	527587	MW	RM	WLO	WLO	
NSD-03	527586	MW	RM	WLO	WLO	
NWC-02	562944	PWS	DWS (>2000)	✓	✓	
NWC-03 CAP	627684	PNDW	RM	WLO	WLO	
NWC-04	551849	PWS	DWS (<2000)	Quarterly		
NWC-06	575700	PWS	DWS (>2000)	✓	✓	
OLMOS	224745	PDWS	DWS	WLO	✓	
OSBORN	643436	PDWS	DWS (>2000)		✓	
PALMER	578819	PDWS	DWS (>2000)		✓	
PANAGAKOS	35-76413	PDWS	PE (Lateral)	✓	✓	
PARRA	576415	PNDW	RM			✓
PIONKE 395	613395	PNDW	RM	WLO	WLO	✓
PIONKE 517	221517	PDWS	DWS (Mit)		✓	
POOL	509518	PDWS	DWS (>2000)		✓	
POWER 639	222639	PDWS	DWS (<2000)	✓	✓	
RAMIREZ	216425	PDWS	DWS (>2000)	WLO	✓	
RAY	803772	PDWS	DWS (>2000)		✓	
ROGERS 596	573596	PNDW	RM	WLO	WLO	
ROGERS 803	641803	PDWS	DWS (<2000)	✓	✓	
ROGERS E	216018	PDWS	DWS (>2000)		✓	
RUIZ	531770	PDWS	DWS (<2000)	✓	✓	
SCHWARTZ	210865	PDWS	DWS (<2000)	✓	✓	
STEPHENS	808560	PNDW	RM	WLO	WLO	
SWAN	NR	PDWS	DWS (>2000)		✓	

**TABLE 1**  
**Schedule for Long Term Plume Monitoring**

Well Name	ADWR 55 Registry Number	Well Use	Monitoring Purpose	Semiannual Sampling First Quarter	Annual Sampling Third Quarter	Biennial Sampling Third Quarter
THOMPSON 151	612151	PNDW	RM	WLO	WLO	
THOMPSON 341	218341	PDWS	DWS (>2000)		✓	
TM-02A	522574	MW	RM	WLO	WLO	✓
TM-06 MILLER	522695	MW	RM	WLO	WLO	✓
TM-07	522576	MW	PE (Lateral)	✓	✓	
TM-10 USBP	522696	MW	RM	✓	✓	
TM-15 MILLER	522699	MW	RM		✓	
TM-16	522578	MW	RM	WLO	WLO	✓
TM-19A	522580	MW	RM		✓	
TM-42	562554	MW	RM	WLO	WLO	✓
TVI 236	802236	IRR	PE (Lateral)	✓	✓	
TVI 713	567713	PNDW	RM	WLO	WLO	
TVI 875	568875	IRR	RM		✓	
WEED	544535	PDWS	DWS (<2000)	✓	✓	
WEISKOPF 802	641802	PNDW	RM	WLO	WLO	✓
WEISKOPF 897	220897	PDWS	DWS (Mit)		✓	
ZANDER	205126	PDWS	DWS	WLO	✓	

Notes:

35-71891 ADWR 35 Database  
 ADWR Arizona Department of Water Resources  
 NR No Record

Well Use

PWS Public Water Supply  
 PDWS Private Drinking Water Supply  
 PNDW Private Non-Drinking Water  
 IRR Irrigation  
 MW Monitoring Well  
 STOCK Stock-Wildlife Watering

Monitoring Purpose

DWS (<2000) Drinking Water Supply, Greater than 2000 feet from the plume  
 DWS (>2000) Drinking Water Supply, Less than 2000 feet from the plume  
 DWS (Mit) Drinking Water Supply, Mitigation well installed below plume  
 PE (Lateral) Plume Edge Monitoring, Lateral to plume  
 PE (Below) Plume Edge Monitoring, Below plume  
 RM Regional Monitoring  
 WLO Water Level Only



**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
ANDERSON 396	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
		2/1/12	7.28	11.8	1360	551
		4/25/12	7.10	23.9	1380	657
		7/12/12	6.89	24.9	1520	667
		10/10/12	7.40	24.0	1414	574
4/7/14	7.06	17.4	1057	175		
7/11/14	7.35	21.4	1033	272		
10/6/14	7.13	27.5	974	99.0		
10/6/14 DUP	7.13	27.5	974	102.0		
ANDERSON 458	221458	9/9/12	8.34	25.9	406.3	31
		10/10/12	8.13	23.8	412.3	30.3
		1/17/13	8.06	23.7	416.0	30.9
		4/15/13	8.19	23.5	402.7	32.3
		7/18/13	8.18	24.3	401.9	23
		10/16/13	8.10	23.8	400.1	25.2
		1/9/14	8.15	22.9	399.3	26.2
		1/9/14 DUP	8.15	22.9	399.3	26.2
		4/7/14	8.16	24.0	401.6	27.5
		7/11/14	8.13	24.5	396.7	25.3
		10/6/14	8.06	25.6	384.0	26.0
		7/22/15	8.17	25.2	397.3	25

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/2/12	7.20	20.8	479.5	19.4
		4/24/12	7.23	23.0	430	15.5
		7/5/12	7.25	22.1	437.1	10.1
		10/18/12	7.48	21.6	473.6	13.0
		2/5/13	7.54	19.3	448.9	18.0
		4/11/13	7.53	22.1	471.3	17.2
		7/25/13	7.35	22.1	460.5	14.7
		10/9/13	7.53	21.2	476.4	15.5
		1/7/14	7.45	20.3	503.7	18.8
		1/7/14 DUP	7.45	20.3	503.7	18.9
5/14/14	7.34	21.0	508.4	19.2		
7/16/14	7.54	21.8	499.5	19.2		
10/15/14	7.26	23.2	520	18.9		
1/29/15	7.44	21.4	511	20.5		
7/21/15	7.62	22.5	506.7	20		
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
		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
		2/2/12	7.39	20.7	504.8	47.7
		4/24/12	7.28	22.1	450	51.8
		7/5/12	7.32	21.7	474.3	50.7
		10/18/12	7.44	21.3	477.4	51.3
		2/5/13	7.73	19.2	481.2	55
		4/11/13	7.51	22.2	486.4	66.1
		7/16/13	7.61	21.5	489.6	63.6
		10/9/13	7.57	20.5	485.8	49.4
		10/9/13 DUP	7.57	20.5	485.8	51
		1/7/14	7.62	20.4	486.3	56.6
5/14/14	7.64	20.5	493.0	61.1		
7/16/14	7.68	21.4	506.9	69.1		
10/15/14	7.38	22.2	506.0	63.4		
1/29/15	7.59	21.2	495	77.1		
7/21/15	7.63	21.6	493.5	56		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		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
		2/2/12	6.97	20.1	637.6	27.2
		4/24/12	7.10	22.1	570	25.2
		7/5/12	7.03	21.6	568.0	28.2
		7/5/12 DUP	7.03	21.6	568.0	28.1
		10/18/12	7.20	20.8	606.7	26.6
		2/5/13	7.29	19.7	616.8	26.9
		4/11/13	7.38	21.7	595.4	26.2
		7/16/13	7.30	21.0	585.7	27.0
		10/9/13	7.36	20.4	588.6	24.6
		1/7/14	7.36	19.7	651.4	23.7
		5/14/14	7.38	19.8	674.2	22.7
7/16/14	7.32	20.7	632.2	24.1		
7/16/14 DUP	7.32	20.7	632.2	22.9		
10/15/14	7.01	21.9	688	21.4		
1/29/15	7.20	21.0	687	22.9		
7/21/15	7.38	21.2	619.6	23		
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
		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
		2/2/12	7.35	21.4	427.9	19.5
		4/24/12	7.18	21.4	430	15.4
		7/5/12	7.24	22.6	432.1	19.1
		10/18/12	7.66	22.6	436.1	20.1
		2/5/13	7.57	20.2	437.7	20.1
		4/11/13	7.54	21.2	444.5	20.3
		7/16/13	7.56	21.3	454.5	18.0
		7/16/13 DUP	7.56	21.3	454.5	17.7
		10/9/13	7.58	21.3	455.3	15.4
		5/14/14	7.54	21.2	442.3	19.8
		7/16/14	7.60	22.6	470.9	20.3
10/15/14	7.38	23	452	20.8		
1/29/15	7.64	19.6	443	18.0		
7/21/15	7.67	21.9	457.9	17		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		1/31/12	7.69	20.2	1017	64.3
		1/31/12 DUP	7.69	20.2	1017	64.9
		4/11/12	7.77	22.0	1025	64.0
		7/6/12	7.66	23.7	940	78.6
		7/6/12 DUP	7.66	23.7	940	77.9
		10/4/12	7.73	22.0	845.4	62.6
		1/18/13	7.82	21.9	832.4	70.5
		4/8/13	7.87	20.7	861.7	62.9
		7/9/13	8.04	22.9	769.1	67.9
		10/15/13	7.59	21.7	1158	79.6
		1/14/14	7.77	20.9	967.4	75.2
		4/8/14	7.47	21.4	1337	113
7/8/14	7.58	22.3	1175	107		
7/8/14 DUP	7.58	22.3	1175	110		
10/21/14	7.37	22.7	1158	91.3		
7/24/15	7.67	22.6	1002	76		
BF-01	539783	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
		2/1/12	6.18	19.8	2910	1480
		8/14/12	6.00	21.5	3000	1500

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BIMA	577927	2/6/08	6.69	22.2	1335	210
		4/25/08 <sup>1</sup>	6.37	23.1	1521	190
		5/13/08 <sup>1</sup>	6.58	22.7	1489	195
		6/23/08 <sup>1</sup>	6.30	23.3	1572	225
		6/23/08 DUP	6.30	23.3	1572	196
		7/29/08 <sup>1</sup>	6.44	23.0	1647	204
		8/28/08 <sup>1</sup>	M	23.0	1776	256
		9/23/08 <sup>1</sup>	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
		2/3/12	6.48	18.5	1540	312
		4/23/12	6.57	23.9	1790	303
		7/10/12	6.06	23.7	1200	301
		11/29/12	6.51	20.6	1664	310
		3/13/13	7.29	19.8	1175	317
4/10/13	6.64	13.9	1569	308		
7/8/13	6.62	28.0	1580	301		
10/11/13	6.57	21.8	1749	301		
1/10/14	6.63	10.7	1664	297		
4/10/14	6.62	15.8	1685	300		
7/8/14	6.56	21.6	1653	297		
10/23/14	6.25	23.9	1704	227		
7/23/15	6.87	26.2	1627	270		
BLOMMER	633472	2/5/08	7.43	20.2	714	206
		4/21/08 <sup>1</sup>	7.06	21.9	753	201
		5/15/08 <sup>1</sup>	7.16	22.2	845	211
		6/23/08 <sup>1</sup>	6.93	21.5	903	193
		7/29/08 <sup>1</sup>	7.21	22.2	921	203
		8/27/08 <sup>1</sup>	7.12	22.1	864	189
		9/23/08 <sup>1</sup>	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200
		8/27/08	7.09	24.2	808	107
BMO-2008-1G	909474	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
		2/8/12	7.02	20.2	869	116
		8/14/12	6.97	21.9	959	120
		2/14/13	7.09	21.2	986	112
		8/14/13	6.96	21.6	1009	120
		2/13/14	6.76	21.1	1010	114
		7/22/14	6.87	22.0	1010	117
		2/4/15	7.35	22.1	942	116
		9/10/15	7.21	21.8	953	109



**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/23/12	6.92	21.0	695	173
		7/10/12	7.02	21.5	651	150
		2/15/13	6.63	20.4	692	163
		8/27/13	7.1	21.1	725	170
		2/11/14	7.01	20.7	729	162
		7/21/14	6.98	21.0	706	163
2/5/15	7.11	21.2	652	145		
9/14/15	7.29	21.7	638	133		
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
		2/23/12	7.21	22.3	354	10.5
		8/15/12	6.96	23.6	380	9.5
		1/15/13	7.63	22.7	370.2	10.3
		1/15/13 DUP	7.63	22.7	370.2	9.5
		4/15/13	7.75	23.0	368.2	11.2
		9/18/13	7.69	23.4	384.6	9.8
		1/9/14	7.81	22.2	371.4	11.1
		7/18/14	7.78	23.3	379.1	11.6

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/3/12	7.16	20.2	726	215
		4/18/12	6.96	21.7	712	192
		7/10/12	6.87	21.5	726	218
		10/16/12	6.69	21.4	712	207
		2/7/13	7.40	21.4	771.4	229
		2/12/13	6.49	20.7	752	227
		5/15/13	7.01	21.8	742	220
		8/20/13	7.00	21.7	792	226
		11/1/13	6.92	21.5	792	233
		2/11/14	6.88	21.5	804	230
		5/7/14	6.87	21.5	800	228
		8/19/14	6.99	21.6	795	221
11/13/14	6.92	21.9	755	228		
2/3/15	7.05	21.8	755	227		
9/8/15	7.16	22.3	764	236		
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
		2/3/12	6.99	21.5	589	130
		4/18/12	6.71	22.4	587	120
		7/10/12	6.82	22.4	592	135
		10/16/12	6.86	21.9	591	134
		2/12/13	6.65	21.6	610	139
		5/15/13	6.73	22.4	603	135
		8/20/13	7.18	22.5	640	138
		11/1/13	7.07	22.0	641	142
		2/11/14	6.84	22.1	646	138
		5/7/14	6.85	22.1	648	140
		8/19/14	6.97	22.1	645	143
		11/13/14	7.18	22.6	612	139
2/3/15	7.26	22.5	612	143		
9/8/15	7.19	23.1	615	146		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/3/12	7.28	20.1	346	23.0
		4/18/12	7.25	21.4	336	19.7
		7/10/12	6.86	21.2	328	21.9
		10/16/12	6.79	21.5	342	19.9
		2/12/13	6.87	20.7	339	16.2
		5/15/13	6.87	21.2	297	12.7
		8/20/13	7.36	21.5	310	10.6
		11/1/13	7.04	21.0	340	13.9
2/11/14	7.38	21.6	290	20.1		
5/7/14	7.48	21.1	297	13.6		
8/19/14	7.08	21.6	298	13.4		
11/13/14	7.23	21.6	305	14.9		
2/3/15	7.24	20.6	272	12.1		
9/8/15	7.26	22.2	282	11.8		
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
		2/3/12	7.03	21.2	720	206
		4/18/12	7.01	21.4	701	188
		7/10/12	6.67	21.4	702	208
		10/16/12	6.89	21.8	708	207
		2/12/13	6.71	20.5	740	204
		5/8/13	7.01	21.9	726	212
		8/20/13	6.99	21.7	772	213
		11/1/13	6.83	21.5	773	223
2/11/14	6.81	21.8	786	217		
5/7/14	6.77	21.3	788	220		
8/19/14	6.9	21.9	774	210		
11/13/14	7.14	22.0	740	218		
2/3/15	7.20	21.9	741	216		
9/8/15	7.09	23.0	750	222		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		1/30/12	7.16	22.0	454	26.4
		7/11/12	7.18	22.7	455	28.1
		2/15/13	7.23	21.8	471	25.8
		8/28/13	7.15	22.9	494	27.7
		8/28/13 DUP	7.15	22.9	494	27.8
2/13/14	7.09	22.6	494	27.8		
7/22/14	7.13	23.2	488	27.3		
9/14/15	7.51	23.4	469	30.6		
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
		1/30/12	6.22	21.2	2880	1480
		1/30/12 DUP	6.22	21.2	2880	1480
		7/12/12	6.41	21.1	2860	1440
		2/13/13	6.25	20.7	2830	1330
		8/12/13	6.38	21.3	2780	1420
7/24/14	6.26	21.2	2520	1380		
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
		1/30/12	7.36	23.9	565	77.6
		7/12/12	7.15	24.2	554	73.1
		7/12/12 DUP	7.15	24.2	554	73.2
		2/14/13	7.1	24.3	565	64.9
		8/12/13	7.19	24.6	585	65.0
		2/19/14	7.07	24.3	579	63.3
		2/19/14 DUP	7.07	24.3	579	63.4
7/24/14	7.07	24.7	569	66.8		
9/15/15	7.35	25.0	541	67.0		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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	67.0
		2/1/12	7.54	22.4	516	67.4
		7/12/12	7.68	24.2	513	68.9
		2/13/13	7.37	23.8	531	68.2
		8/12/13	7.47	24.2	553	71.1
2/18/14	7.26	23.8	569	74.1		
7/24/14	7.36	24.4	571	74.2		
9/14/15	7.68	24.7	550	85.6		
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
		2/2/12	6.45	24.8	1600	624
		7/13/12	6.71	25.7	1571	545
		2/18/13	6.45	25.4	1530	498
		2/18/13 DUP	6.45	25.4	1530	494
		8/13/13	6.57	25.5	1586	520
8/7/14	6.56	25.8	1417	442		
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
		2/1/12	6.09	19.2	3820	1870
		8/19/13	6.10	21.0	3630	1780
		BMO-2008-11G	909434	8/22/08	8.02	28.2
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
1/31/12	7.41			24.1	328	11.9
8/14/12	7.35			24.6	337	12.3
2/13/13	7.54			24.2	343	11.9
8/27/13	7.48			24.9	363	12.2
2/19/14	7.51			24.2	363	12.2
8/14/14	7.58			24.7	360	12.4
2/5/15	7.87	24.8	334	12.5		
9/14/15	7.78	25.3	335	12.3		
9/14/15 DUP	7.78	25.3	335	12.4		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/9/12	6.68	20.3	2180	1060
		7/11/12	6.55	21.2	2190	1080
		2/27/13	6.54	20.3	2160	1090
		9/4/13	6.57	20.8	2070	1050
8/19/14	6.63	21.2	1890	1070		
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
		2/6/12	8.47	23.2	1300	ND
		8/13/12	8.75	24.2	1311	397
		2/15/13	8.8	22.4	1280	383
		9/6/13	8.81	23.8	1300	402
8/20/14	8.48	23.6	1362	410		
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
		2/8/12	7.69	22.0	605	158
		4/24/12	7.08	23.4	701	150
		7/9/12	6.37	24.3	715	161
		10/17/12	7.40	23.9	699	154
		2/13/13	7.09	22.2	712	152
		5/8/13	7.12	22.5	725	160
		8/15/13	7.39	23.5	767	156
		11/4/13	7.38	22.6	774	163
		2/12/14	8.33	22.0	672	161
6/2/14	7.55	23.3	771	165		
8/4/14	7.38	23.8	772	179		
11/12/14	7.43	23.4	733	165		
9/9/15	7.59	24.2	729	170		
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
		1/30/12	6.41	21.4	2180	989
		4/18/12	6.48	21.2	2170	893
		7/9/12	6.41	21.8	2190	1030
		10/17/12	6.60	21.3	2200	998
		2/13/13	6.45	21.0	2190	962
		5/8/13	6.42	21.0	2160	996
		8/15/13	6.58	21.2	2157	978
		11/4/13	6.53	21.9	2120	998
		2/12/14	6.52	21.0	2160	1000
		5/8/14	6.46	21.0	1990	1010
		8/14/14	6.48	21.0	1940	1040
8/14/14 DUP	6.48	21.0	1940	1030		
11/12/14	6.59	21.3	2210	939		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/2/12	7.52	20.4	400.2	16.9
		2/2/2012 DUP	7.52	20.4	400.2	17.1
		4/24/12	7.30	21.8	390	16.0
		7/5/12	7.51	22.4	419.1	15.7
		10/18/12	7.58	21.6	411.9	17.0
		1/16/13	7.58	20.8	420.5	17.4
		4/16/13	7.65	21.2	415.1	17.5
		7/23/13	7.67	21.8	420	19.8
		10/8/13	7.72	20.9	420.3	16.8
		1/15/14	7.65	20.2	431.2	18.8
		5/13/14	7.66	21.0	421.2	18.0
		5/13/2014 DUP	7.66	21.0	421.2	18.0
		7/15/14	7.63	21.8	419.1	19.0
		10/14/14	7.48	22.6	395	17.4
10/14/14 DUP	7.48	22.6	395	18.1		
1/28/15	7.59	22.2	420	19.2		
7/22/15	7.67	21.8	420.1	21		
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
		2/2/12	7.68	22.0	367.1	10.6
		4/24/12	7.49	23.9	370	10.1
		7/5/12	7.66	23.7	381.8	10.3
		10/18/12	7.71	23.3	379.9	10.4
		1/16/13	7.68	22.1	383.1	10.0
		4/16/13	7.83	22.3	383.7	10.2
		4/16/2013 DUP	7.83	22.3	383.7	10.2
		7/23/13	7.80	23.4	386.0	10.7
		10/8/13	7.76	22.8	384.8	9.4
		1/15/14	7.76	22.1	389.8	9.1
		5/13/14	7.75	22.9	387.1	10.4
		7/15/14	7.74	23.1	386.9	10.2
		10/14/14	7.57	24.1	367.0	10.8
1/28/15	7.70	24.1	391	10.6		
7/22/15	7.79	23.5	383.9	8.6		
7/22/15 DUP	7.79	23.5	383.9	9.3		
BMO-2012-1M	221388	11/13/12	7.55	21.3	933.7	231
		2/27/13	6.97	22.4	793	205
		5/8/13	6.77	22.9	814	197
		8/14/13	7.09	22.9	858	202
		11/1/13	6.98	22.4	850	210
		2/13/14	7.00	22.2	883	214
		5/8/14	6.90	22.9	875	207
		7/22/14	6.99	22.6	857	210
		11/13/14	7.10	22.6	839	208
		2/4/15	7.40	22.5	843	214
9/10/15	7.29	23.3	862	216		
BMO-2014-1BL	917394	11/7/14	7.21	24.2	716	160
		1/29/15	7.46	22.2	686	167
		4/15/15	7.43	21.9	695.0	167
		7/29/15	7.57	22.8	695.0	150
		10/7/15	7.55	21.6	685.9	160
		10/7/15 DUP	7.55	21.6	685.9	160
BMO-2014-1BU	917393	11/13/14	7.46	22.1	571	84
		1/28/15	7.45	21.6	694	170
		4/15/15	7.40	21.3	735.2	189
		7/29/15	7.55	22.3	729.7	170
		10/7/15	7.51	20.9	728.8	180

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
BMO-2014-2BL	917452	11/20/14	7.34	22.8	804	210
		1/29/15	7.36	20.8	1109	463
		4/15/15	7.27	21.2	1169	463
		7/29/15	7.34	22.5	1191	450
		10/7/15	7.41	20.8	1180	470
BMO-2014-2BU	917453	12/1/14	7.35	20.8	819.2	230
		1/30/15	7.65	19.9	524	63.8
		4/15/15	7.56	20.7	536.1	64.8
		7/29/15	7.62	22.2	538.7	58
		10/7/15	7.74	20.6	541.1	62
BMO-2014-3BL	917527	2/13/15	7.34	22.4	384	7.8
		4/15/15	7.72	21.6	402.3	8.73
		7/29/15	7.72	23.1	413.7	7.9
		10/7/15	7.64	21.6	415.6	8.5
BMO-2014-3BU	917494	2/24/15	7.64	18.2	471.4	8.2
		4/15/15	7.67	20.4	469.5	8.71
		7/29/15	7.62	21.9	471.9	7.5
		10/7/15	7.62	20.4	467.9	7.8
BMO-2014-4B	917620	3/4/15	7.68	20.3	524.0	65
		4/14/15	7.61	20.9	494.7	61.7
		7/23/15	7.60	21.7	493.7	57
		10/6/15	7.70	20.5	481.9	53
BMO-2014-4BL	917619	3/1/15	7.63	21.1	671.9	170
		4/14/15	7.63	21.4	665.1	184
		7/23/15	7.66	21.9	669.7	190
		7/23/15 DUP	7.66	21.9	669.7	170
		10/6/15	7.71	21.0	660.4	180
BMO-2015-1B	917622	3/15/15	8.11	20.2	676.3	170
		4/14/15	7.59	20.9	680.1	187
		7/23/15	7.68	21.7	690.7	200
		10/6/15	7.66	20.6	681.9	190
BMO-2015-1BL	917621	3/12/15	7.70	20.8	708.2	220
		4/14/15	7.55	20.7	733.4	239
		7/23/15	7.62	22.3	747.3	260
		10/6/15	7.74	20.8	747.3	230
BMO-2015-2B	917827	3/19/15	7.43	20.0	795.2	290
		4/14/15	7.41	20.7	832.4	271
		7/23/15	7.47	22.2	847.5	290
		10/6/15	7.60	20.9	844.3	260
BMO-2015-2BL	917828	3/26/15	7.29	22.3	887.1	280
		4/14/15	7.38	20.9	860.0	305
		7/23/15	7.43	22.1	902.3	320
		10/6/15	7.54	21.2	890.3	300
BOOTH	914931	1/5/13	7.67	18.5	574.3	91.4
		6/14/13	7.61	51.1	604.2	95
		6/14/13 DUP	7.61	51.1	604.2	92.5
		7/17/13	7.75	23.2	497.6	75
		10/18/13	7.66	19.3	597.6	92.6
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
		10/10/13	7.87	21.9	469.6	27.5
		1/8/14	8.17	10.9	464.9	28.6
		4/16/14	7.80	21.1	471.0	28.3
		7/21/14	8.19	27.8	448.8	29.6
		10/21/14	8.06	22.2	456.0	29.1
8/3/15	7.72	27.4	479.3	27		



**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/6/12	7.43	21.8	434.6	9.08
		4/23/12	7.46	22.7	460	8.84
		7/17/12	7.31	22.4	410	8.41
		10/8/12	7.44	22.4	430.0	10.1
		1/10/13	7.57	21.5	440.8	9.64
		4/18/13	7.49	21.7	434.1	9.78
		7/15/13	7.40	22.7	434.6	9.81
		7/15/13 DUP	7.40	22.7	434.6	10.2
		10/10/13	7.51	21.8	439.7	10.3
		1/13/14	7.56	21.0	431.3	10.7
4/14/14	7.48	22.2	435.9	10.9		
7/10/14	7.50	22.9	436.4	11.0		
10/17/14	7.31	22.5	456.0	10.8		
7/21/15	7.48	22.7	447.7	11		
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
		7/12/12	6.74	23.4	1760	805
		2/5/13	6.95	21.5	1773	877
		7/11/13	7.17	21.4	1858	842
		7/9/14	6.95	21.5	2000	1000
		7/9/14 DUP	6.95	21.5	2000	1020
		7/27/15	6.96	21.6	1993	900

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		1/31/12	7.53	20.3	466.6	30.0
		7/12/12	7.36	21.2	630	29.2
		1/9/13	7.48	20.0	473.5	35.8
		7/25/13	7.34	20.9	485.4	40.6
		1/6/14	7.58	19.9	487.8	40.5
		7/9/14	7.52	20.5	503.5	43.7
		2/4/15	7.38	20.3	619	40.5
7/27/15	7.57	20.8	514.6	40		
7/27/15 DUP	7.57	20.8	514.6	42		
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
		7/12/12	7.34	21.4	450	39.5
		2/5/13	7.60	20.4	476.4	65.1
		2/5/13 DUP	7.60	20.4	476.4	64.7
7/25/13	7.42	21.4	485.0	66.6		
7/9/14	7.61	21.4	525.3	90.9		
7/27/15	7.56	21.6	560.3	100		
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
		7/12/12	7.07	23.2	1060	92.0
		2/5/13	7.91	21.5	1057	98.3
		7/25/13	7.23	22.7	1074	97.6
7/9/14	7.42	21.8	1132	81.5		
2/4/15	6.90	23.3	1488	73.7		
7/27/15	7.25	22.9	1221	70		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	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
7/17/13	6.97	21.6	1409	519		
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
		2/1/12	7.97	21.8	429.2	34.1
		4/10/12	7.41	22.4	426.8	32.5
		7/18/12	7.45	22.9	430	33.4
		10/9/12	7.70	22.1	432.8	34.3
		1/11/13	7.76	21.5	434.1	32.7
		4/10/13	7.72	21.1	427.5	31
		7/11/13	7.65	23.2	432.5	31.9
		10/7/13	7.68	22.7	430.5	31.4
		1/16/14	7.65	21.6	431.7	30.8
		4/10/14	7.66	22.3	433.1	31.5
		7/10/14	7.68	22.4	428.8	32.2
10/8/14	7.37	23.5	408	31.1		
1/27/15	7.67	20.5	411	29.8		
8/3/15	7.67	22.7	421.3	27		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/1/12	7.13	20.5	2024	867
		4/25/12	6.83	21.5	1960	817
		7/11/12	6.48	22.8	2030	834
		10/10/12	6.98	21.2	1985	863
		2/27/13	6.58	20.9	1805	821
		5/8/13	6.41	20.7	1744	798
		8/13/13	6.69	21.2	1739	756
11/1/13	6.61	21.2	1624	738		
2/10/14	6.69	21.6	1616	715		
5/7/14	6.48	22.5	1612	686		
7/21/14	6.63	23.1	1548	671		
11/13/14	6.87	22.4	1520	638		
9/10/15	6.84	22.8	1997	641		
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
		1/31/12	7.17	20.3	1454	50.4
		4/12/12	7.06	20.6	1492	45.4
		7/11/12	7.10	21.5	1790	54.0
		10/4/12	7.27	20.6	1626	48.7
		1/18/13	7.27	20.2	1743	51.6
		1/18/13 DUP	7.27	20.2	1743	51.6
		4/9/13	7.33	19.6	1886	74.4
		7/9/13	7.39	21.0	1825	53.6
		10/9/13	7.24	20.2	1612	63.3
		1/9/14	7.31	19.7	1586	61.4
		4/15/14	7.24	20.7	1636	58.5
		7/14/14	7.27	21.9	1651	54.4
10/16/14	7.12	21.3	1706	53.2		
1/26/15	7.46	20.2	1650	59.5		
1/26/15 DUP	7.46	20.2	1650	59.9		
7/23/15	7.34	21.1	1716	61		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	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
		2/7/12	7.26	25.3	1152	404
4/12/12	7.41	21.8	1101	407		
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
		1/31/12	7.24	20.0	610	12.8
		4/11/12	7.53	20.6	609.3	14.6
		7/9/12	7.20	21.1	580	14.2
		10/4/12	7.49	20.4	623.8	15.0
		1/17/13	7.46	20.0	613.0	13.1
		4/9/13	7.54	19.6	597.7	12.2
		7/9/13	7.46	21.2	603.6	12.1
		10/15/13	7.51	20.2	622.6	17.2
		1/14/14	7.54	20.2	632.2	15.5
		1/14/14 DUP	7.54	20.2	632.2	15.5
4/8/14	7.44	20.5	634.7	15.3		
7/8/14	7.43	20.7	618.8	13.1		
10/22/14	7.23	22.8	601.0	20.7		
7/24/15	7.50	21.0	626.5	13		
ECHAVE	219449	2/1/12	7.39	20.7	390.0	26.7
		4/23/12	7.50	22.5	440.0	26.4
		7/17/12	7.44	22.2	430	26.1
		10/9/12	7.69	21.9	404.7	26.1
		10/9/12 DUP	7.69	21.9	404.7	26.0
		1/18/13	7.61	21.7	408.5	25.4
		5/14/13	7.74	22.2	400.2	25.2
		7/17/13	7.81	22.1	406.4	24.3
		10/8/13	7.66	21.4	404.3	24.5
		1/13/14	7.68	21.0	412.4	25.7
		4/10/14	7.67	21.4	409.3	26.4
		7/17/14	7.68	21.6	405.0	26.7
		10/22/14	7.43	21.4	406.0	25.9
8/3/15	7.88	28.7	406.8	25		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		1/31/12	7.68	19.9	560.8	18.2
		4/11/12	7.74	20.6	563.8	19.5
		4/11/12 DUP	7.74	20.6	563.8	19.6
		7/6/12	7.60	21.7	560	18.8
		10/3/12	7.84	20.7	558.8	19.5
		1/17/13	7.76	19.1	559.6	18.8
		4/8/13	7.71	20.4	564.1	17.5
		4/8/13 DUP	7.71	20.4	564.1	17.4
		7/9/13	7.66	21.9	570.1	17.5
		10/15/13	7.86	21.1	682.5	31.9
1/14/14	7.97	19.1	602.8	29.0		
4/8/14	7.60	19.4	600.2	21.5		
7/8/14	7.65	21.0	596.9	21.6		
10/21/14	7.22	22.2	659	32.2		
7/24/15	7.60	21.2	638.1	23		
FLEMING	218386	7/15/10	6.98	24.2	1390	573
FRANCO 101	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
FRANCO 383	221383	9/13/12	7.66	25.0	1005	318
		10/5/12	7.63	24.4	1002	324
		11/13/12	7.67	19.8	988.2	349
		12/3/12	7.54	19.4	1001	332
		1/15/13	7.52	13.5	1010	333
		2/6/13	7.55	18.9	1004	353
		3/7/13	7.4	20.5	979.9	338
		4/10/13	7.7	20.4	1000	335
		7/10/13	7.69	25.7	1018	335
		10/16/13	7.63	21.9	1018	350
		1/14/14	7.68	20.1	1039	345
		4/8/14	7.68	24.3	1044	351
		4/8/14 DUP	7.68	24.3	1044	330
		7/14/14	7.63	26.5	1030	349
		10/8/14	7.47	23.5	954	335
		7/27/15	7.68	27.3	1047	320

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	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
		4/21/08 <sup>1</sup>	6.74	22.0	1739	137
		5/14/08 <sup>1</sup>	6.88	22.3	1532	131
		6/23/08 <sup>1</sup>	6.74	22.0	1788	111
		7/29/08 <sup>1</sup>	6.74	22.2	1989	152
		8/28/08 <sup>1</sup>	M	21.6	1889	137
		9/23/08 <sup>1</sup>	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
		2/2/12	7.38	22.7	469.5	39.2
		4/13/12	7.62	24.0	460.0	33.5
		7/11/12	7.52	24.9	520	37.7
		7/11/12 DUP	7.52	24.9	520	37.2
		10/5/12	8.09	23.1	472.9	39.1
		1/11/13	7.83	23.7	470.8	38.7
		4/15/13	7.79	23.4	471.5	40
7/10/13	7.9	25.0	469.5	36.7		
10/11/13	7.78	24.0	476.7	38.8		
1/17/14	7.81	23.2	473.6	41		
4/15/14	7.74	23.7	470.7	40.4		
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

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		3/2/10 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
HARDT	NR	2/1/12	6.57	24.1	559	42.0
HOBAN	805290	2/5/13	7.15	17.5	670.6	17.7
		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
		2/1/12	6.74	20.9	1900	993
		4/19/12	6.81	21.5	1805	868
		7/11/12	6.86	21.4	1906	1110
		10/17/12	6.74	22.0	1846	1040
		2/15/13	6.64	20.7	1934	954
		5/8/13	6.6	21.4	1903	1060
		8/13/13	6.85	21.6	1925	1030
		11/1/13	6.74	21.0	1920	1070
		2/10/14	6.64	21.0	1950	991
		5/7/14	6.69	21.1	1958	1030
7/21/14	6.69	21.6	1903	1030		
11/13/14	6.88	21.7	1965	1020		
9/10/15	6.82	22.1	1922	1030		
HOWARD 312	221312	8/14/12	8.35	26.3	629.3	69.2
		10/16/12	8.18	26.6	648.3	68.1
		2/6/13	8.18	24.1	650.3	71.9
		4/9/13	8.2	24.3	621	67.5
		7/12/13	8.25	26.8	624.9	67.9
		10/16/13	8.12	25.6	623.7	70.2
		1/8/14	8.22	24.8	620.1	70.8
		4/10/14	8.14	26	621.7	66.1
		4/10/14 DUP	8.14	26	621.7	68.2
		7/14/14	8.16	26.6	618.3	69.1
		10/10/14	7.99	26.4	621.0	66.8
7/31/15	8.17	27.4	618.8	68		



**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
HOWARD NR	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
		2/1/12	7.29	20.6	1367	630
		4/13/12	6.99	21.2	1508	632
		9/13/12	7.12	21.9	1576	699
		10/16/12	7.06	21.1	1417	576
		2/6/13	7.06	20.3	1499	679
		4/9/13	7.38	19.4	1319	521
		7/12/13	7.40	21.6	1430	590
		10/16/13	7.15	20.3	1319	522
		1/8/14	7.24	20.3	1267	462
4/10/14	7.23	20.6	1262	471		
7/14/14	7.18	21.1	1300	496		
7/14/14 DUP	7.18	21.1	1300	495		
10/10/14	6.93	23.2	1339	413		
7/31/15	7.16	21.9	1316	480		
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
		2/6/12	7.36	20.3	482.0	6.84
		4/23/12	7.23	21.6	500	7.14
		7/17/12	7.40	21.0	500	7.29
		10/9/12	7.58	20.1	506.6	8.47
		1/10/13	7.55	19.3	466.3	6.37
		4/18/13	7.58	20	475.9	7.3
		7/11/13	7.67	20.8	485.1	7.23
		7/11/13 DUP	7.67	20.8	485.1	7.24
		10/7/13	7.53	20.6	458.9	6.39
		1/7/14	7.61	19.7	464.8	6.54
		4/9/14	7.59	20.2	473.3	6.61
		7/10/14	7.49	21.6	460.5	6.66
10/8/14	7.32	22.3	429	6.35		
7/21/15	7.62	22.1	462.2	6.1		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/1/12	7.42	20.8	1557	705
		4/13/12	7.15	21.8	1560	668
		7/13/12	6.86	22.3	1730	650
		10/17/12	7.18	21.3	1546	660
		10/17/12 DUP	7.18	21.3	1546	657
		2/6/13	7.25	19.8	1553	714
		2/6/13 DUP	7.25	19.8	1553	714
		4/10/13	7.07	19.9	1578	695
7/15/13	7.09	21.4	1617	724		
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
		2/7/12	7.14	20.6	1842	847
		4/11/12	6.82	21.4	1781	833
		7/6/12	6.88	22.4	1827	851
		10/8/12	7.07	20.9	1862	934
		1/10/13	6.89	20.9	1854	902
		1/10/13 DUP	6.89	20.9	1854	889
		4/18/13	7.11	20.4	1889	884
		7/10/13	7.14	22.1	1897	898
		10/14/13	7.00	21.0	1911	908
		1/8/14	7.23	20.9	1942	985
		4/14/14	6.99	20.7	1913	963
7/14/14	6.95	21.8	1941	975		
10/7/14	6.84	22.2	1976	968		
7/31/15	7.04	21.9	1970	950		
MCCONNELL 459	221459	7/27/12	8.25	26.5	510.0	41
		10/8/12	8.12	25.3	517.3	43.4
		1/15/13	8.06	24.5	512.6	37.4
		4/10/13	8.14	23.5	487.0	35.5
		7/10/13	8.10	25.5	480.7	34.5
		10/14/13	8.04	24.9	486.7	34.6
		1/8/14	8.20	23.7	489.4	37.1
		4/14/14	8.08	24.6	474.3	35.9
		9/9/14	8.12	25.1	465.7	33.0
		10/7/14	7.94	25.7	478.0	34.1
7/31/15	8.13	25.9	453.6	29		
LADD 635	224635	7/22/15	7.42	22.4	372.6	6.2

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	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		
2/7/12	7.36	21.5	1019	326		
4/12/12	7.34	21.1	1009	320		
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
		1/31/12	7.35	21.7	430	7.21
		4/23/12	7.34	22.8	470	6.99
		4/23/12 DUP	7.34	22.8	470	7.05
		7/17/12	7.36	22.9	430	7.01
		7/17/12 DUP	7.36	22.9	430	6.99
		10/8/12	7.64	21.4	433.2	7.51
		1/10/13	7.50	20.8	439.9	7.16
		4/19/13	7.68	21.6	434.7	7.25
		7/11/13	7.56	22.9	442.2	7.14
		10/7/13	7.59	21.5	431.8	6.99
10/13/14	7.47	22.0	433	6.72		
8/3/15	7.61	22.9	446.7	7.1		
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
		2/3/12	7.58	21.1	538.2	49.0
		7/10/12	7.20	26.8	380	40.1
		7/10/12 DUP	7.20	26.8	380	39.2
		1/9/13	7.57	19.1	549.6	53.9
		7/8/13	7.84	27.9	539.2	46.8
		1/6/14	7.61	20.3	542.4	53.4
7/7/14	7.60	25.3	536.6	48.3		
7/20/15	7.75	27.4	560.8	54		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/3/12	6.68	21.3	1370	301
		4/23/12	6.68	24.0	1580	291
		7/9/12	6.57	24.7	1360	265
		7/9/12 DUP	6.57	24.7	1360	265
		10/4/12	6.80	23.6	1412	287
		1/17/13	6.69	23.3	1417	288
		4/8/13	6.90	22.3	1409	280
		7/9/13	6.89	24.3	1400	278
		10/14/13	6.75	23.2	1528	355
1/10/14	6.83	22.2	1440	311		
4/10/14	6.84	23.2	1426	301		
7/7/14	6.80	23.2	1423	289		
12/10/14	6.66	22.8	1528	366		
7/23/15	6.87	24.1	1424	290		
NOTEMAN HOUSE	212483	2/3/12	7.06	13.5	1520	324
NSD-02	527587	2/5/08	ND	ND	ND	43
		7/7/08	8.02	21.0	609.00	44
NSD-03	527586	2/5/08	ND	ND	ND	70.7
		7/7/08	7.64	21.0	570.00	58.9
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
		1/30/12	7.39	21.2	431.3	7.78
		4/25/12	7.42	22.4	370	8.42
		7/18/12	7.33	22.5	430	6.99
		10/10/12	7.58	21.7	423.9	7.46
		1/10/13	7.58	21.8	396.4	9.02
		4/17/13	7.64	21.2	426.2	7.52
		7/12/13	7.65	22.0	429.3	6.91
		10/10/13	7.49	21.2	433.4	7.05
		10/10/13 DUP	7.49	21.2	433.4	7.14
		1/13/14	7.6	21.2	426.7	7.03
		4/7/14	7.59	21.3	432.9	7.34
		7/10/14	7.57	22.0	431.6	7.65
		10/13/14	7.48	23.1	424	7.04
2/12/15	7.42	21.0	436	7.11		
7/30/15	7.62	22.2	436.2	6.3		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		1/30/12	7.15	21.5	1061	379
		4/25/12	7.17	21.6	920	346
		4/25/12 DUP	7.17	21.6	920	347
		7/18/12	7.05	22.1	1080	354
10/10/12	7.31	21.1	1029	354		
10/10/12 DUP	7.31	21.1	1029	353		
1/10/13	7.18	20.8	1051	370		
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
1/30/12	7.34	23.4	914.4	217		
2/17/12	7.45	22.9	898.1	203		
3/15/12	7.39	23.9	888.2	207		
4/25/12	7.16	23.4	870	204		
5/22/12	7.25	23.9	970	178		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
NWC-04	551849	6/6/12	7.27	24.4	1040	195
		7/18/12	7.25	23.7	880	205
		8/28/12	7.49	24.2	893.3	208
		9/13/12	7.40	23.9	883.7	205
		10/10/12	7.48	23.2	883.6	207
		11/13/12	7.56	21.7	849.8	211
		12/3/12	7.40	23.0	898.6	208
		1/10/13	7.37	22.2	903.1	210
		2/7/13	7.54	23.0	917.5	228
		3/7/13	7.49	22.4	892.4	222
		4/17/13	7.43	22.6	903.8	223
		5/14/13	7.53	23.2	881.7	214
		6/5/13	7.29	33.9	862.7	201
		7/12/13	7.29	23.5	897.2	211
		7/12/13 DUP	7.29	23.5	897.2	200
		8/9/13	7.43	23.5	898.6	207
		9/5/13	7.56	23.8	893.6	214
		10/10/13	7.39	22.6	873.7	197
		11/6/13	7.58	21.8	852.3	202
		12/3/13	7.50	23.1	843.4	199
		1/13/14	7.12	21.9	885.6	197
		2/5/14	7.46	22.4	833.3	198
		3/5/14	7.59	22.8	813.3	168
		4/7/14	7.49	22.9	834.2	187
		5/13/14	7.56	23.4	819.8	186
		6/23/14	7.62	24.5	806.7	188
		7/10/14	7.57	23.8	826.2	194
		8/11/14	7.59	23.5	824.0	187
		9/9/14	7.50	24.0	789.5	163
		10/13/14	7.39	24.5	802	175
11/14/14	7.46	22.9	835.4	183		
12/10/14	7.33	23.3	840.7	189		
2/12/15	7.81	20.3	856.4	177		
4/9/15	7.41	24.6	823.2	182		
7/30/15	7.60	24.5	935.6	200		
10/6/15	7.54	23.2	866.8	230		
NWC-06	575700	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
		1/30/12	7.47	22.1	402.7	8.44
		4/25/12	7.34	22.5	410	7.11
		7/18/12	7.39	22.8	380	8.60
		10/10/12	7.62	21.9	393.6	9.33
		1/10/13	7.47	21.3	429.2	7.55
		4/17/13	7.66	21.1	404.1	8.82
		7/12/13	7.59	22.4	404.1	8.40
		10/10/13	7.56	21.6	403.3	8.38
		1/13/14	7.64	21.3	401.8	8.78
		4/7/14	7.65	21.7	403.7	8.62
		7/10/14	7.68	22.4	405.9	8.97
		7/10/14 DUP	7.68	22.4	405.9	8.99
		10/13/14	7.59	23.4	393	8.51
		2/12/15	7.60	21.2	405	8.12
2/12/15 DUP	7.60	21.2	405	8.09		
7/30/15	7.66	22.6	406.5	8.2		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/3/12	8.15	15.3	390	19.2
		1/8/13	7.88	10.5	544.4	20.4
7/8/13	7.56	39.2	510.3	19.2		
1/10/14	7.89	18.1	580.5	18.7		
7/7/14	7.84	29.2	496.3	18.0		
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
		2/3/12	7.94	10.0	521.4	17.1
		4/11/12	7.52	18.7	519.8	17.3
		7/10/12	7.30	27.9	390	16.6
		10/3/12	8.09	25.7	526.7	17.6
		10/3/12 DUP	8.09	25.7	526.7	17.5
		1/9/13	7.9	17.5	532.8	16.8
		4/8/13	8.07	18.4	534.1	17
		7/17/13	7.74	22.3	531.0	17.2
		10/14/13	8.03	20.1	533.1	16.9
		1/6/14	7.82	11.9	517.4	17.4
		4/7/14	7.96	18.3	534.8	17.3
7/7/14	8.07	23.9	534.4	18.3		
10/23/14	7.86	19.6	536.0	17.5		
7/20/15	7.95	25.9	540.1	18		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/6/12	6.98	20.8	1017	166
		2/29/12	7.09	20.3	1080	362
		3/15/12	7.02	21.4	1138	282
		4/12/12	6.90	20.9	1265	346
		4/12/12 DUP	6.90	20.9	1265	352
		7/9/12	6.82	22.2	1140	292
		11/27/2012	7.51	20.1	1164	274
		2/6/13	7.05	19.9	1054	212
		4/9/13	7.24	19.7	1105	232
		7/10/13	7.26	21.4	1218	329
		10/15/13	7.14	20.5	1109	240
		1/10/14	7.23	19.6	1079	227
		4/16/14	7.17	20.4	1103	228
7/17/14	7.13	21.4	1357	467		
10/16/14	6.9	22.1	1104	193		
1/26/15	7.11	19.6	1349	428		
7/27/15	7.03	22.2	1445	470		
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
		2/7/12	7.64	21.4	1212	428
		4/13/12	7.49	21.1	1204	402
		4/13/12 DUP	7.49	21.1	1204	390
		7/18/12	7.03	22.6	1210	418
		7/18/12 DUP	7.03	22.6	1210	419
		10/9/12	7.30	21.3	1209	428
		1/11/13	7.64	20.3	1217	413
		4/11/13	7.29	21.2	1206	427
		7/17/13	7.21	21.9	1212	411
		10/18/13	7.18	21.3	1212	406
		1/8/14	7.21	20.8	1221	437
		4/15/14	7.18	21.5	1213	416
		7/21/14	7.30	22.4	1193	432
		10/6/14	7.12	21.5	1133	413
8/3/15	7.24	22.3	1193	390		



**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
PIONKE 395	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
		2/1/12	7.25	17.5	1230	481
2/1/12 DUP	7.25	17.5	1230	495		
4/12/12	7.17	22.1	1218	508		
7/11/12	6.59	22.9	1280	439		
10/17/12	7.16	22.3	1136	419		
PIONKE 517	221517	9/18/12	7.91	23.4	395.8	14
		10/11/12	7.75	22.8	394.7	14.9
		1/9/13	7.79	22.6	389.9	14.3
		4/17/13	7.74	22.1	391.9	14.6
		7/16/13	7.84	22.9	391.5	13.9
		10/17/13	7.73	22.7	391.5	13.8
		2/5/14	7.75	21.5	394.2	14.9
		4/9/14	7.71	22.9	400.9	14.0
		7/11/14	7.76	23.7	388.9	14.6
		10/7/14	7.46	25.8	406	14.0
7/22/15	7.79	23.3	392.1	14		
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
POWER 639	222639	1/16/14	7.38	20.9	1004	234
		2/5/14	7.35	20.8	1004	328
		3/5/14	7.39	21.3	991.4	187
		4/15/14	7.38	21.6	999.4	249
		5/13/14	7.40	21.4	990.9	206
		6/23/14	7.44	21.9	886.4	117
		7/17/14	7.40	22.1	861.3	168
		8/11/14	7.50	21.8	864.9	136
		9/9/14	7.49	21.7	850.4	105
		1/27/15	7.27	22.0	922	291
		3/10/15	7.35	21.9	1032	265
		4/28/15	7.43	20.6	1002	305
		5/14/15	7.32	21.3	991.4	270
		6/11/15	7.26	22.0	1019	310
		7/30/15	7.33	22.3	1014	290

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		1/30/12	7.38	22.3	412.2	8.80
		4/10/12	7.40	23.2	404.5	8.70
		7/6/12	7.32	24.2	415.7	8.97
		10/8/12	7.61	22.5	412.0	9.14
		10/8/12 DUP	7.61	22.5	412.0	9.07
		1/17/13	7.52	22.2	409.6	8.82
		4/19/13	7.6	22.1	413.9	8.63
		7/15/13	7.58	23.6	416.2	8.19
		10/7/13	7.68	22.6	412.7	8.37
		1/13/14	7.63	21.9	409.8	8.79
4/14/14	7.55	22.2	417.5	8.67		
7/10/14	7.58	23.2	413.5	8.92		
10/17/14	7.36	23	422.0	8.67		
7/21/15	7.54	23.7	414.6	8.5		
RAY	803772	2/15/08	7.30	19.1	1540	159
		4/21/08 <sup>1</sup>	6.92	21.3	1418	125
		5/13/08 <sup>1</sup>	7.05	20.9	1418	123
		6/23/08 <sup>1</sup>	6.87	21.1	1593	130
		7/29/08 <sup>1</sup>	6.98	21.8	1411	120
		8/28/08 <sup>1</sup>	M	21.1	1519	129
		9/23/08 <sup>1</sup>	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
		1/31/12	7.28	20.5	1360	131
		4/11/12	7.03	20.6	1359	131
		7/6/12	7.11	22.1	1430	129
		10/3/12	7.12	21.1	1464	130
		1/17/13	7.05	19.5	1527	126
		1/17/13 DUP	7.05	19.5	1527	140
		4/8/13	7.32	20	1476	131
		7/9/13	7.18	21.4	1451	128
		10/15/13	7.13	20.8	1487	135
		1/14/14	7.25	19.2	1433	133
		4/8/14	7.09	20.8	1502	146
		7/8/14	7.14	21.4	1409	147
10/22/14	6.88	21.6	1422	147		
8/3/15	7.22	21.4	1360	130		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		4/21/08 <sup>1</sup>	7.32	21.4	552	128
		5/8/08 <sup>1</sup>	7.14	21.2	622	141
		6/23/08 <sup>1</sup>	7.06	22.9	660	129
		7/29/08 <sup>1</sup>	6.78	23.1	339	134
		8/28/08 <sup>1</sup>	7.18	21.6	635	128
		9/23/08 <sup>1</sup>	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
		1/30/12	7.40	20.0	580	171
		4/23/12	7.32	23.9	720	166
		7/13/12	7.26	24.0	820	171
		7/13/12 DUP	7.26	24.0	820	166
		10/10/12	7.41	24.3	671.4	177
		1/15/13	7.37	16.9	681.1	174
		4/15/13	7.57	23.8	698	190
		7/15/13	7.39	23.6	697.8	184
10/16/13	7.47	25.4	710.6	185		
1/9/14	7.46	21.4	701.8	190		
4/11/14	7.52	26.1	711.3	190		
7/18/14	7.48	24.9	709.2	192		
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
		1/30/12	7.38	20.8	427.2	6.22
		4/10/12	7.37	22.1	421.8	6.31
		7/17/12	7.32	22.7	420	5.85
		10/17/12	7.55	21.7	429.0	6.04
		1/17/13	7.46	21.5	431.5	6.01
		4/18/13	7.63	21.3	433.5	6.26
		7/17/13	7.59	22.1	427.7	6.05
		7/17/13 DUP	7.59	22.1	427.7	6.28
		10/10/13	7.51	21.9	436.9	5.8
		1/7/14	7.49	21.0	434.0	6.24
		4/14/14	7.59	21.4	431.2	6.11
		7/10/14	7.54	22.4	428.5	6.41
		10/17/14	7.31	22.6	452	5.81
		7/30/15	7.57	22.9	430.3	5.9

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	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
		2/7/12	7.28	20.7	915.6	230
		2/7/12 DUP	7.28	20.7	915.6	228
		4/13/12	7.04	21.1	896.5	203
		7/18/12	6.87	21.6	900	214
		10/9/12	7.18	21.4	890.6	229
		1/11/13	7.21	20.7	895.8	219
		1/11/13 DUP	7.21	20.7	895.8	211
		4/11/13	7.26	21.9	876.8	229
		7/25/13	7.13	21.4	887.3	228
		10/17/13	7.23	20.8	891.9	210
		1/8/14	7.32	20.5	886.8	220
		4/15/14	7.26	21.2	873.5	215
		8/11/14	7.32	21.2	869.2	221
		10/21/14	7.09	21.4	886	209
10/21/14 DUP	7.09	21.4	886	212		
1/27/15	7.14	21.4	853	215		
7/30/15	7.20	21.9	865.8	190		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
SCHWARTZ	210865	2/8/08	7.52	21.5	506	158
		4/21/08 <sup>1</sup>	7.23	21.7	563	122
		5/19/08 <sup>1</sup>	7.38	22.4	629	130
		6/23/08 <sup>1</sup>	7.02	22.1	674	129
		7/29/08 <sup>1</sup>	7.25	22.4	955	245
		8/28/08 <sup>1</sup>	M	22.3	669	131
		9/23/08 <sup>1</sup>	7.27	22.2	607	124
		10/22/08 <sup>1</sup>	7.31	22.0	653	135
		11/19/08 <sup>1</sup>	7.38	21.1	612	140
		12/17/08 <sup>1</sup>	6.78	21.6	472	144
		1/29/09 <sup>1</sup>	7.08	22.0	475	124
		2/23/09 <sup>1</sup>	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
		2/6/12	7.32	21.3	629.7	116
		2/6/12 DUP	7.32	21.3	629.7	114
		4/10/12	7.48	21.6	626.1	120
		7/16/12	7.31	21.9	710	117
		10/17/12	7.48	21.6	645	121
		3/13/13	7.57	20.7	623.6	118
		5/14/13	7.61	21.5	629.7	112
		7/15/13	7.49	22.1	770.2	198
		10/14/13	7.55	20.9	633.3	109
1/13/14	7.61	20.6	663.1	125		
4/9/14	7.48	21.5	635.9	110		
7/18/14	7.45	21.8	790.5	216		
10/22/14	7.28	22	646.0	119		
2/3/15	7.35	22.4	714	125		
2/3/15 DUP	7.35	22.4	714	126		
8/4/15	7.49	22.5	641.8	110		
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
		2/3/12	7.40	20.5	484.5	20.1
		2/3/12 DUP	7.40	20.5	484.5	19.5
		7/10/12	7.00	22.7	370	19.4
		1/11/13	7.38	20.0	489.0	19.3
		7/8/13	7.45	22.8	489.7	19.4
		1/10/14	7.65	19.7	428.6	19.2
		7/7/14	7.44	21.8	464.7	19.4
		7/20/15	7.45	23.0	491.2	19
		7/20/15 DUP	7.45	23.0	491.2	19

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
THOMPSON 341	218341	5/29/13	7.22	24.4	415.9	7.32
		8/9/13	7.57	22.2	420.0	7.62
		10/9/13	7.49	21.6	425.2	7.54
		1/16/14	7.53	21.5	432.7	7.48
		4/14/14	7.50	21.6	425.8	7.68
		7/21/14	7.48	22.3	414.2	8.02
		10/22/14	7.23	22.3	430	8.02
		8/3/15	7.50	23.1	425.7	7.5
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	21.3
		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
		2/2/12	7.89	22.2	360	23.0
		8/14/12	7.65	24.6	366	23.4
		2/15/13	7.72	22.2	369	22.1
		8/27/13	7.72	24.7	414	23.5
2/18/14	7.54	24.3	388	24.5		
8/12/14	7.62	24.7	395	25.6		
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
		2/1/12	7.48	21.1	744	112
		TM-06 MILLER	522695	2/27/08	7.44	19.6
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
7/9/12	6.82			20.8	505	33.5
2/14/13	6.92			19.6	527	31.1
8/19/13	7.21			19.9	556	32.5
7/21/14	7.17	19.9	551	33.0		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		2/9/12	7.15	23.0	670	171
		8/13/12	6.83	21.7	415	25.4
		2/27/13	6.81	19.9	380	25.6
		8/28/13	7.36	21.2	369	25.0
		2/13/14	6.99	20.4	372	27.4
8/21/14	7.35	20.6	358	48.5		
2/4/15	7.58	21.0	375	102		
9/15/15	7.36	21.5	411	91.3		
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
		3/15/12	7.85	20.2	382.3	15.1
		4/24/12	7.88	21.0	280	13.4
		4/24/12 DUP	7.88	21.0	280	13.3
		9/13/12	8.09	21.1	407	13.3
		10/19/12	8.17	21.0	428.2	12.8
		3/7/13	8.33	21.2	415.1	12.7
		4/17/13	8.27	20.3	423.9	12.8
		7/23/13	8.16	21.4	426.1	13.2
		11/6/13	7.90	21.3	386.5	4.81
		11/6/13 DUP	7.90	21.3	386.5	4.64
		1/15/14	7.91	21.1	424.4	3.98
		5/15/14	7.98	20.4	410.6	5.12
		7/15/14	7.86	21.4	421.9	5.46
		10/16/14	7.51	22.0	439	4.16
1/28/15	7.75	23.0	413	3.96		
7/24/15	7.87	22.6	478.8	<5.0		
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
		7/10/12	7.04	23.7	379	14.9
		2/12/13	6.96	21.7	393	14.6
		9/4/13	7.2	22.8	412	14.8
		7/22/14	7.18	23.2	407	14.6
		9/8/15	7.19	23.0	411	14.7

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		7/9/12	6.95	21.0	1292	544
8/15/13	6.86	20.3	1374	539		
8/4/14	6.79	20.6	1368	550		
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
		2/2/12	7.13	22.5	498	62.2
		7/10/12	7.12	23.5	505	63.7
		2/15/13	6.74	23.2	522	60.1
		9/4/13	7.11	23.8	538	61.3
		2/12/14	6.93	23.6	548	62.8
		7/21/14	7.06	24.2	542	63.3
9/10/15	7.31	24.0	502	61.4		
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
		2/9/12	6.76	20.5	1172	444
		7/11/12	6.72	21.1	1155	449
		2/12/13	6.69	20.2	1185	400
		8/28/13	6.89	21.3	1212	416
7/21/14	6.85	21.4	1205	418		
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



**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
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
		7/16/12	7.30	21.1	500	36.3
		10/9/12	7.56	20.4	513.7	40.9
		7/18/13	7.38	20.9	514.4	42.4
7/16/14	7.41	21.1	517.3	43.9		
7/30/15	7.43	20.5	529.1	16		
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
		2/3/12	7.20	20.5	850	299
		4/25/12	7.19	21.3	840	267
		7/16/12	7.13	22.2	860	261
		7/16/12 DUP	7.13	22.2	860	267
		10/9/12	7.39	20.9	882.8	281
		2/6/13	7.23	20.8	946.1	335
		4/10/13	7.35	20.9	907.6	296
		7/18/13	7.31	21.4	994.2	355
		10/8/13	7.35	21.0	894.6	275
		1/9/14	7.23	20.3	917.4	305
		4/9/14	7.31	20.9	910.7	296
7/16/14	7.30	21.6	940.2	328		
10/9/14	7.12	21.2	963	245		
7/30/15	7.35	22.1	915.4	280		
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	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
		2/6/12	7.60	21.4	385.0	13.5
		4/25/12	7.60	22.1	360	12.7
		7/5/12	7.64	21.7	385.8	12.9
		10/9/12	7.66	21.5	385.1	14.0
		2/7/13	7.7	21.4	389.7	14.0
		2/7/13 DUP	7.7	21.4	389.7	13.2
		4/10/13	7.76	20.6	383.9	13.0
		7/19/13	7.63	21.3	386.6	14.2
		10/18/13	7.72	21.1	387.3	13.1
		1/15/14	7.73	20.7	388.4	13.4
		4/10/14	7.85	21.5	387.1	13.5
7/18/14	7.79	21.4	386.7	14.1		
10/22/14	7.5	22.7	394	13.7		
1/30/15	7.81	20.7	381	14.2		
8/4/15	7.72	22.0	386.7	13		
WEISKOPF 802	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
		2/3/12	7.35	21.5	1363	583
		4/25/12	7.07	23.5	1300	575
		7/13/12	6.83	22.2	1530	552
		10/11/12	7.26	21.3	1369	572
		10/11/12 DUP	7.26	21.3	1369	577
		1/16/13	7.14	20.5	1298	523
		4/17/13	7.22	20.1	1337	558
		7/18/13	7.45	21.3	1131	420
		10/17/13	7.29	22.5	1131	437
		1/16/14	7.28	22.7	1323	563
		4/11/14	7.29	23.0	1304	558
7/18/14	7.17	23.3	1375	608		
10/9/14	7.08	24.5	1094	405		
8/4/15	7.07	24.5	1571	700		
8/4/15 DUP	7.07	24.5	1571	700		

**TABLE 2**  
**Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry Number	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
WEISKOPF 897	220897	12/6/12	7.93	23.6	398.3	18.5
		1/16/13	7.88	23.1	398.9	18.2
		1/16/13 DUP	7.88	23.1	398.9	18.2
		4/17/13	7.86	22.6	394.4	19.0
		7/18/13	7.84	24.3	393.2	18.0
		10/17/13	7.90	23.3	392.2	18.3
		1/16/14	7.90	23	395.8	18.4
		4/11/14	7.92	23.5	390.5	17.9
		7/18/14	7.87	23.9	387.4	18.4
		10/9/14	7.69	22.8	392	17.7
8/4/15	7.89	24.9	385.7	17		
WMD-2011-03M	913037	2/2/12	6.66	22.0	1190	391
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
		1/31/12	7.29	20.3	420	6.59
		4/10/12	7.49	21.9	420.1	6.90
		4/10/12 DUP	7.49	21.9	420.1	6.65
		7/17/12	7.34	22.2	430	6.38
		10/8/12	7.58	20.8	431.4	7.03
		1/10/13	7.58	20.7	436.1	6.52
		4/18/13	7.65	20.8	436.7	6.66
		7/15/13	7.55	21.8	431.1	6.49
		10/7/13	7.59	21.5	430.2	6.41
		1/7/14	7.50	20.9	435.4	6.77
		4/9/14	7.57	21.5	434.4	6.57
		7/17/14	7.61	21.5	432.0	6.99
		10/13/14	7.52	23.8	422.0	6.24
8/3/15	7.61	22.5	430.3	6.5		

Notes:

- 35-71891 = ADWR 35 Database
- ADWR = Arizona Department of Water Resources
- deg C = degrees Celsius
- DUP = Blind duplicate
- M = Multi-Meter Malfunction
- mg/L = milligrams per liter
- ND = No Data
- NR = No Record
- SC = Specific Conductance
- SU = Standard Units
- µS/cm = microsiemens per centimeter
- <sup>1</sup> Verified drinking water supply well, sample collected for sulfate trend analysis and interim action evaluation

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ANDERSON 396	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
					2/1/12	150.19	4438.32
					4/25/12	150.69	4437.82
					7/12/12	151.34	4437.17
					10/10/12	151.50	4437.01
					1/17/13	151.24	4437.27
					4/15/13	152.08	4436.43
					7/18/13	152.19	4436.32
10/16/13	152.41	4436.10					
1/9/14	152.14	4436.37					
4/7/14	152.56	4435.95					
7/11/14	152.02	4436.49					
10/6/14	152.70	4435.81					
2/2/15	152.09	4436.42					
5/18/15	152.22	4436.29					
7/22/15	152.63	4435.88					
10/8/15	152.39	4436.12					
ANDERSON 458	221458	601118.690	3468826.284	4585.37	9/7/12	173.76	4411.61
					10/10/12	151.82	4433.55
					1/17/13	152.17	4433.20
					4/15/13	158.42	4426.95
					7/18/13	157.56	4427.81
					10/16/13	156.24	4429.13
					1/9/14	152.58	4432.79
					4/7/14	153.54	4431.83
					7/11/14	156.66	4428.71
					10/6/14	157.31	4428.06
5/18/15	156.79	4428.58					
7/22/15	157.03	4428.34					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ASLD 435	616435	593496.865	3468879.791	4471.34	6/27/13	250.85	4220.49
					9/24/13	250.85	4220.49
					12/3/13	250.79	4220.55
					2/25/14	250.75	4220.59
					6/4/14	250.93	4220.41
					9/10/14	250.97	4220.37
					11/20/14	250.66	4220.68
					3/24/15	250.25	4221.09
9/17/15	250.17	4221.17					
AWC-02	616586	598907.911	3468549.357	4547.64	8/27/08	121.12	4426.52
					4/8/08	116	4431.64
					10/23/08 <sup>1</sup>	115	4432.64
					4/22/09 <sup>1</sup>	118	4429.64
					10/9/09 <sup>1</sup>	117	4430.64
					4/23/10 <sup>1</sup>	119	4428.64
					4/11/13	127.64	4420.00
					7/25/13	128.89	4418.75
					10/7/13 <sup>1</sup>	125.00	4422.64
					1/7/14	125.36	4422.28
					5/14/14	124.89	4422.75
					7/16/14	124.49	4423.15
					10/15/14	122.52	4425.12
					1/29/15	120.00	4427.64
5/18/15	162.60	4385.04					
7/21/15	129.08	4418.56					
10/2015 <sup>1</sup>	128	4419.64					
AWC-03	616585	599090.322	3468681.898	4539.52	8/27/08	119.40	4420.12
					4/8/08	112	4427.52
					10/23/08 <sup>1</sup>	106	4433.52
					4/22/09 <sup>1</sup>	114	4425.52
					10/9/09 <sup>1</sup>	116	4423.52
					4/23/10 <sup>1</sup>	116	4423.52
					4/11/13 <sup>1</sup>	125	4414.52
					7/16/13 <sup>1</sup>	126	4413.52
					10/7/13 <sup>1</sup>	122	4417.52
					1/7/14 <sup>1</sup>	121	4418.60
					5/14/14 <sup>1</sup>	121.50	4418.02
					7/16/14 <sup>1</sup>	123.50	4416.02
					10/15/14	119.60	4419.92
					1/29/15	120.20	4419.32
5/19/15	186.20	4353.32					
7/21/15	118.00	4421.52					
10/2015 <sup>1</sup>	115	4424.52					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
AWC-04	616584	598949.929	3468717.084	4540.48	8/18/08	112.56	4427.92
					4/8/08	108	4432.48
					10/23/08 <sup>1</sup>	111.31	4429.17
					4/22/09 <sup>1</sup>	110	4430.48
					10/9/09 <sup>1</sup>	110	4430.48
					4/23/10 <sup>1</sup>	109	4431.48
					4/11/13	120.93	4419.55
					7/16/13	123.76	4416.72
					10/7/13 <sup>1</sup>	116.00	4424.48
					1/7/14	115.98	4424.50
					5/14/14	115.32	4425.16
					7/16/14	118.44	4422.04
					10/15/14	114.29	4426.19
					1/29/15	112.20	4428.28
					5/19/15	113.90	4426.58
7/21/15	131.70	4408.78					
10/2015 <sup>1</sup>	129	4411.48					
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 <sup>1</sup>	289	4253.51
					4/23/10 <sup>1</sup>	278	4264.51
					4/11/13	229.56	4312.95
					7/16/13	203.17	4339.34
					10/7/13 <sup>1</sup>	142.00	4400.51
					1/7/14	123.09	4419.42
					5/14/14	346.75	4195.76
					7/16/14	346.34	4196.17
					10/15/14	316.16	4226.35
					1/29/15	133.98	4408.53
5/18/15	148.05	4394.46					
7/21/15	120.84	4421.67					
10/2015 <sup>1</sup>	116	4426.51					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					1/31/12	228.95	4419.23
					4/11/12	219.39	4428.79
					7/6/12	232.59	4415.59
					10/4/12	237.16	4411.02
					1/18/13	237.81	4410.37
					4/8/13	237.92	4410.26
					7/9/13	238.32	4409.86
10/15/13	239.48	4408.70					
1/14/14	239.53	4408.65					
4/8/14	231.49	4416.69					
7/8/14	228.85	4419.33					
10/21/14	233.96	4414.22					
1/26/15	230.87	4417.31					
7/24/15	237.53	4410.65					
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
					7/17/13	114.18	4578.18
					1/14/14	113.96	4578.40
7/17/14	113.42	4578.94					
7/20/15	113.22	4579.14					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/1/12	347.84	4487.39
8/13/12	343.95	4491.28					
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
					2/8/12	70.33	4734.77
					8/14/12	71.73	4733.37
					2/14/13	72.95	4732.15
					8/14/13	73.82	4731.28
2/13/14	73.79	4731.31					
7/22/14	74.14	4730.96					
2/4/15	73.70	4731.40					
9/10/15	74.12	4730.98					



**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/23/12	143.90	4440.07
					7/10/12	143.70	4440.27
					2/15/13	144.53	4439.44
					8/27/13	145.10	4438.87
					2/11/14	145.08	4438.89
					7/21/14	145.36	4438.61
2/5/15	144.79	4439.18					
5/28/15	144.90	4439.07					
9/14/15	145.24	4438.73					
10/21/15	145.39	4438.58					
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
					2/23/12	134.64	4438.53
					9/17/12	136.15	4437.02
					1/15/13	136.13	4437.04
					4/15/13	136.78	4436.39
9/18/13	137.04	4436.13					
1/9/14	136.96	4436.21					
7/18/14	137.49	4435.68					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/3/12	148.47	4436.63
					4/18/12	149.02	4436.08
					7/10/12	148.65	4436.45
					10/16/12	149.91	4435.19
					2/7/13	149.94	4435.16
					2/12/13	150.06	4435.04
					5/15/13	150.55	4434.55
					8/20/13	150.82	4434.28
					11/1/13	150.77	4434.33
2/11/14	150.33	4434.77					
5/7/14	150.83	4434.27					
8/19/14	151.13	4433.97					
11/13/14	150.78	4434.32					
2/3/15	150.10	4435.00					
5/28/15	150.47	4434.63					
9/8/15	150.38	4434.72					
10/21/15	150.23	4434.87					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/3/12	150.05	4434.97
					4/18/12	150.70	4434.32
					7/10/12	151.65	4433.37
					10/16/12	151.77	4433.25
					2/12/13	152.00	4433.02
					5/15/13	152.42	4432.60
					8/20/13	152.76	4432.26
11/1/13	152.53	4432.49					
2/11/14	151.78	4433.24					
5/7/14	152.26	4432.76					
8/19/14	152.78	4432.24					
11/13/14	152.27	4432.75					
2/3/15	151.61	4433.41					
5/19/15	151.58	4433.44					
9/8/15	151.63	4433.39					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/3/12	193.60	4433.84
					4/18/12	193.90	4433.54
					7/10/12	194.75	4432.69
					10/16/12	195.71	4431.73
					2/12/13	195.42	4432.02
					5/15/13	195.91	4431.53
					8/20/13	196.23	4431.21
					11/1/13	195.77	4431.67
2/11/14	195.24	4432.20					
5/7/14	195.47	4431.97					
8/19/14	196.36	4431.08					
11/13/14	195.74	4431.70					
2/3/15	195.12	4432.32					
5/19/15	195.00	4432.44					
9/8/15	195.48	4431.96					
10/21/15	195.37	4432.07					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					2/3/12	194.65	4432.25
					4/18/12	195.00	4431.90
					7/10/12	196.10	4430.80
					10/16/12	196.53	4430.37
					2/12/13	196.45	4430.45
					5/15/13	196.90	4430.00
8/20/13	197.43	4429.47					
11/1/13	196.53	4430.37					
2/11/14	196.18	4430.72					
5/7/14	196.33	4430.57					
8/19/14	197.40	4429.50					
11/13/14	196.32	4430.58					
2/3/15	195.90	4431.00					
5/19/15	195.64	4431.26					
9/8/15	196.32	4430.58					
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
					1/30/12	242.44	4445.89
					7/11/12	243.0	4445.33
					2/15/13	243.8	4444.53
					8/28/13	244.32	4444.01
					2/13/14	244.31	4444.02
7/22/14	244.66	4443.67					
2/5/15	243.91	4444.42					
9/14/15	244.59	4443.74					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					1/30/12	300.52	4452.73
					7/12/12	301.15	4452.10
					2/13/13	302.05	4451.20
					8/12/13	302.48	4450.77
7/24/14	301.86	4451.39					
2/5/15	299.56	4453.69					
9/15/15	300.14	4453.11					
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
					1/30/12	301.60	4450.85
					7/12/12	302.45	4450.00
					2/14/13	303.07	4449.38
					8/12/13	303.60	4448.85
2/19/14	303.11	4449.34					
7/24/14	303.48	4448.97					
2/5/15	301.98	4450.47					
9/15/15	302.46	4449.99					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/1/12	293.44	4469.17
					7/12/12	294.65	4467.96
					2/13/13	296.67	4465.94
					8/12/13	297.63	4464.98
2/18/14	293.68	4468.93					
7/24/14	293.53	4469.08					
2/5/15	286.01	4476.60					
9/14/15	286.34	4476.27					
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
					2/2/12	511.34	4280.87
					7/13/12	510.90	4281.31
					2/18/13	509.91	4282.30
					8/13/13	509.32	4282.89
					8/7/14	507.21	4285.00
2/10/15	463.22	4328.99					
9/14/15	439.93	4352.28					
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
					2/1/12	326.51	4466.94
					7/13/12	328.7	4464.75
					8/19/13	283.97	4509.48
					2/10/15	207.58	4585.87
9/14/15	200.36	4593.09					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					1/31/12	569.83	4274.84
					8/14/12	569.70	4274.97
					2/13/13	568.75	4275.92
					8/27/13	566.50	4278.17
					2/19/14	564.68	4279.99
8/14/14	564.24	4280.43					
2/5/15	560.60	4284.07					
9/14/15	557.84	4286.83					
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
					2/9/12	209.78	4439.43
					7/11/12	210.60	4438.61
					2/27/13	211.40	4437.81
					9/4/13	212.15	4437.06
8/19/14	212.68	4436.53					
2/4/15	212.28	4436.93					
9/15/15	212.37	4436.84					



**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/6/12	210.90	4436.25
					8/13/12	211.42	4435.73
					2/15/13	212.13	4435.02
					9/6/13	212.52	4434.63
8/20/14	213.14	4434.01					
2/4/15	212.97	4434.18					
9/15/15	212.91	4434.24					
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
					2/8/12	222.97	4495.58
					4/24/12	223.87	4494.68
					7/9/12	225.05	4493.50
					10/17/12	225.63	4492.92
					2/13/13	226.85	4491.70
					5/8/13	227.45	4491.10
					8/15/13	228.10	4490.45
					11/4/13	224.41	4494.14
					2/12/14	222.90	4495.65
					6/2/14	222.80	4495.75
					8/4/14	223.14	4495.41
11/12/14	219.47	4499.08					
2/5/15	214.19	4504.36					
9/9/15	211.68	4506.87					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					1/30/12	271.50	4474.66
					4/18/12	272.31	4473.85
					7/9/12	273.20	4472.96
					10/17/12	274.27	4471.89
					2/13/13	275.52	4470.64
					5/8/13	276.05	4470.11
					8/15/13	278.76	4467.40
					11/4/13	273.26	4472.90
					2/12/14	271.44	4474.72
					5/8/14	270.65	4475.51
					8/14/14	270.78	4475.38
11/12/14	263.19	4482.97					
2/5/15	259.84	4486.32					
9/14/15	260.92	4485.24					
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
					2/2/12	117.18	4433.41
					4/24/12	117.92	4432.67
					7/5/12	118.84	4431.75
					10/18/12	119.13	4431.46
					1/16/13	118.89	4431.70
					4/16/13	119.36	4431.23
					7/23/13	120.02	4430.57
					10/8/13	119.63	4430.96
					1/15/14	118.96	4431.63
					5/13/14	119.40	4431.19
					7/15/14	120.06	4430.53
					10/14/14	119.16	4431.43
					1/28/15	118.46	4432.13
5/18/15	118.49	4432.10					
7/22/15	118.81	4431.78					
10/6/15	118.06	4432.53					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/2/12	119.91	4430.62
					4/24/12	120.93	4429.60
					7/5/12	122.05	4428.48
					10/18/12	122.06	4428.47
					1/16/13	121.86	4428.67
					4/16/13	122.26	4428.27
					7/23/13	122.97	4427.56
					10/8/13	121.91	4428.62
					1/15/14	120.91	4429.62
					5/13/14	121.90	4428.63
					7/15/14	121.92	4428.61
					10/14/14	121.87	4428.66
1/28/15	120.63	4429.90					
5/18/15	120.48	4430.05					
7/22/15	120.42	4430.11					
10/6/15	119.44	4431.09					
BMO-2012-1M	221388	606097.384	3469746.747	4719.76	11/13/12	231.90	4487.86
					2/27/13	233.20	4486.56
					5/8/13	233.97	4485.79
					8/14/13	233.96	4485.80
					11/1/13	230.44	4489.32
					2/13/14	229.85	4489.91
					5/8/14	229.89	4489.87
					7/22/14	229.94	4489.82
					11/13/14	225.37	4494.39
					2/4/15	222.57	4497.19
9/10/15	221.60	4498.16					
BMO-2014-1BL	917394	600563.194	3468234.798	4557.18	11/7/14	123.03	4434.15
				4558.45	1/29/15	123.53	4434.92
					4/15/15	123.45	4435.00
					5/18/15	123.93	4434.52
					7/29/15	124.22	4434.23
					10/7/15	123.58	4434.87
BMO-2014-1BU	917393	600570.805	3468231.440	4557.18	11/13/14	123.51	4433.67
				4558.54	1/28/15	123.74	4434.80
					4/15/15	123.90	4434.64
					5/18/15	124.42	4434.12
					7/29/15	124.65	4433.89
					10/7/15	123.97	4434.57

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BMO-2014-2BL	917452	600784.872	3468183.921	4560.31	11/20/14	126.15	4434.16
				4561.80	1/29/15	126.74	4435.06
					4/15/15	126.70	4435.10
					5/18/15	127.18	4434.62
					7/29/15	127.43	4434.37
10/7/15	126.9	4434.90					
BMO-2014-2BU	917453	600788.520	3468192.762	4560.31	12/1/14	126.73	4433.58
				4561.85	1/30/15	126.73	4435.12
					4/15/15	126.65	4435.20
					5/18/15	127.21	4434.64
					7/29/15	127.49	4434.36
10/7/15	126.94	4434.91					
BMO-2014-3BL	917527	600822.399	3467786.416	4572.213	2/13/15	136.57	4435.64
				4573.765	4/15/15	138.35	4435.42
					5/18/15	138.64	4435.13
					7/29/15	138.86	4434.91
10/7/15	138.51	4435.26					
BMO-2014-3BU	917494	600810.534	3467787.733	4572.213	2/24/15	137.91	4434.30
				4574.887	4/15/15	139.45	4435.44
					5/18/15	139.74	4435.15
					7/29/15	140.03	4434.86
10/7/15	139.64	4435.25					
BMO-2014-4B	917620	600508.792	3468581.267	4566.453	3/4/15	132.43	4434.02
				4567.672	4/14/15	133.60	4434.07
					5/18/15	133.85	4433.82
					7/23/15	134.27	4433.40
10/6/15	133.74	4433.93					
BMO-2014-4BL	917619	600498.091	3468566.229	4566.453	3/1/15	131.89	4434.56
				4567.045	4/14/15	132.95	4434.10
					5/18/15	133.23	4433.82
					7/23/15	133.67	4433.38
10/6/15	133.16	4433.89					
BMO-2015-1B	917622	600261.991	3468563.389	4561.382	3/15/15	128.05	4433.33
				4562.063	4/14/15	129.10	4432.96
					5/18/15	129.24	4432.82
					7/23/15	129.62	4432.44
10/6/15	129.02	4433.04					
BMO-2015-1BL	917621	600272.479	3468583.092	4561.382	3/12/15	129.10	4432.28
				4563.402	4/14/15	130.45	4432.95
					5/18/15	130.59	4432.81
					7/23/15	130.98	4432.42
10/6/15	130.30	4433.10					
BMO-2015-2B	917827	600267.799	3468996.635	4579.624	3/19/15	147.17	4432.45
				4582.082	4/14/15	149.05	4433.03
					5/18/15	149.18	4432.90
					7/23/15	149.47	4432.61
10/6/15	148.94	4433.14					
BMO-2015-2BL	917828	600252.069	3468983.910	4579.624	3/26/15	146.43	4433.19
				4580.644	4/14/15	147.60	4433.04
					5/18/15	147.82	4432.82
					7/23/15	148.12	4432.52
10/6/15	147.56	4433.08					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
BOOTH	914931	601132.466	3468049.945	4568.21	1/15/13	131.47	4436.74
					4/19/13	132.04	4436.17
					10/18/13	132.56	4435.65
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
					10/10/13	601.06	4255.24
					1/8/14	592.90	4263.40
					4/16/14	592.51	4263.79
					7/21/14	592.35	4263.95
10/21/14	594.68	4261.62					
8/3/15	587.06	4269.24					
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
					7/12/12	238.24	4445.02
					2/5/13	239.11	4444.15
					7/11/13	239.67	4443.59
7/9/14	240.03	4443.23					
2/4/15	239.46	4443.80					
7/27/15	239.83	4443.43					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					1/31/12	128.04	4438.17
					7/12/12	129.58	4436.63
					1/9/13	129.28	4436.93
					7/25/13	130.21	4436.00
					1/6/14	130.11	4436.10
7/9/14	131.32	4434.89					
2/4/15	126.60	4439.61					
5/28/15	130.39	4435.82					
7/27/15	130.32	4435.89					
10/7/15	129.96	4436.25					
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
					7/12/12	133.89	4404.74
					2/5/13	123.68	4414.95
					7/25/13	129.05	4409.58
					1/6/14	127.52	4411.11
					7/9/14	124.19	4414.44
					2/4/15	115.11	4423.52
7/27/15	118.39	4420.24					
10/7/15	114.37	4424.26					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					7/12/12	78.85	4753.21
					2/5/13	82.41	4749.65
					7/25/13	81.36	4750.70
7/9/14	78.12	4753.94					
2/4/15	58.14	4773.92					
7/27/15	80.09	4751.97					
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					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/1/12	159.80	4439.34
					4/25/12	160.26	4438.88
					7/12/12	160.88	4438.26
					10/10/12	161.10	4438.04
					2/27/13	161.40	4437.74
					5/8/13	161.70	4437.44
					8/13/13	162.07	4437.07
11/1/13	162.23	4436.91					
2/10/14	161.90	4437.24					
5/7/14	162.63	4436.51					
7/21/14	162.67	4436.47					
11/13/14	162.48	4436.66					
5/19/15	162.14	4437.00					
9/10/15	162.14	4437.00					
10/21/15	162.17	4436.97					



**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					1/31/12	93.68	4592.66
					4/12/12	94.19	4592.15
					10/4/12	97.80	4588.54
					1/18/13	99.73	4586.61
					4/9/13	98.09	4588.25
7/9/13	98.38	4587.96					
10/9/13	92.69	4593.65					
1/9/14	93.21	4593.13					
4/15/14	94.64	4591.70					
7/14/14	95.43	4590.91					
10/16/14	97.22	4589.12					
1/26/15	95.81	4590.53					
7/23/15	97.32	4589.02					
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
					1/30/12	27.72	4675.55
					4/11/12	29.99	4673.28
					7/5/12	32.67	4670.60
					1/9/13	27.24	4676.03
					7/8/13	32.70	4670.57
1/6/14	23.56	4679.71					
7/7/14	28.22	4675.05					
7/20/15	30.86	4672.41					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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	87.8	4593.93
					7/12/11	88.38	4593.35
					1/30/12	88.92	4592.81
					4/11/12	89.18	4592.55
					7/5/12	95.64	4586.09
					1/9/13	82.60	4599.13
7/8/13	83.66	4598.07					
1/6/14	83.55	4598.18					
7/7/14	82.43	4599.30					
7/20/15	82.57	4599.16					
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
					1/31/12	63.82	4562.19
					4/11/12	65.72	4560.29
					7/9/12	70.50	4555.51
					10/4/12	73.34	4552.67
1/17/13	75.04	4550.97					
4/9/13	78.05	4547.96					
7/9/13	78.37	4547.64					
10/15/13	72.38	4553.63					
1/14/14	71.88	4554.13					
4/8/14	71.03	4554.98					
7/8/14	72.03	4553.98					
10/22/14	67.75	4558.26					
7/24/15	74.64	4551.37					
ECHAVE	219449	599701	3470168	4648	2/1/12	216.71	4431.29
					1/18/13	218.41	4429.59

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					1/31/12	46.80	4596.06
					4/11/12	52.07	4590.79
					7/6/12	62.39	4580.47
					10/3/12	71.66	4571.20
					1/17/13	59.73	4583.13
					FLEMING	218386	605565.701
7/9/13	92.84	4550.02					
10/15/13	28.50	4614.36					
1/14/14	49.32	4593.54					
4/8/14	52.03	4590.83					
7/8/14	66.62	4576.24					
10/21/14	24.56	4618.30					
7/24/15	41.32	4601.54					
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					
2/3/12	370.84	4322.84					
7/9/12	373.86	4319.82					
1/18/13	373.96	4319.72					
7/17/13	374.88	4318.80					
1/10/14	379.63	4314.05					
7/17/14	372.97	4320.71					
FRANCO 101	500101	602848.756	3468830.905	4636.75	4/10/13	196.05	4440.70
					7/10/13	196.19	4440.56
					10/16/13	196.65	4440.10
					1/14/14	196.77	4439.98
					4/8/14	196.86	4439.89
					7/14/14	197.08	4439.67
10/8/14	197.91	4438.84					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
FRANCO 383	221383	602817.854	3468831.563	4636.88	9/13/12	195.19	4441.69
					10/5/12	195.00	4441.88
					12/3/12	196.70	4440.18
					1/15/13	196.30	4440.58
					2/6/13	195.62	4441.26
					3/7/13	196.20	4440.68
					4/10/13	196.25	4440.63
					7/10/13	196.13	4440.75
					10/16/13	196.30	4440.58
					1/14/14	196.46	4440.42
					4/8/14	196.89	4439.99
					7/14/14	196.87	4440.01
10/8/14	196.86	4440.02					
7/27/15	198.11	4438.77					
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
					2/2/12	196.09	4442.36
					4/13/12	196.30	4442.15
					7/11/12	196.72	4441.73
					10/5/12	197.08	4441.37
1/11/13	197.51	4440.94					
4/15/13	197.76	4440.69					
7/10/13	197.87	4440.58					
10/11/13	198.27	4440.18					
1/17/14	198.46	4439.99					
4/15/14	198.58	4439.87					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					2/2/12	199.50	4441.24
					4/13/12	200.40	4440.34
					7/11/12	199.15	4441.59
					10/5/12	202.71	4438.03
1/11/13	199.38	4441.36					
4/15/13	200.53	4440.21					
7/10/13	200.13	4440.61					
10/11/13	200.27	4440.47					
1/17/14	201.83	4438.91					
4/15/14	200.67	4440.07					
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
2/1/12	651.72	4272.59					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/6/12	189.02	4442.11
					9/13/12	190.08	4441.05
					1/11/13	190.48	4440.65
					9/18/13	191.21	4439.92
1/17/14	191.48	4439.65					
7/21/14	191.73	4439.40					
2/2/15	191.44	4439.69					
8/4/15	191.74	4439.39					
HOBAN	805290	601705.848	3468880.329	4607.60	2/27/08	163.05	4444.55
					5/7/08	163.28	4444.32
					7/14/08	163.87	4443.73
					10/16/08	163.95	4443.65
					1/28/09	163.82	4443.78
					4/15/09	164.16	4443.44
					7/14/09	164.59	4443.01
					10/15/09	165.00	4442.60
					3/2/10	165.32	4442.28
					5/18/10	165.71	4441.89
					7/20/10	166.17	4441.43
					10/19/10	166.45	4441.15
					8/31/11	167.76	4439.84
					12/14/11	168.13	4439.47
					2/1/12	168.09	4439.51
					4/19/12	168.32	4439.28
					7/11/12	169.10	4438.50
					10/17/12	169.40	4438.20
					2/15/13	169.70	4437.90
					5/8/13	169.95	4437.65
					8/13/13	170.31	4437.29
					11/1/13	170.54	4437.06
2/10/14	170.22	4437.38					
5/7/14	170.61	4436.99					
7/21/14	170.90	4436.70					
11/13/14	170.81	4436.79					
2/4/15	170.26	4437.34					
5/19/15	170.37	4437.23					
9/10/15	170.57	4437.03					
10/21/15	170.58	4437.02					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
HOWARD 312	221312	601308.920	3468772.630	4594.9356	8/14/12	188.36	4406.58
					10/16/12	193.33	4401.61
					2/6/13	193.74	4401.20
					4/9/13	195.30	4399.64
					7/12/13	198.27	4396.67
					10/16/13	201.08	4393.86
					1/8/14	202.61	4392.33
					4/10/14	204.64	4390.30
					7/14/14	206.97	4387.97
					10/10/14	206.36	4388.58
					5/19/15	208.08	4386.86
7/31/15	210.54	4384.40					
HOWARD NR	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
					2/1/12	155.08	4438.83
					4/13/12	155.40	4438.51
					9/13/12	156.29	4437.62
					10/16/12	156.43	4437.48
					2/6/13	156.27	4437.64
					4/9/13	156.71	4437.20
					7/12/13	157.18	4436.73
					10/16/13	157.52	4436.39
					1/8/14	157.16	4436.75
					4/10/14	157.55	4436.36
7/14/14	157.92	4435.99					
10/10/14	157.68	4436.23					
2/2/15	157.11	4436.80					
5/19/15	157.31	4436.60					
7/31/15	157.58	4436.33					
10/8/15	157.36	4436.55					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/6/12	139.27	4432.76
					4/23/12	139.76	4432.27
					7/17/12	140.69	4431.34
					10/9/12	141.00	4431.03
					1/10/13	140.80	4431.23
					4/8/13	141.32	4430.71
					7/11/13	141.81	4430.22
					10/7/13	141.63	4430.40
1/7/14	141.10	4430.93					
4/9/14	140.91	4431.12					
7/10/14	141.97	4430.06					
10/8/14	141.45	4430.58					
5/19/15	140.47	4431.56					
7/21/15	140.80	4431.23					
10/8/15	140.21	4431.82					
LADD 251	520251	594788.933	3470348.534	4443.83	3/22/13	221.32	4222.51
					6/14/13	221.78	4222.05
					9/24/13	219.6	4224.23
					12/3/13	217.44	4226.39
					2/25/14	217.59	4226.24
					6/4/14	218.27	4225.56
					9/10/14	219.04	4224.79
					11/20/14	213.58	4230.25
					3/24/15	214.18	4229.65
9/17/15	216.39	4227.44					



**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
LADD 538	505538	596790.675	3469638.573	4527.05	2/9/10	253.10	4273.95
					4/28/10	253.83	4273.22
					7/28/10	254.05	4273.00
					12/8/10	252.87	4274.18
					3/17/11	252.76	4274.29
					6/24/11	288.00	4239.05
					9/29/11	276.58	4250.47
					12/16/11	250.68	4276.37
					2/15/12	253.80	4273.25
					6/11/12	258.90	4268.15
					9/26/12	255.76	4271.29
					12/19/12	249.43	4277.62
					3/22/13	250.51	4276.54
					6/27/13	270.00	4257.05
					9/24/13	250.80	4276.25
					12/3/13	251.36	4275.69
					2/25/14	253.36	4273.69
					6/4/14	259.63	4267.42
9/10/14	248.68	4278.37					
11/20/14	268.66	4258.39					
3/24/15	248.46	4278.59					
9/17/15	243.05	4284.00					
LADD 635	224635	598724.834	3467541.096	4598.99	7/18/15	169.31	4429.68
					12/17/15	169.54	4429.45
LADD 837	519837	594757.700	3470817.194	4470.11	2/9/10	262.80	4207.31
					4/28/10	262.65	4207.46
					7/28/10	265.75	4204.36
					12/8/10	262.38	4207.73
					3/17/11	262.65	4207.46
					6/24/11	262.51	4207.60
					9/29/11	262.28	4207.83
					12/16/11	264.32	4205.79
					2/15/12	262.24	4207.87
					6/11/12	264.04	4206.07
					9/26/12	261.75	4208.36
					12/19/12	261.94	4208.17
					3/27/13	266.68	4203.43
					6/14/13	261.51	4208.60
					9/24/13	261.38	4208.73
					12/3/13	260.85	4209.26
					2/25/14	261.04	4209.07
					6/4/14	262.53	4207.58
9/10/14	263.68	4206.43					
11/20/14	261.18	4208.93					
3/24/15	261.44	4208.67					
9/17/15	264.32	4205.79					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
LADD 977	642977	597619.168	3468714.011	4513.40	3/17/11	82.32	4431.08
					6/24/11	84.00	4429.40
					9/29/11	83.62	4429.78
					12/16/11	84.8	4428.60
					2/15/12	84.67	4428.73
					6/11/12	85.7	4427.70
					9/26/12	84.96	4428.44
					12/19/12	86.27	4427.13
					3/22/13	85.18	4428.22
					6/14/13	86.54	4426.86
					9/24/13	82.66	4430.74
					12/3/13	84.48	4428.92
					2/25/14	85.27	4428.13
					6/4/14	85.88	4427.52
					9/10/14	86.15	4427.25
					11/20/14	80.95	4432.45
					3/24/15	83.73	4429.67
5/19/15	84.28	4429.12					
9/17/15	86.44	4426.96					
12/17/15	86.81	4426.59					
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
					2/7/12	161.31	4439.39
					4/11/12	161.57	4439.13
					7/6/12	162.36	4438.34
					10/8/12	162.43	4438.27
					1/10/13	162.57	4438.13
					4/18/13	163.08	4437.62
10/14/13	163.61	4437.09					
1/8/14	163.42	4437.28					
4/14/14	163.79	4436.91					
7/14/14	164.03	4436.67					
10/7/14	163.89	4436.81					
2/2/15	163.32	4437.38					
5/19/15	163.54	4437.16					
7/31/15	163.83	4436.87					
10/8/15	163.64	4437.06					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
MCCONNELL 459	221459	601471.708	3468840.682	4601.55	7/27/12	170.50	4431.05
					10/8/12	166.81	4434.74
					1/15/13	166.32	4435.23
					4/10/13	166.79	4434.76
					7/19/13	167.53	4434.02
					10/14/13	167.13	4434.42
					1/8/14	167.90	4433.65
					4/14/14	167.28	4434.27
					9/9/14	167.37	4434.18
					10/7/14	167.24	4434.31
					5/19/15	168.03	4433.52
7/31/15	170.86	4430.69					
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
					2/7/12	290.92	4437.61
					4/12/12	291.15	4437.38
					7/18/12	291.37	4437.16
					10/4/12	291.63	4436.90
					1/11/13	292.15	4436.38
					4/11/13	292.29	4436.24
					7/17/13	292.43	4436.10
10/17/13	292.86	4435.67					
1/16/14	293.20	4435.33					
4/15/14	293.20	4435.33					
7/21/14	293.45	4435.08					
10/8/14	293.62	4434.91					
1/27/15	293.36	4435.17					
8/3/15	293.54	4434.99					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/3/12	591.24	4169.99
					1/9/13	551.35	4209.88
					1/6/14	538.84	4222.39
7/7/14	594.42	4166.81					
7/20/15	553.54	4207.69					
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
					3/6/12	104.30	4427.08
					12/14/12	107.24	4424.14
					3/22/13	107.20	4424.18
					6/24/13	113.50	4417.88
					9/23/13	105.00	4426.38
					12/19/13	103.45	4427.93
					3/24/14	103.12	4428.26
					6/23/14	107.06	4424.32
					9/23/14	104.77	4426.61
					12/22/14	101.30	4430.08
					3/23/15	101.56	4429.82
6/22/15	104.33	4427.05					
9/28/15	113.64	4417.74					
12/21/15	112.43	4418.95					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					3/6/12	89.24	4429.04
					12/14/12	90.83	4427.45
					3/22/13	88.65	4429.63
					6/24/13	91.70	4426.58
					9/23/13	86.88	4431.40
					12/19/13	89.11	4429.17
					3/24/14	89.48	4428.80
					6/23/14	90.77	4427.51
					9/23/14	89.10	4429.18
					12/22/14	86.80	4431.48
3/23/15	87.68	4430.60					
6/22/15	89.40	4428.88					
9/28/15	90.65	4427.63					
12/21/15	90.97	4427.31					
NWC-02	562944	600177.435	3467474.673	4600.44	10/27/08	160.51	4439.93
					4/29/09 <sup>2</sup>	160.5	4439.94
					9/10/09 <sup>2</sup>	155	4445.44
					4/2010 <sup>2</sup>	131	4469.44
					3/1/13 <sup>2</sup>	131	4469.44
					2/12/15	165.02	4435.42
					7/30/15	166.36	4434.08
10/6/15	165.92	4434.52					
NWC-03	203321	601153.857	3468350.838	4574.99	11/3/08	131.48	4443.51
					4/29/09 <sup>2</sup>	130	4444.99
					9/10/09 <sup>2</sup>	126	4448.99
					10/9/09 <sup>5</sup>	125	4449.99

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
NWC-03 CAP	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
					1/31/12	134.50	4438.32
					4/25/12	135.09	4437.73
					7/18/12	135.73	4437.09
					10/10/12	135.97	4436.85
					1/10/13	135.60	4437.22
					4/17/13	136.32	4436.50
					7/12/13	136.78	4436.04
					10/10/13	136.78	4436.04
1/13/14	136.43	4436.39					
4/7/14	136.93	4435.89					
7/10/14	137.30	4435.52					
2/12/15	136.27	4436.55					
7/30/15	136.88	4435.94					
NWC-04	551849	605829.808	3469071.959	4690.77	12/2/08	352.11	4338.66
					4/29/09 <sup>2</sup>	328	4362.77
					9/10/09 <sup>2</sup>	324	4366.77
					4/2010 <sup>2</sup>	216	4474.77
					3/1/13 <sup>2</sup>	216	4474.77
NWC-06	575700	599822.821	3467749.954	4592.50	4/29/09 <sup>2</sup>	156	4436.50
					9/10/09 <sup>2</sup>	155	4437.50
					10/9/09 <sup>2</sup>	148	4444.50
					4/2010 <sup>2</sup>	140	4452.50
					3/1/13 <sup>2</sup>	140	4452.50
					7/30/15	160.95	4431.55
10/6/15	160.48	4432.02					
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
2/3/12	74.57	4637.38					
7/9/12	74.63	4637.32					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/6/12	169.09	4522.31
					2/29/12	169.32	4522.08
					3/15/12	169.64	4521.76
					4/12/12	168.85	4522.55
					7/9/12	170.38	4521.02
					11/27/12	169.82	4521.58
					1/18/13	169.12	4522.28
					2/6/13	168.76	4522.64
					4/9/13	167.79	4523.61
					PARRA	576415	602170.716
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					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
PIONKE 395	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
					2/1/12	153.92	4438.21
					4/12/12	154.35	4437.78
					7/11/12	154.97	4437.16
					10/17/12	155.31	4436.82
					1/9/13	155.25	4436.88
					4/17/13	155.76	4436.37
					7/18/13	156.09	4436.04
					10/17/13	156.39	4435.74
					2/5/14	155.84	4436.29
					4/9/14	156.21	4435.92
7/11/14	156.66	4435.47					
10/7/14	156.47	4435.66					
2/2/15	155.81	4436.32					
5/18/15	155.97	4436.16					
7/22/15	156.29	4435.84					
10/8/15	156.03	4436.10					
PIONKE 517	221517	600909.967	3468866.654	4587.20792	9/18/12	152.00	4435.21
					10/11/12	152.15	4435.06
					1/9/13	152.23	4434.98
					4/17/13	152.58	4434.63
					7/16/13	153.11	4434.10
					10/17/13	153.27	4433.94
					3/5/14	153.24	4433.97
					4/9/14	153.07	4434.14
					7/11/14	153.56	4433.65
					10/7/14	153.31	4433.90
					5/18/15	152.76	4434.45
7/22/15	153.12	4434.09					



**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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					
POWER 639	222639	602146.123	3471373.655	4734.38	1/16/14	294.07	4440.31
					2/5/14	294.07	4440.31
					3/5/14	294.20	4440.18
					4/15/14	294.14	4440.24
					5/13/14	294.25	4440.13
					6/23/14	294.28	4440.10
					7/17/14	294.32	4440.06
					8/11/14	294.44	4439.94
					9/9/14	294.47	4439.91
					10/8/14	294.49	4439.89
					1/27/15	294.24	4440.14
					3/10/15	294.19	4440.19
					4/28/15	294.17	4440.21
					5/14/15	249.23	4485.15
6/11/15	294.29	4440.09					
7/30/15	294.38	4440.00					
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
					4/10/12	163.22	4433.39
					7/6/12	163.85	4432.76
					10/8/12	164.38	4432.23
					4/19/13	164.96	4431.65
					1/13/14	165.26	4431.35
					4/14/14	164.85	4431.76
					2/2/15	164.33	4432.28
5/28/15	164.39	4432.22					
7/21/15	164.65	4431.96					
10/8/15	164.72	4431.89					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					1/31/12	53.21	4594.70
					4/11/12	54.50	4593.41
					7/6/12	58.75	4589.16
					10/3/12	60.98	4586.93
1/17/13	56.57	4591.34					
4/18/13	56.32	4591.59					
7/9/13	60.30	4587.61					
10/15/13	44.33	4603.58					
1/14/14	34.50	4613.41					
4/8/14	36.72	4611.19					
7/8/14	43.38	4604.53					
10/22/14	44.65	4603.26					
8/4/15	48.31	4599.60					
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
					1/30/12	137.91	4439.44
					4/23/12	138.61	4438.74
					7/13/12	139.65	4437.70
					10/10/12	139.55	4437.80
					1/15/13	139.23	4438.12
					4/15/13	139.97	4437.38
					7/15/13	139.94	4437.41
10/16/13	140.50	4436.85					
1/9/14	140.12	4437.23					
4/11/14	140.56	4436.79					
7/18/14	140.64	4436.71					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
ROGERS 750 <sup>3</sup>	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
					1/30/12	153.56	4437.10
					4/10/12	154.13	4436.53
					7/17/12	155.10	4435.56
					1/17/13	154.56	4436.10
					4/18/13	155.66	4435.00
7/17/13	155.71	4434.95					
4/14/14	155.97	4434.69					
7/30/15	155.91	4434.75					
10/8/15	155.55	4435.11					
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
					4/13/12	298.47	4436.71
					1/11/13	299.39	4435.79
					4/11/13	299.72	4435.46
					7/25/13	300.06	4435.12
					10/17/13	300.07	4435.11
					1/8/14	300.19	4434.99
					4/15/14	300.31	4434.87
10/21/14	300.38	4434.80					
1/27/15	299.76	4435.42					
7/30/15	299.74	4435.44					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
SCHWARTZ	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
					2/6/12	127.34	4437.15
					4/10/12	127.78	4436.71
					7/16/12	128.84	4435.65
					10/17/12	128.98	4435.51
					3/13/13	128.81	4435.68
					5/14/13	129.60	4434.89
					7/15/13	129.05	4435.44
					10/14/13	130.15	4434.34
4/9/14	129.77	4434.72					
7/18/14	129.81	4434.68					
10/22/14	129.66	4434.83					
2/3/15	128.66	4435.83					
5/18/15	129.30	4435.19					
8/4/15	129.51	4434.98					
10/8/15	129.34	4435.15					
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
					1/31/12	55.65	4595.57
					7/9/12	10.69	4640.53
					1/18/13	10.50	4640.72
					7/10/13	58.16	4593.06
					1/14/14	45.51	4605.71
					7/8/14	45.39	4605.83
1/26/15	47.91	4603.31					
7/24/15	49.71	4601.51					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/3/12	Dry	<4426
					7/9/12	Dry	<4426
					9/13/12	Dry	<4426
1/17/13	Dry	<4426					
7/9/13	Dry	<4426					
1/10/14	Dry	<4426					
7/8/14	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
					2/3/12	37.86	4678.73
					7/10/12	40.39	4676.20
					1/9/13	38.51	4678.08
7/8/13	42.26	4674.33					
1/10/14	29.43	4687.16					
7/7/14	33.68	4682.91					
7/20/15	33.08	4683.51					
THOMPSON 151	612151	599543.561	3467387.294	4597.62	8/9/13	167.86	4429.76
					10/10/13	167.68	4429.94
					1/16/14	167.19	4430.43
					4/14/14	166.98	4430.64
					7/21/14	167.78	4429.84
					10/22/14	167.56	4430.06
					2/2/15	166.56	4431.06
					5/19/15	166.51	4431.11
8/3/15	167.09	4430.53					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (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
					2/2/12	346.94	4461.49
					8/13/12	344.53	4463.90
					2/14/13	343.50	4464.93
					8/27/13	343.84	4464.59
2/18/14	341.47	4466.96					
8/12/14	338.50	4469.93					
2/5/15	336.02	4472.41					
9/14/15	334.23	4474.20					
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
2/1/12	135.04	4762.81					
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
					7/9/12	161.40	4546.48
					2/14/13	161.05	4546.83
					8/19/13	161.30	4546.58
7/21/14	162.60	4545.28					
2/5/15	162.36	4545.52					
9/10/15	162.94	4544.94					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
TM-10 USBP	522696	601586.268	3471816.397	4741.18	3/15/12	279.30	4461.88
					4/24/12	279.03	4462.15
					9/13/12	278.30	4462.88
					10/19/12	277.45	4463.73
					3/7/13	276.55	4464.63
					4/17/13	276.42	4464.76
					7/23/13	275.99	4465.19
					11/6/13	254.20	4486.98
					1/15/14	262.00	4479.18
					5/15/14	269.39	4471.79
					7/15/14	271.03	4470.15
					10/16/14	235.11	4506.07
					1/28/15	252.47	4488.71
7/24/15	264.53	4476.65					
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
					7/9/12	72.55	4645.16
					8/15/13	61.42	4656.29
					8/4/14	62.55	4655.16
2/5/15	58.80	4658.91					
9/9/15	60.06	4657.65					
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
					2/2/12	203.84	4442.03
					7/11/12	204.75	4441.12
					10/16/12	205.02	4440.85
					2/15/13	205.30	4440.57
					9/4/13	205.73	4440.14
2/12/14	207.47	4438.40					
7/21/14	210.56	4435.31					
9/10/15	206.48	4439.39					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					7/11/12	216.10	4450.57
					2/12/13	216.55	4450.12
					8/28/13	217.38	4449.29
7/21/14	218.33	4448.34					
2/4/15	218.87	4447.80					
9/10/15	219.31	4447.36					
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
					7/16/12	127.81	4434.17
					10/9/12	128.45	4433.53
					7/18/13	127.38	4434.60
					7/16/14	129.24	4432.74
2/2/15	126.81	4435.17					
5/19/15	128.38	4433.60					
7/30/15	128.31	4433.67					
10/7/15	127.26	4434.72					



**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					2/3/12	130.01	4437.21
					4/25/12	131.33	4435.89
					7/16/12	131.97	4435.25
					10/9/12	132.16	4435.06
					2/6/13	131.14	4436.08
					4/10/13	132.08	4435.14
					7/18/13	131.72	4435.50
					10/8/13	133.10	4434.12
1/9/14	132.37	4434.85					
4/9/14	132.93	4434.29					
7/16/14	132.57	4434.65					
10/9/14	132.29	4434.93					
1/29/15	132.01	4435.21					
5/18/15	132.34	4434.88					
7/30/15	132.71	4434.51					
10/7/15	132.00	4435.22					

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
WEISKOPF 802	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
					2/1/12	148.23	4438.66
					4/25/12	148.82	4438.07
					7/13/12	149.79	4437.10
					10/11/12	149.73	4437.16
					1/16/13	149.49	4437.40
					4/17/13	150.16	4436.73
					7/18/13	150.24	4436.65
					10/17/13	150.69	4436.20
1/16/14	150.08	4436.81					
4/11/14	150.75	4436.14					
7/18/14	150.85	4436.04					
10/9/14	150.89	4436.00					
2/2/15	150.01	4436.88					
5/18/15	150.25	4436.64					
8/4/15	150.72	4436.17					
10/8/15	150.47	4436.42					
WEISKOPF 897	220897	601096.780	3468647.358	4585.70	12/6/12	149.27	4436.43
					1/16/13	148.70	4437.00
					4/17/13	149.80	4435.90
					7/18/13	150.15	4435.55
					10/17/13	150.38	4435.32
					1/16/14	149.78	4435.92
					4/11/14	150.50	4435.20
					7/18/14	150.55	4435.15
					10/9/14	150.34	4435.36
5/18/15	149.95	4435.75					
8/4/15	150.31	4435.39					
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62

**TABLE 3**  
**Compilation of Groundwater Elevation Data**

Well Name	ADWR 55 Registry Number	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
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
					1/31/12	149.31	4431.63
					4/10/12	149.64	4431.30
					7/17/12	150.63	4430.31
					10/8/12	150.92	4430.02
1/10/13	150.89	4430.05					
4/18/13	151.36	4429.58					
7/15/13	152.14	4428.80					
10/7/13	151.65	4429.29					
1/7/14	151.10	4429.84					
4/9/14	150.81	4430.13					
7/17/14	152.02	4428.92					
8/3/15	150.65	4430.29					
10/8/15	150.10	4430.84					

Notes:

35-71891 = ADWR 35 Database

ADWR = Arizona Department of Water Resources

ft amsl = feet above mean sea level

NR = No Record

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

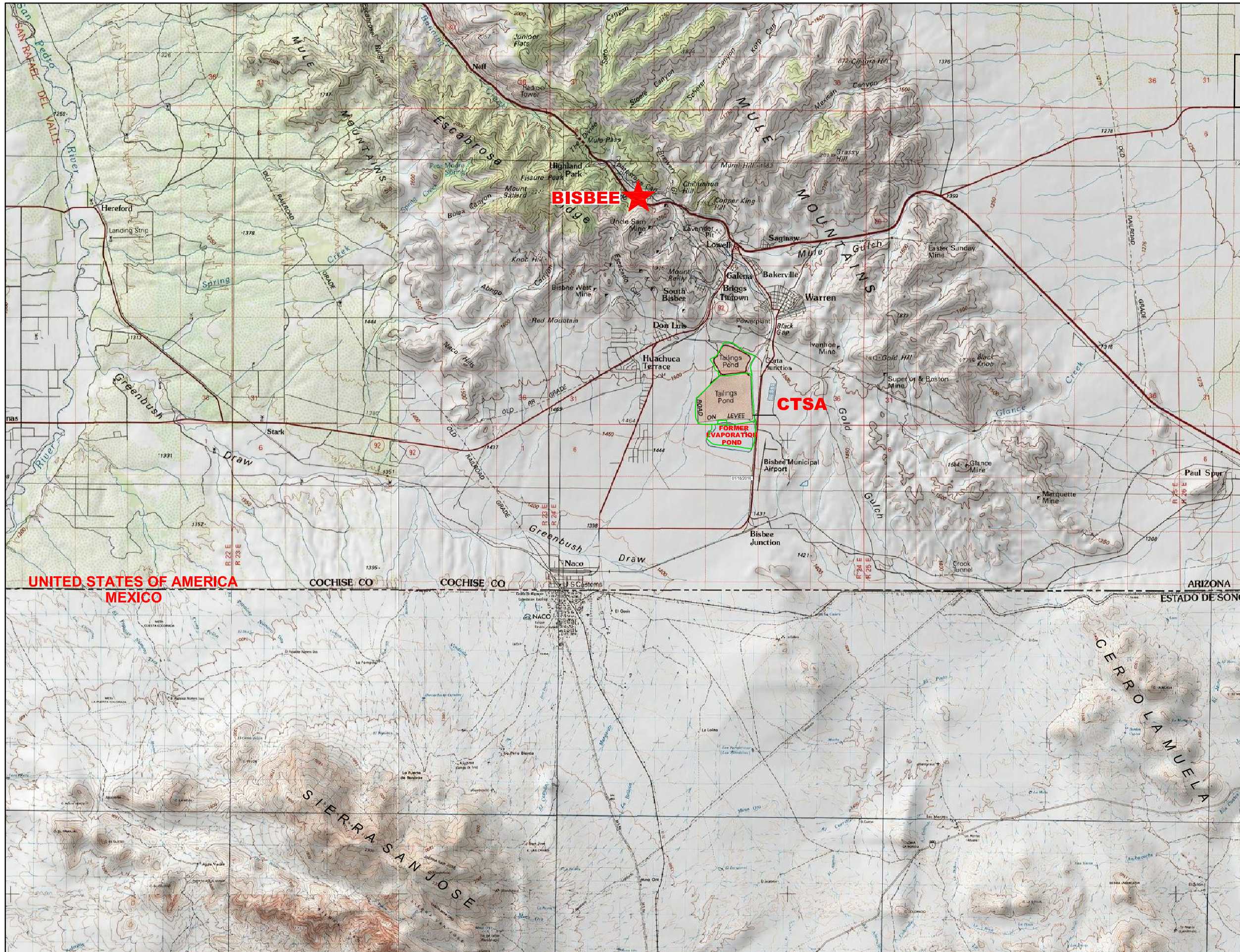
<sup>1</sup> Depth to water measurement provided by Arizona Water Company

<sup>2</sup> Depth to water measurement provided by Naco Water Company

<sup>3</sup> Well previously identified as ROGERS 803

## FIGURES





**LEGEND**

 CTSA FACILITY

UNITED STATES OF AMERICA  
MEXICO

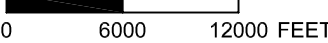
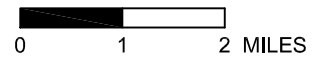
COCHISE CO

COCHISE CO

ARIZONA

ESTADO DE SONORA

**SCALE**



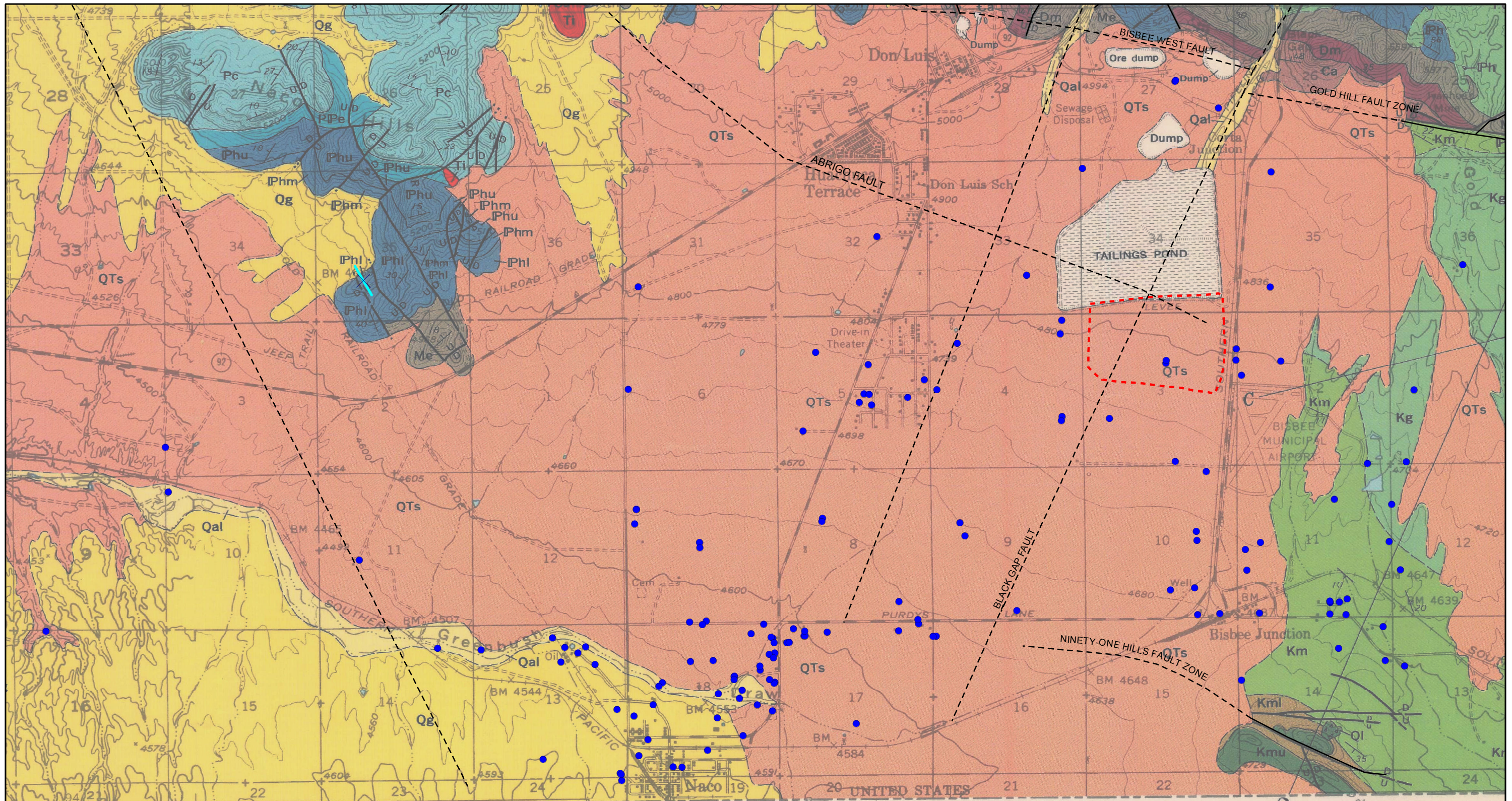
Date 01/18/2016

File ID 055038-239B



FIGURE 1  
LOCATION MAP

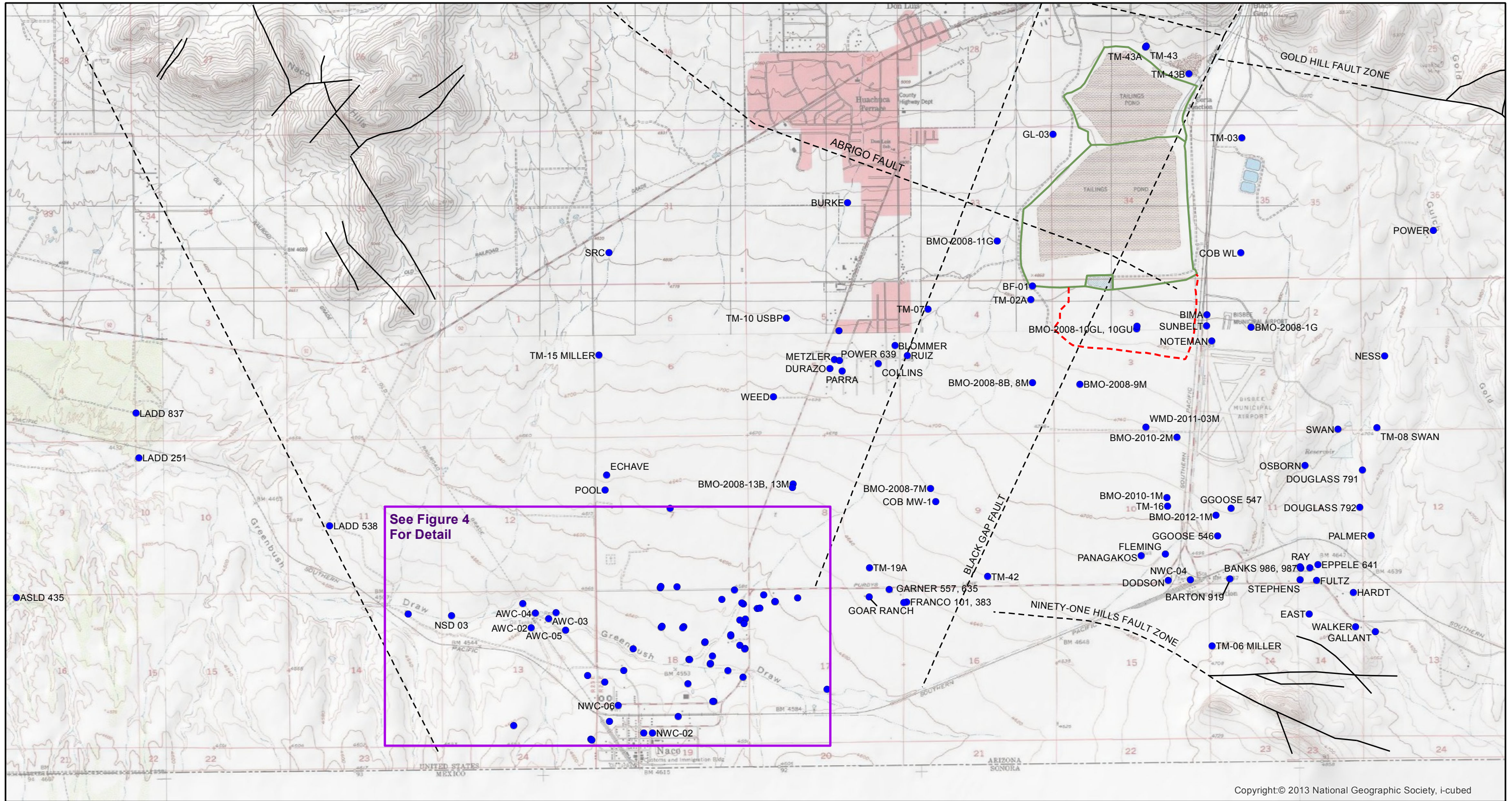




<b>Legend</b> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> Monitoring Location</li> <li>— Fault (dashed where inferred)</li> <li><span style="border: 1px dashed red; display: inline-block; width: 10px; height: 10px;"></span> Former Evaporation Ponds</li> </ul>	<b>Basin Fill</b> <ul style="list-style-type: none"> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Qal - Quaternary Alluvium</li> <li><span style="background-color: lightyellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Qg - Quaternary Gravel</li> <li><span style="background-color: lightcoral; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> QTs - Quaternary Tertiary sediment</li> <li><span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Ti - Tertiary Intrusive</li> </ul>	<b>Geologic Unit - Hayes and Landis (1964)</b> <ul style="list-style-type: none"> <li><span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Pc - Colina Limestone</li> <li><span style="background-color: cyan; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> PPe - Earp Formation</li> <li><span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Phu, Phm, Phi - Horquilla Limestone</li> <li><span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Me - Escabrosa Limestone</li> <li><span style="background-color: brown; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Dm - Martin Limestone</li> <li><span style="background-color: tan; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Ca - Abrigo Limestone</li> </ul>	<b>Bisbee Group</b> <ul style="list-style-type: none"> <li><span style="background-color: lightgrey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kc - Cintura Formation (not shown)</li> <li><span style="background-color: darkgreen; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kmu - Upper Mural Limestone</li> <li><span style="background-color: brown; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kml - Lower Mural Limestone</li> <li><span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Km - Morita Formation</li> <li><span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Kg - Glance Conglomerate</li> </ul>	<b>Paleozoic Sedimentary Formations</b> <ul style="list-style-type: none"> <li><span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Pc - Colina Limestone</li> <li><span style="background-color: cyan; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> PPe - Earp Formation</li> <li><span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Phu, Phm, Phi - Horquilla Limestone</li> <li><span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Me - Escabrosa Limestone</li> <li><span style="background-color: brown; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Dm - Martin Limestone</li> <li><span style="background-color: tan; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Ca - Abrigo Limestone</li> </ul>	<b>Scale (Feet)</b>  0      3,000      6,000	Date: 1/29/16 File ID: 055038-402
	<b>See Figure 3 for Monitoring Location Names</b>					Projection: UTM Zone 12N NAD83 Geology reprinted from Hayes and Landis (1964) USGS Miscellaneous Geologic Investigations I-418

FIGURE 2  
GEOLOGIC MAP  
WITH MONITORING LOCATIONS

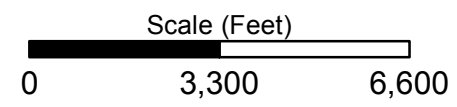




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**Legend**

- Monitoring Location
- ▭ Former Evaporation Ponds
- ▭ CTSA Facility
- Fault (dashed where inferred)

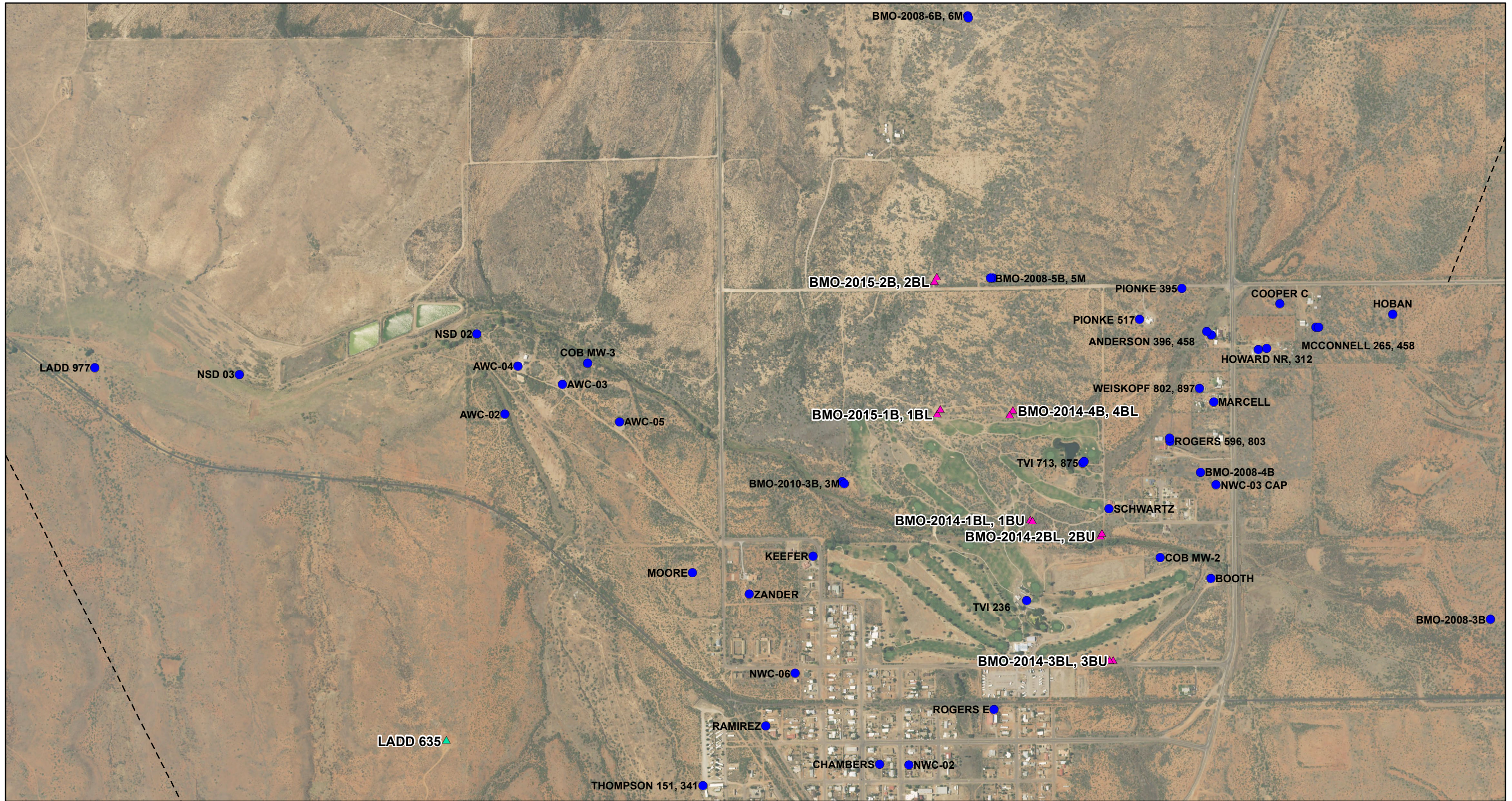


Projection: UTM Zone  
12N NAD83

Date	1/29/16	File ID	055038-357

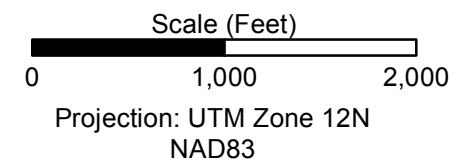
FIGURE 3  
MONITORING LOCATIONS





**Legend**

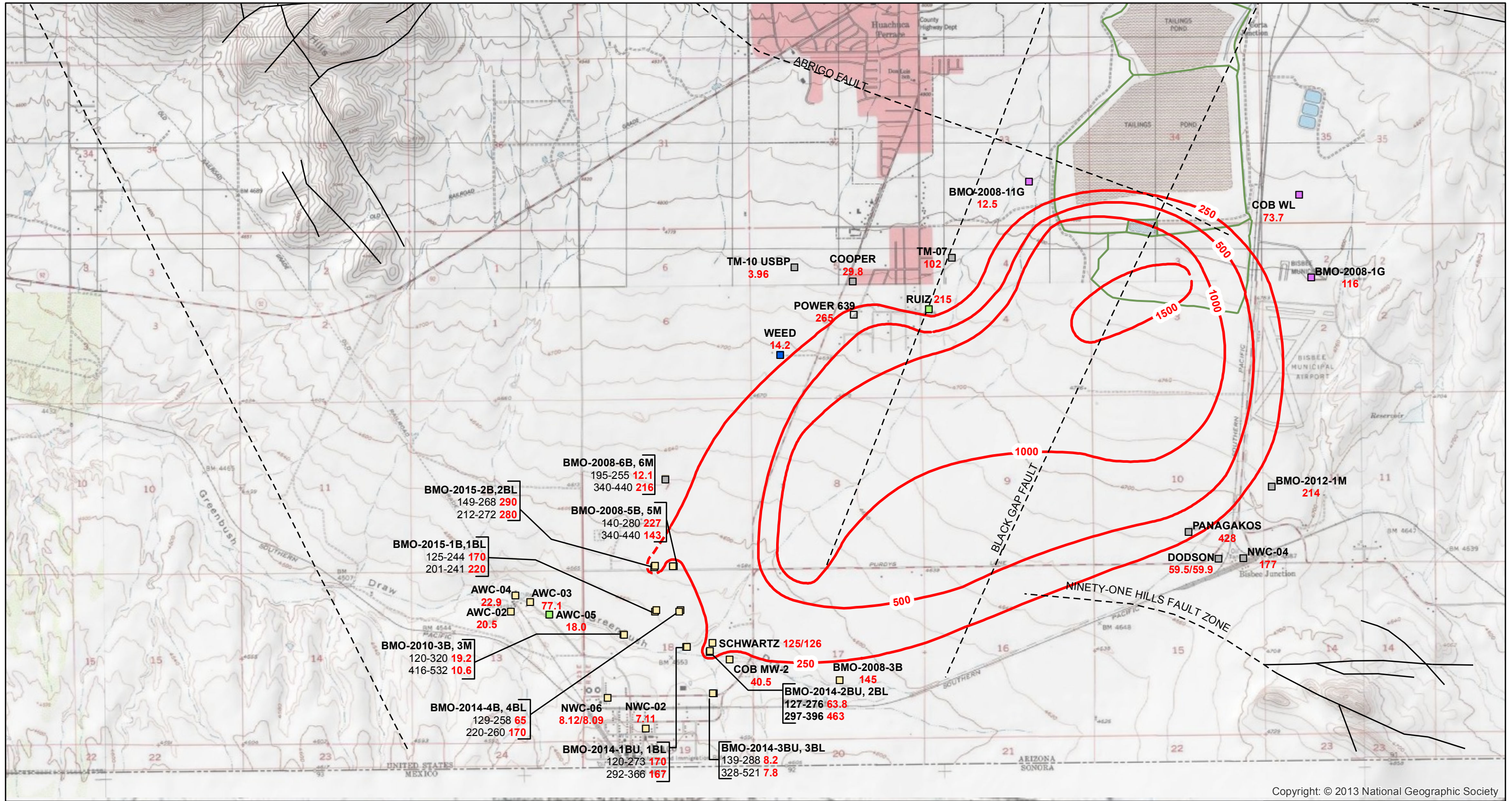
- Existing Well Location
- ▲ Expanded Goundwater Monitoring Well
- ▲ Water Supply Study Well



Date	2/1/16	File ID	055038-461

FIGURE 4  
NACO AREA  
WELL SITES



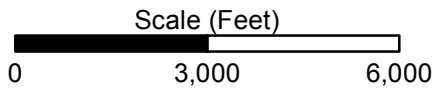


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- Legend**
- NWC-02 Well ID
  - 7.11 SO4 Concentration (mg/L)  
Duplicate results separated by "/"
  - SO4 Concentration Contours  
(dashed where inferred)
  - - - Fault (dashed where inferred)
  - CTSA Facility
  - Co-located Wells
  - Well ID
  - Screen (ft bls): Sulfate Levels (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

NSQ = Not Scheduled for Quarter  
 NPA = No Property Access  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.

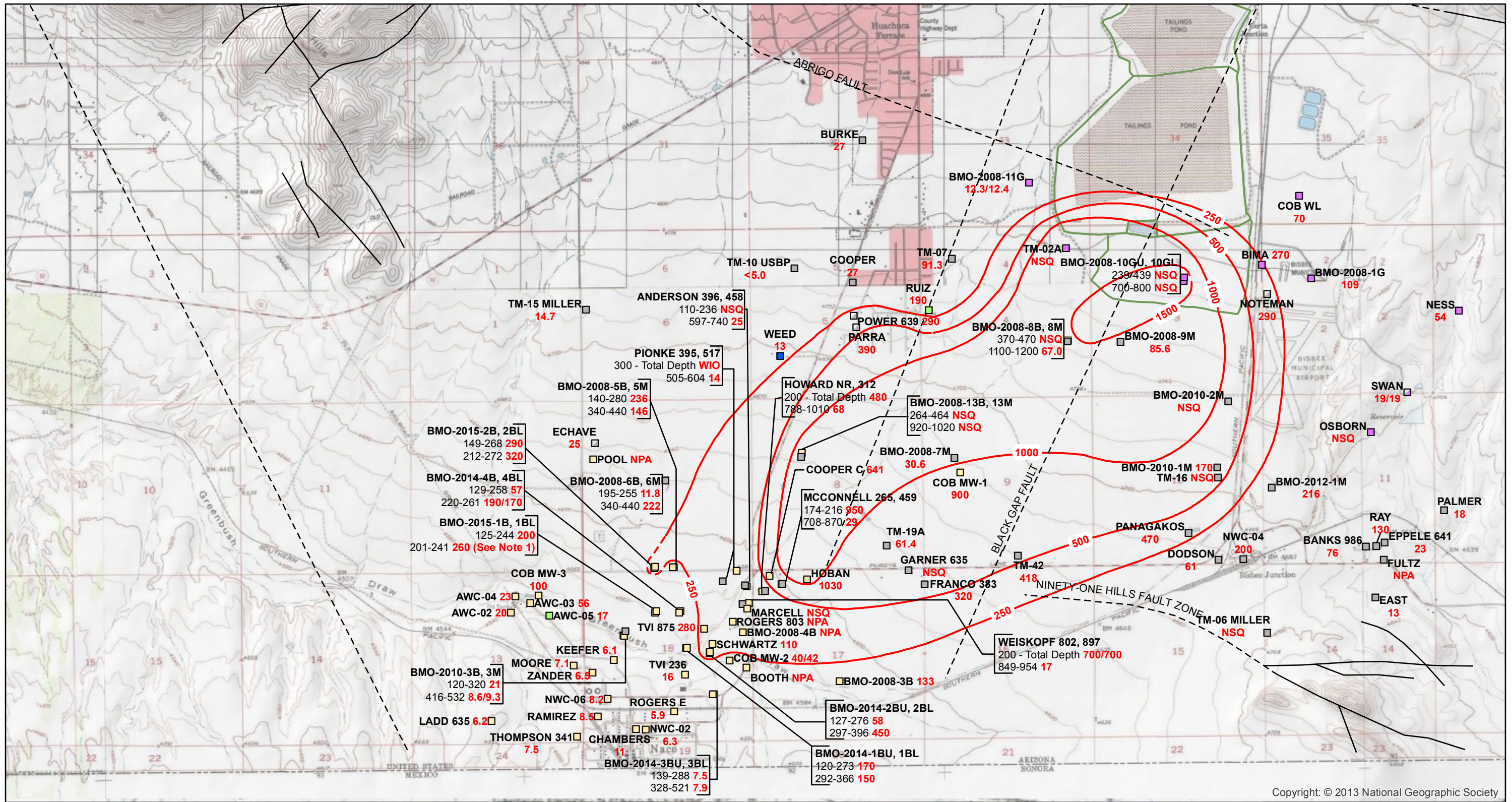


Date	2/8/16	File ID	055038-401

Projection: UTM Zone 12N NAD83

**FIGURE 5**  
 SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR FIRST QUARTER 2015





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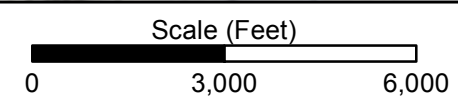
**Legend**

- AWC-02 Well ID
- 20 SO4 Concentration (mg/L)  
Duplicate results separated by "/"
- SO4 Concentration Contours  
(dashed where inferred)
- Faults (dashed where inferred)
- CTSA Facility
- Co-located Wells
  - Well ID
  - Screen (ft bls): Sulfate Levels (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

NSQ = Not Scheduled for Quarter  
 NPA = No Property Access  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.



**Notes:**

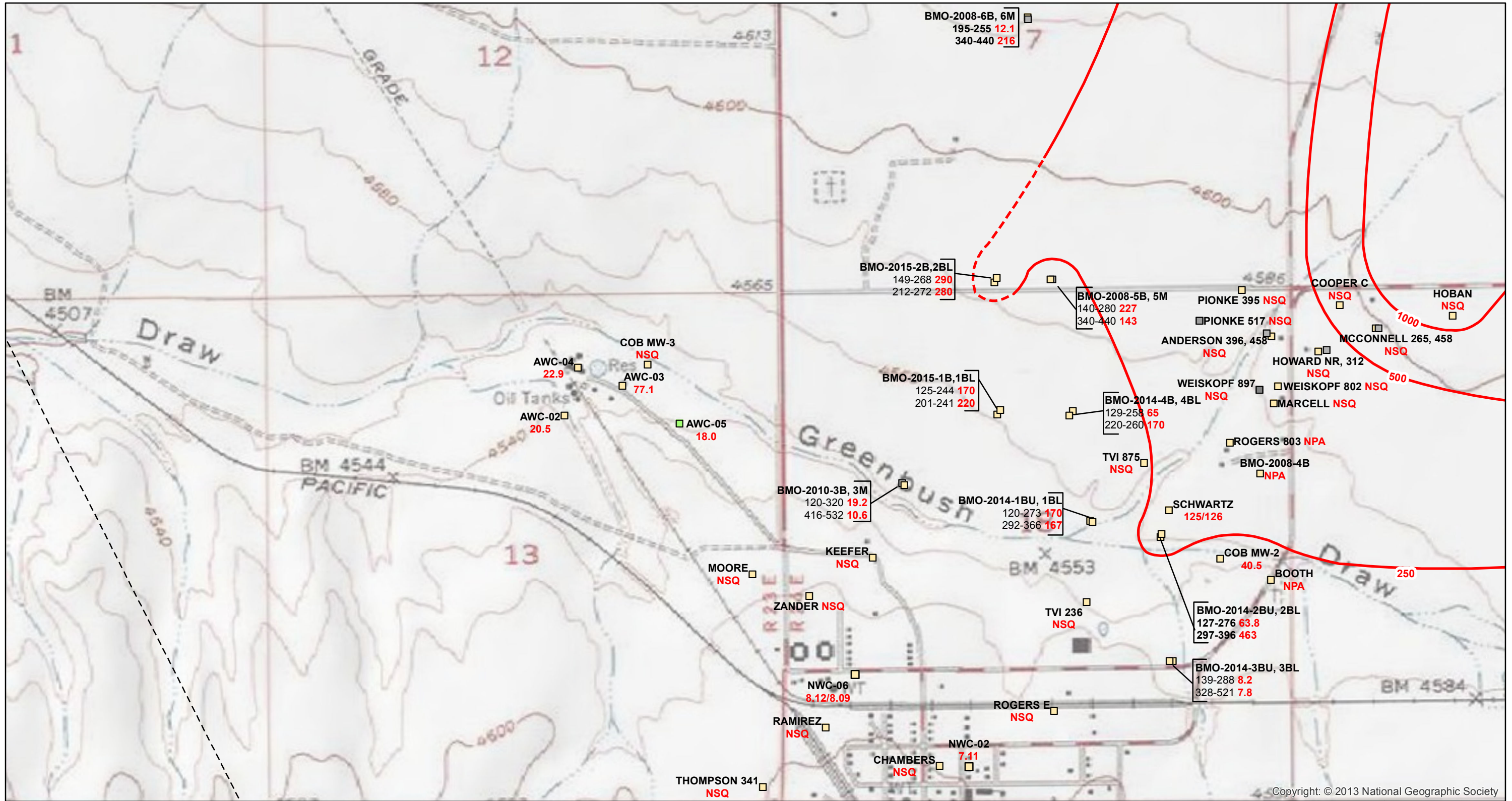
- Sulfate exceeds 250 mg/L over 40-foot screen interval of BMO-2015-1BL, but not the depth average sample of the basin fill aquifer as represented by BMO-2015-1B.

Projection: UTM Zone, 12N NAD83

Date	2/5/16	File ID	055038-450

FIGURE 6  
 SULFATE CONCENTRATIONS IN SITE-WIDE GROUNDWATER SAMPLES FOR THIRD QUARTER 2015





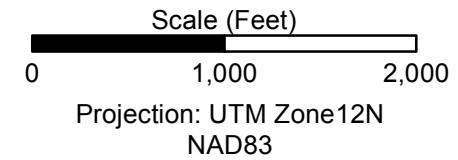
Copyright: © 2013 National Geographic Society

**Legend**

- NWC-02 Well ID
- 7.11 Sulfate Concentration (mg/L)
- Duplicate results separated by "/"
- Sulfate Concentration (dashed where inferred)
- - - Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): Sulfate Levels (mg/L)

- Screened Formation
- Basin Fill
  - Basin Fill and Undifferentiated Bisbee Group
  - Undifferentiated Bisbee Group
  - Undifferentiated Bisbee Group - Estimated
  - Undifferentiated Bisbee Group and Gance Conglomerate
  - Gance Conglomerate
  - Gance Conglomerate - Estimated
- Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations

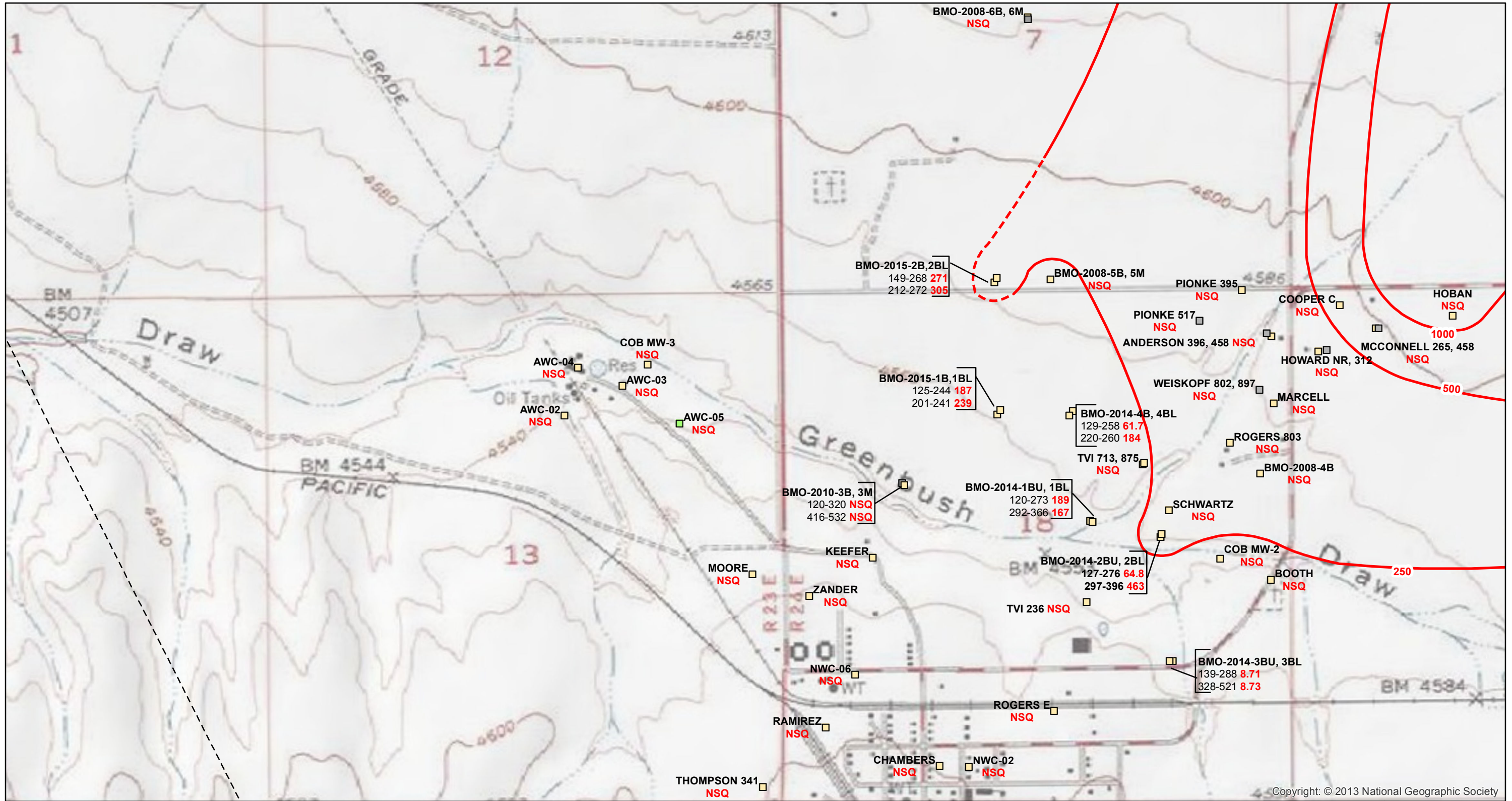
NSQ = Not Scheduled for Quarter  
 NPA = No Property Access  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.



Date	2/9/16	File ID	055038-427

FIGURE 7  
 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR FIRST QUARTER 2015





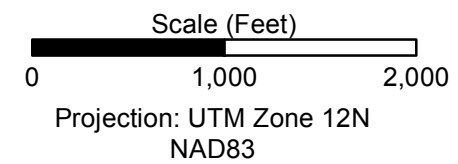
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**Legend**

- BMO-2014-1BU Well ID
- 189 Sulfate Concentration (mg/L)
- Sulfate Concentration (dashed where inferred)
- Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): Sulfate Levels (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

NSQ = Not Scheduled for Quarter  
 NPA = No Property Access  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.

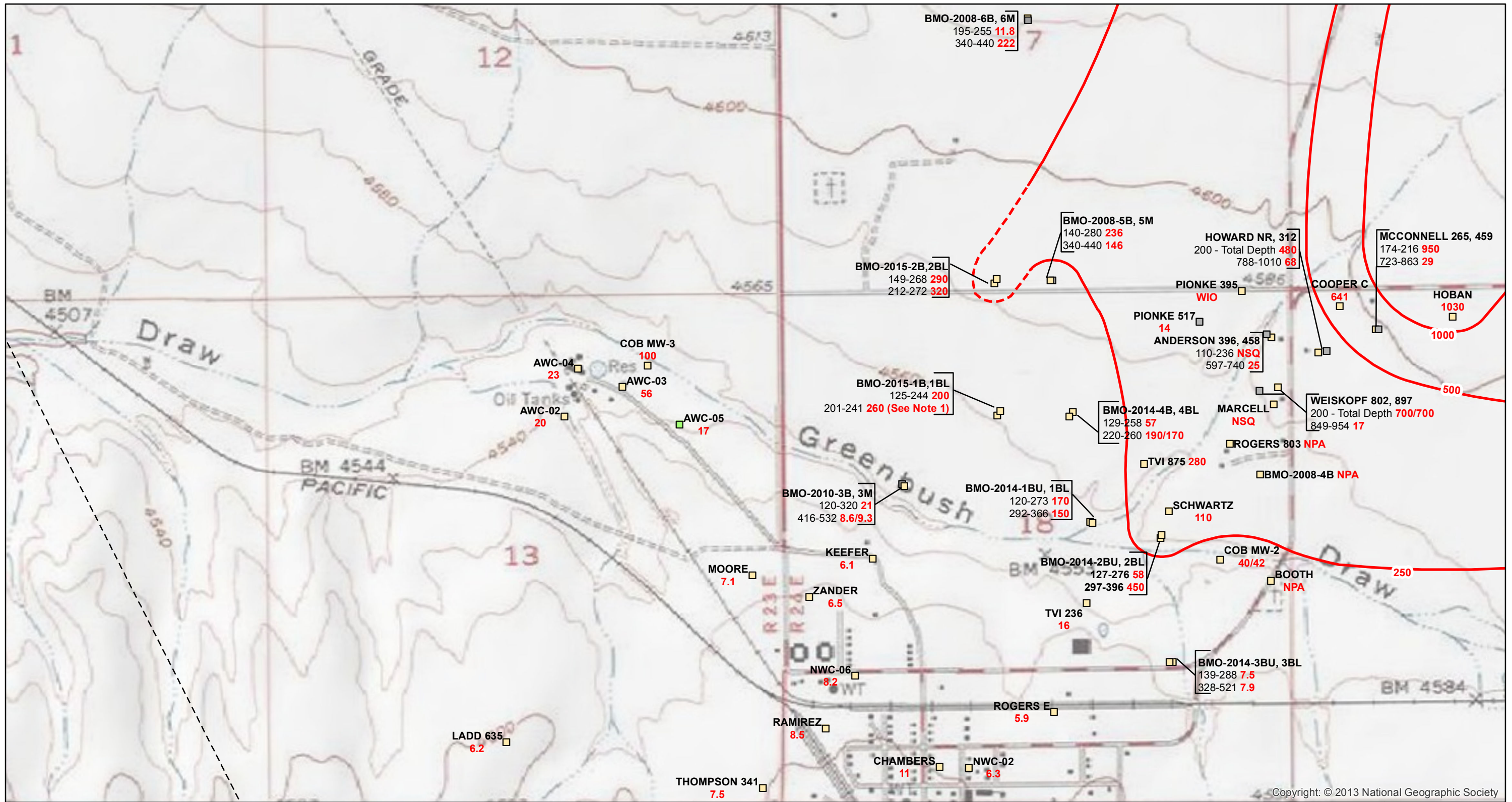


Date 2/6/16 File ID 055038-429



**FIGURE 8**  
 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR SECOND QUARTER 2015





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**Legend**

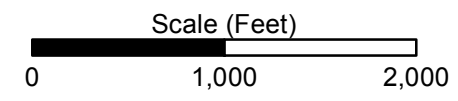
- NWC-02 Well ID
- 6.3 Sulfate Concentration (mg/L)  
Duplicate results separated by "/"
- Sulfate Concentration (dashed where inferred)
- - - Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): Sulfate Levels (mg/L)

**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

NSQ = Not Scheduled for Quarter  
 NPA = No Property Access  
 WIO = Well Inoperable  
 mg/L = milligrams per liter  
 ft bls = feet below land surface  
 Sulfate contours are based on represented and historical data.



**Notes:**

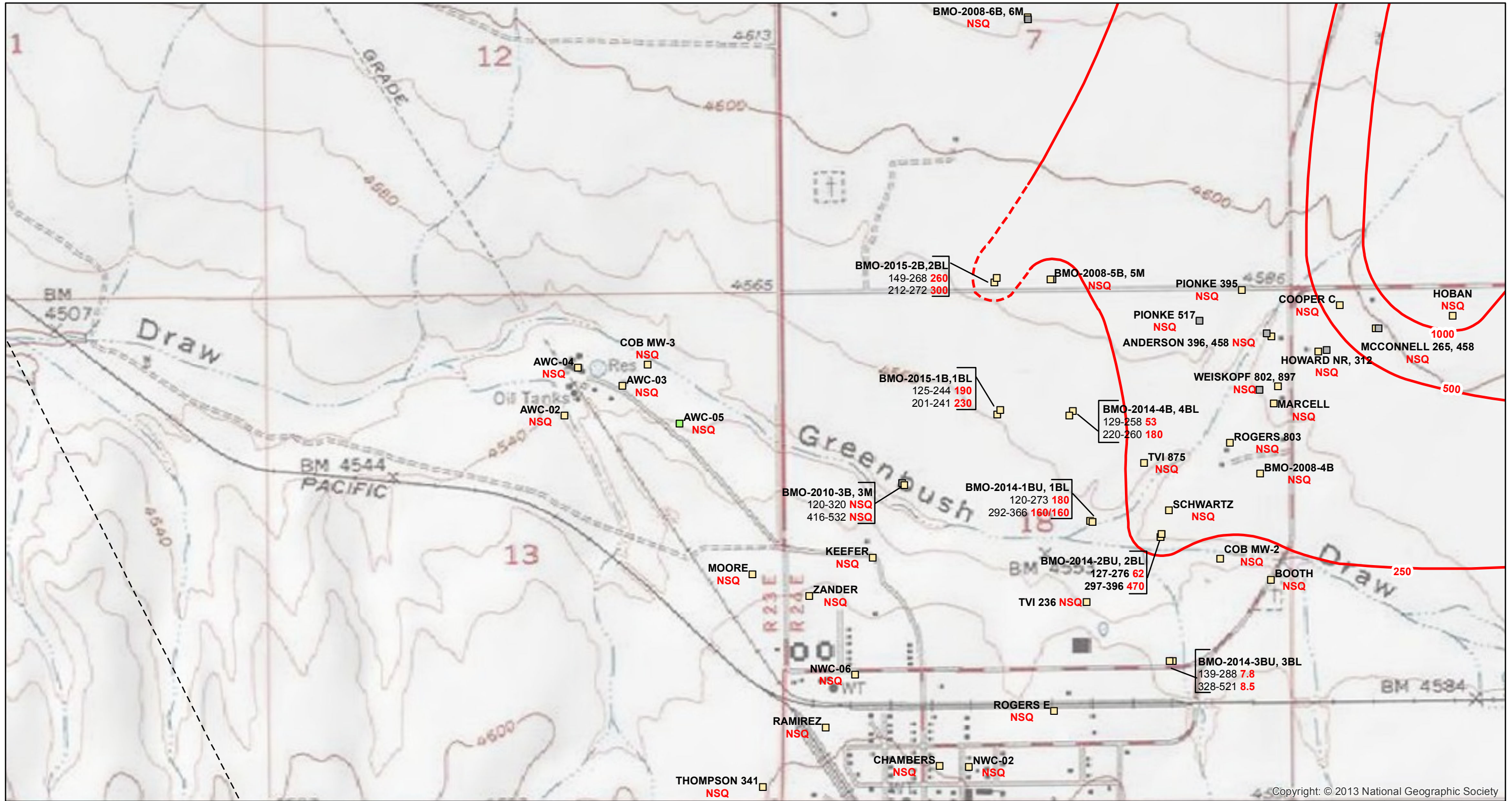
1. Sulfate exceeds 250 mg/L over 40-foot screen interval of BMO-2015-1BL, but not the depth average sample of the basin fill aquifer as represented by BMO-2015-1B.

Projection: UTM Zone, 12N NAD83


Date	2/5/16	File ID	055038-449

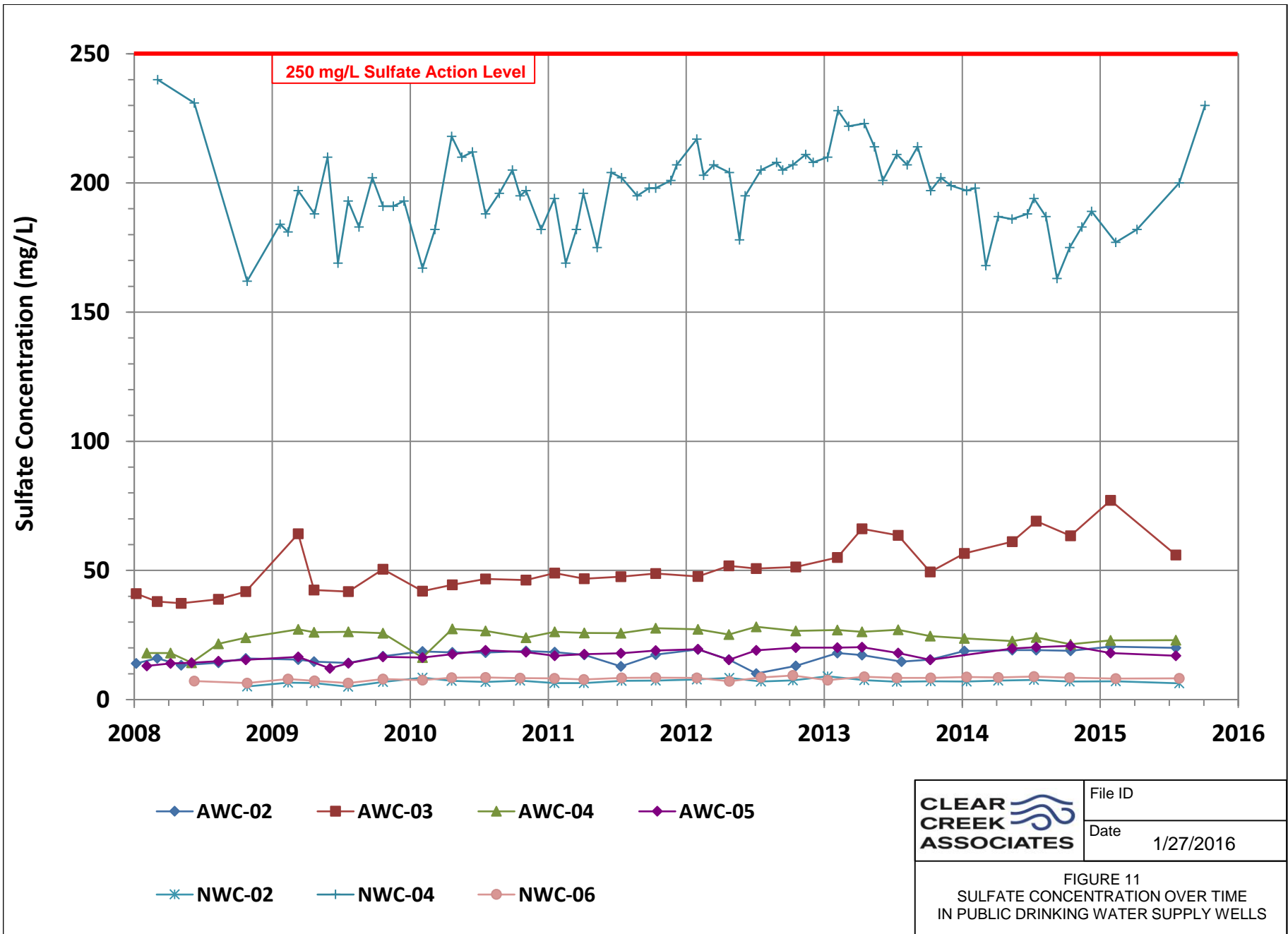
**FIGURE 9**  
 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR THIRD QUARTER 2015





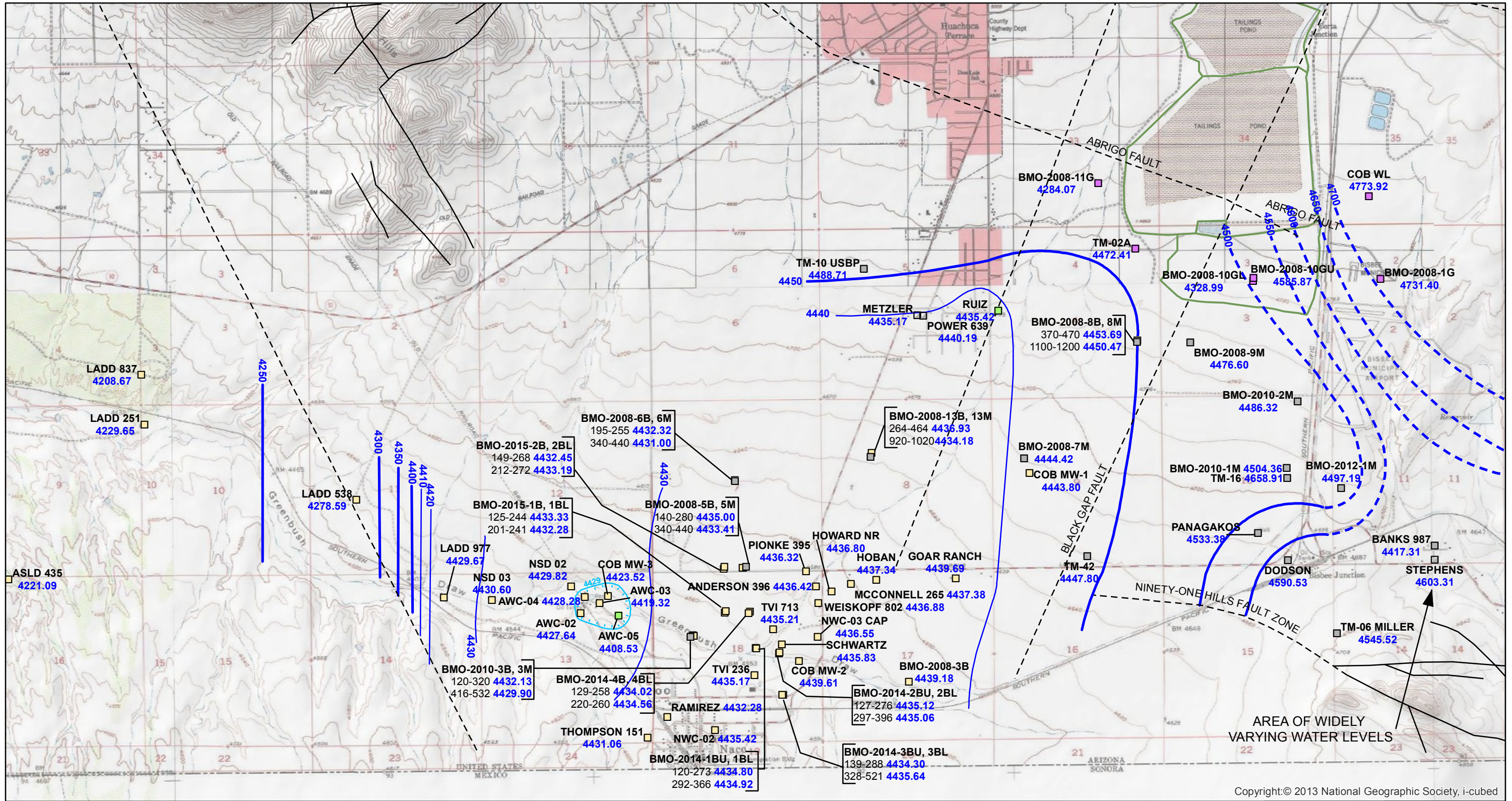
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<p><b>Legend</b></p> <p> <span style="border: 1px solid black; padding: 2px;">BMO-2014-1BU</span> Well ID  <span style="color: red;">180</span> Sulfate Concentration (mg/L)            Duplicate results separated by "/"            Sulfate Concentration (dashed where inferred)            Fault (Inferred)            Co-located Wells  <span style="border: 1px solid black; padding: 2px;">Well ID</span>            Screen (ft bls): Sulfate Levels (mg/L)         </p>		<p> <b>Screened Formation</b>  <span style="border: 1px solid black; padding: 2px;">Basin Fill</span>  <span style="border: 1px solid black; padding: 2px;">Basin Fill and Undifferentiated Bisbee Group</span>  <span style="border: 1px solid black; padding: 2px;">Undifferentiated Bisbee Group</span>  <span style="border: 1px solid black; padding: 2px;">Undifferentiated Bisbee Group - Estimated</span>  <span style="border: 1px solid black; padding: 2px;">Undifferentiated Bisbee Group and Glance Conglomerate</span>  <span style="border: 1px solid black; padding: 2px;">Glance Conglomerate</span>  <span style="border: 1px solid black; padding: 2px;">Glance Conglomerate - Estimated</span>            Undifferentiated Bisbee Group: Cintura, Mural Limestone, and Morita Formations         </p>		<p>           NSQ = Not Scheduled for Quarter            NPA = No Property Access            WIO = Well Inoperable            mg/L = milligrams per liter            ft bls = feet below land surface            Sulfate contours are based on represented and historical data.         </p>		<p> <b>Scale (Feet)</b>            0 1,000 2,000         </p> <p> <b>Notes:</b>            1. Sulfate exceeds 250 mg/L over 40-foot screen interval of BMO-2015-1BL, but not the depth average sample of the basin fill aquifer as represented by BMO-2015-1B.            Projection: UTM Zone, 12N NAD83         </p>		<p>           Date 2/9/16 File ID 055038-459    <b>CLEAR CREEK ASSOCIATES</b> </p>	
<p>FIGURE 10 SULFATE CONCENTRATIONS AT THE WEST EDGE OF THE PLUME FOR FOURTH QUARTER 2015</p>									



	File ID
	Date 1/27/2016
FIGURE 11 SULFATE CONCENTRATION OVER TIME IN PUBLIC DRINKING WATER SUPPLY WELLS	



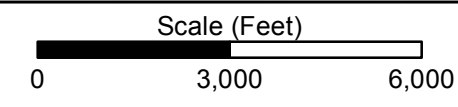


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**Legend**

- AWC-05 Well ID
- 4408.53 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (10 ft)
- Groundwater Elevation Contours (50 ft) (dashed where inferred)
- Groundwater Depression
- Faults (dashed where inferred)
- CTSA Facility
- Co-located Wells
  - Well ID
  - Screen (ft bls): 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

ft amsl = feet above mean sea level  
ft bls = feet below land surface

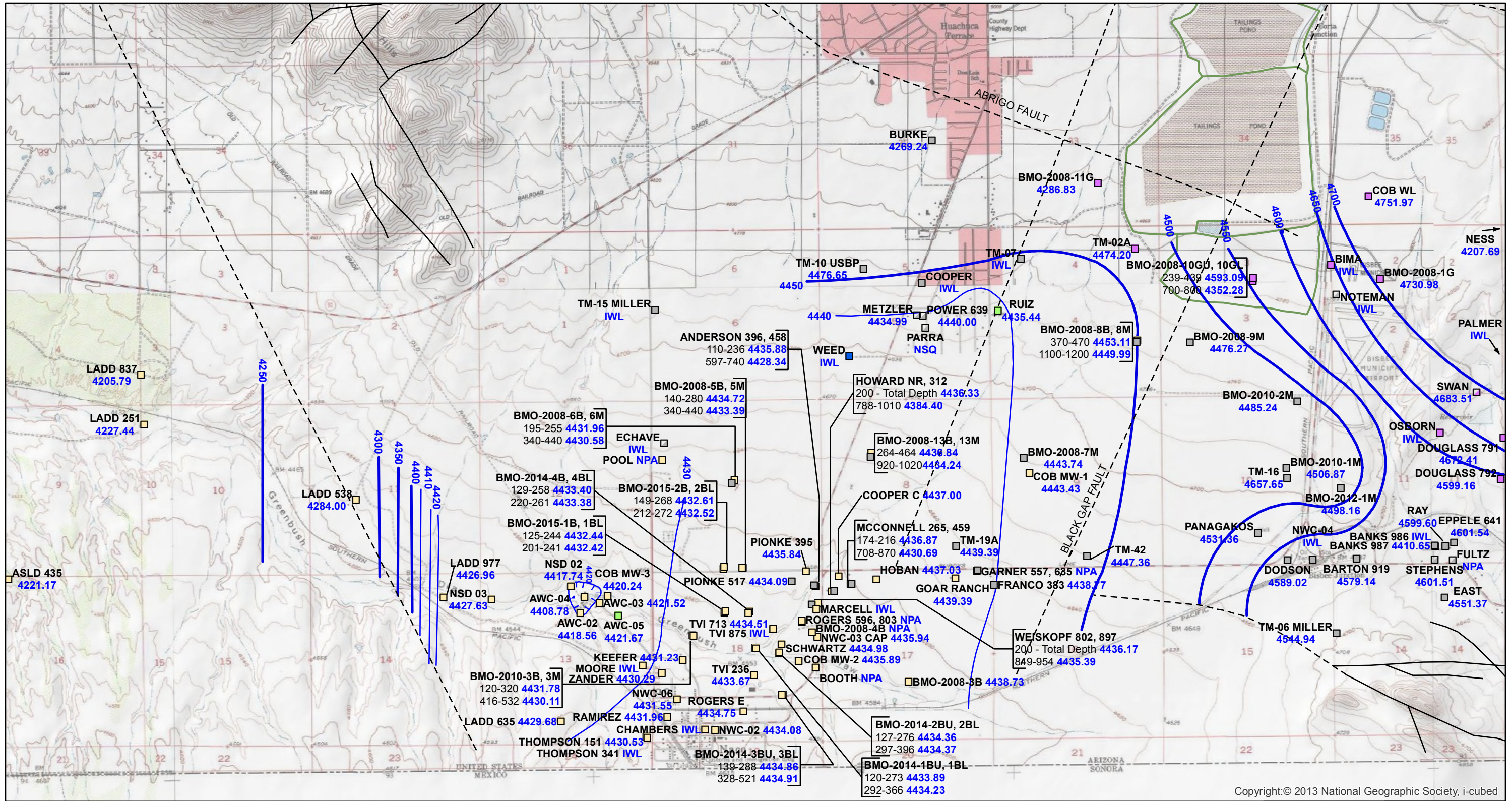


Date 2/5/16	File ID 055038-400

Projection: UTM Zone 12N NAD83

**FIGURE 12**  
SITE-WIDE  
GROUNDWATER ELEVATIONS  
FOR FIRST QUARTER 2015



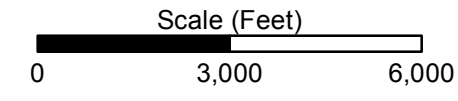


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**Legend**

- AWC-02 Well ID
- 4418.56 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contours (10 ft)
- Groundwater Elevation Contours (50 ft) (dashed where inferred)
- Faults (dashed where inferred)
- CTSA Facility
- Co-located Wells
  - Well ID
  - Screen (ft bls): 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

IWL = Inaccessible for Water Level  
 NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 ft amsl = feet above mean sea level  
 ft bls = feet below land surface

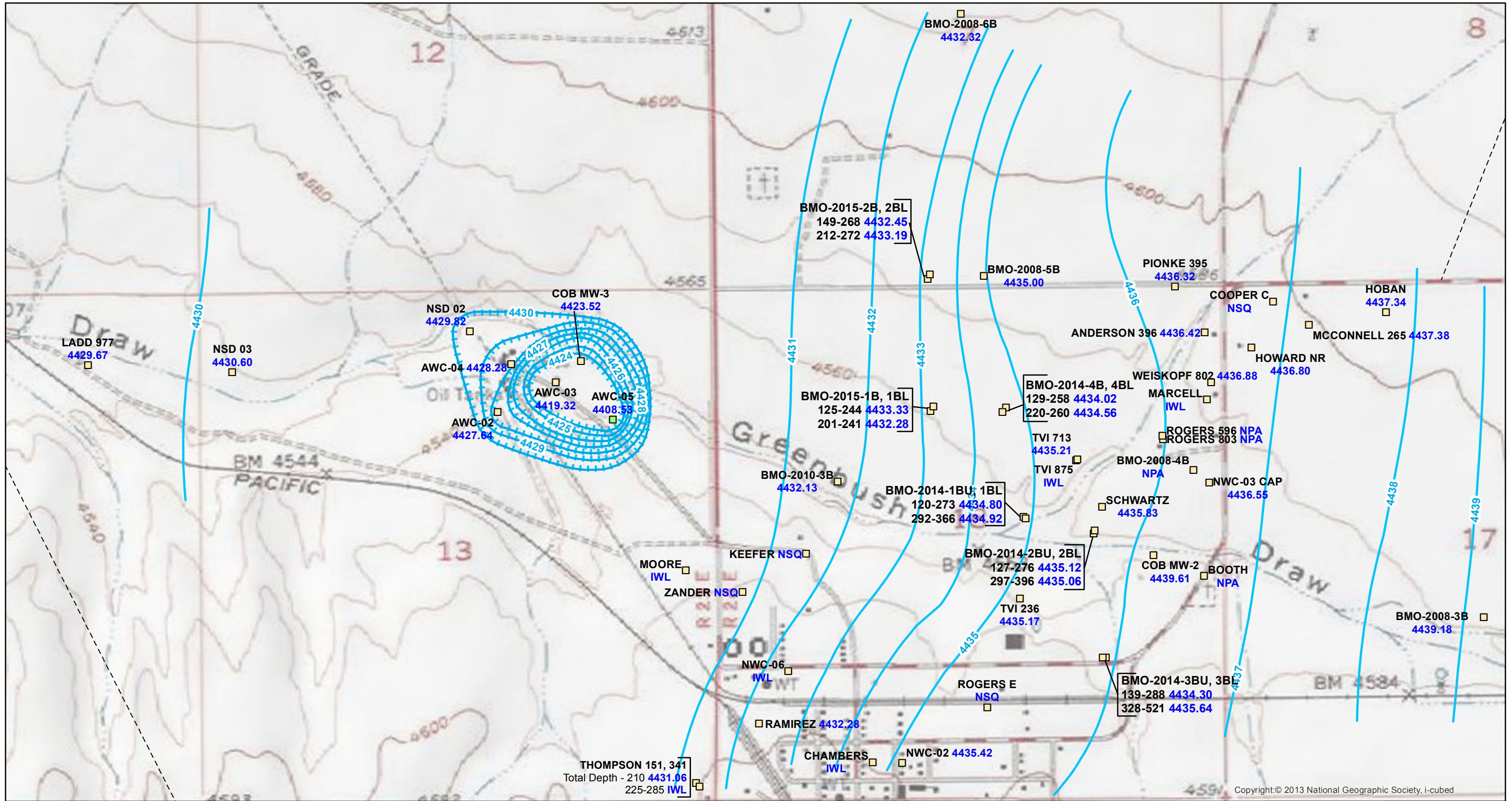


Date 1/29/16	File ID 055038-446

Projection: UTM Zone 12N NAD83

**FIGURE 13**  
 SITE-WIDE  
 GROUNDWATER ELEVATIONS  
 FOR THIRD QUARTER 2015





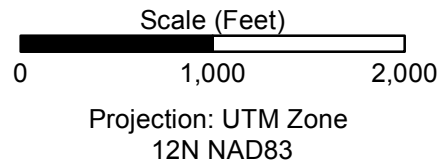
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**Legend**

- AWC-02 Well ID  
4427.64 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contour (ft amsl)
- Groundwater Elevation Depression Contour (ft amsl)
- - - Faults (dashed where inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): Water Elevation (ft amsl)

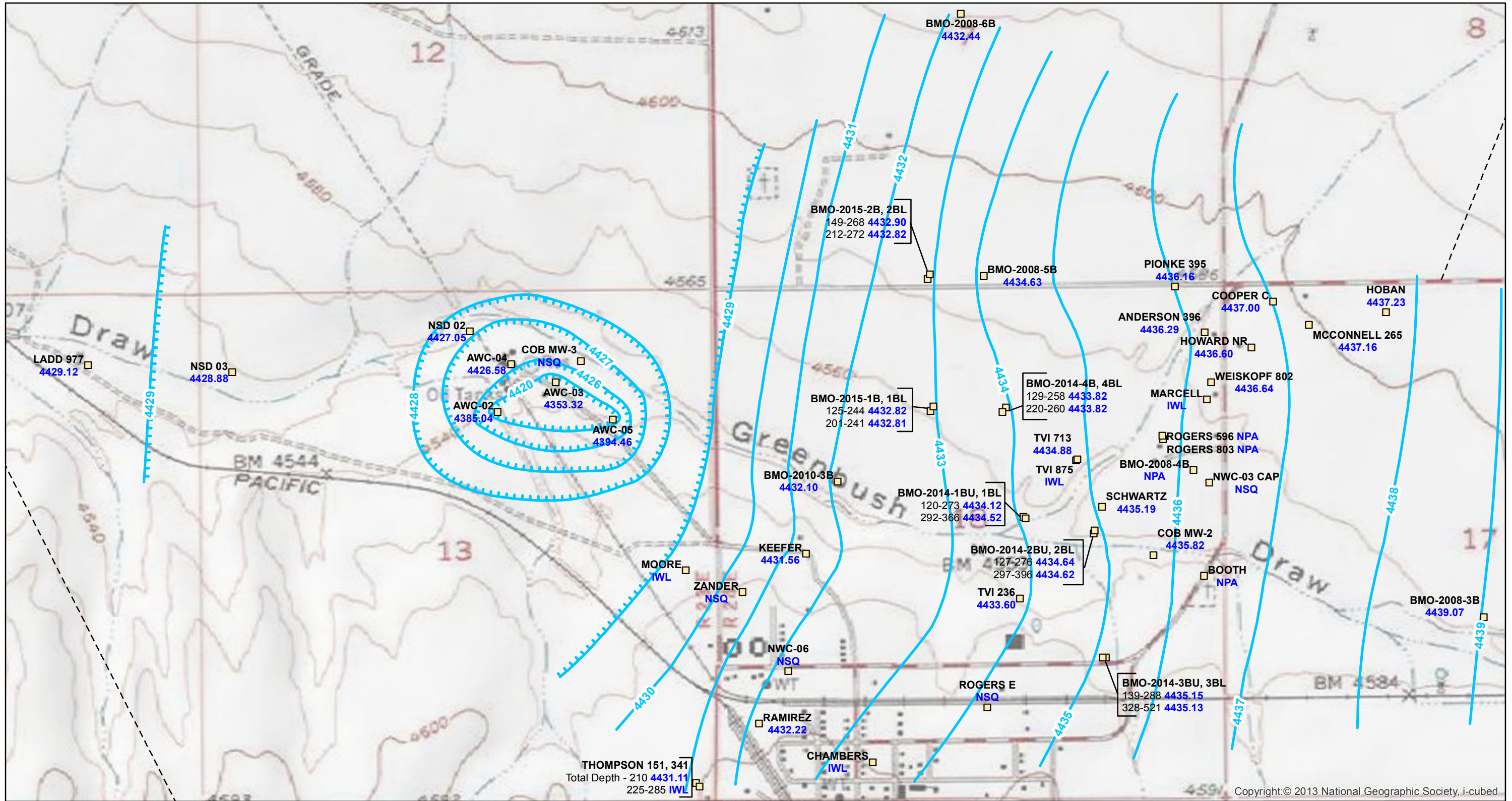
- Screened Formation
- Basin Fill
- Basin Fill and Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group
- Undifferentiated Bisbee Group - Estimated
- Undifferentiated Bisbee Group and Glance Conglomerate
- Glance Conglomerate
- Glance Conglomerate-Estimated

IWL = Inaccessible for Water Level  
 NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 ft amsl = feet above mean sea level  
 ft bls = feet below land surface



Date	2/5/16	File ID	055038-426B





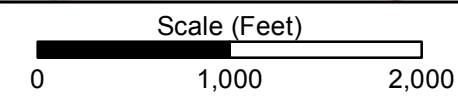
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**Legend**

- AWC-02 Well ID
- 4385.04 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contour (ft amsl)
- Groundwater Depression Contour (ft amsl)
- - - Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): 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

IWL = Inaccessible for Water Level  
 NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 ft amsl = feet above mean sea level  
 ft bls = feet below land surface

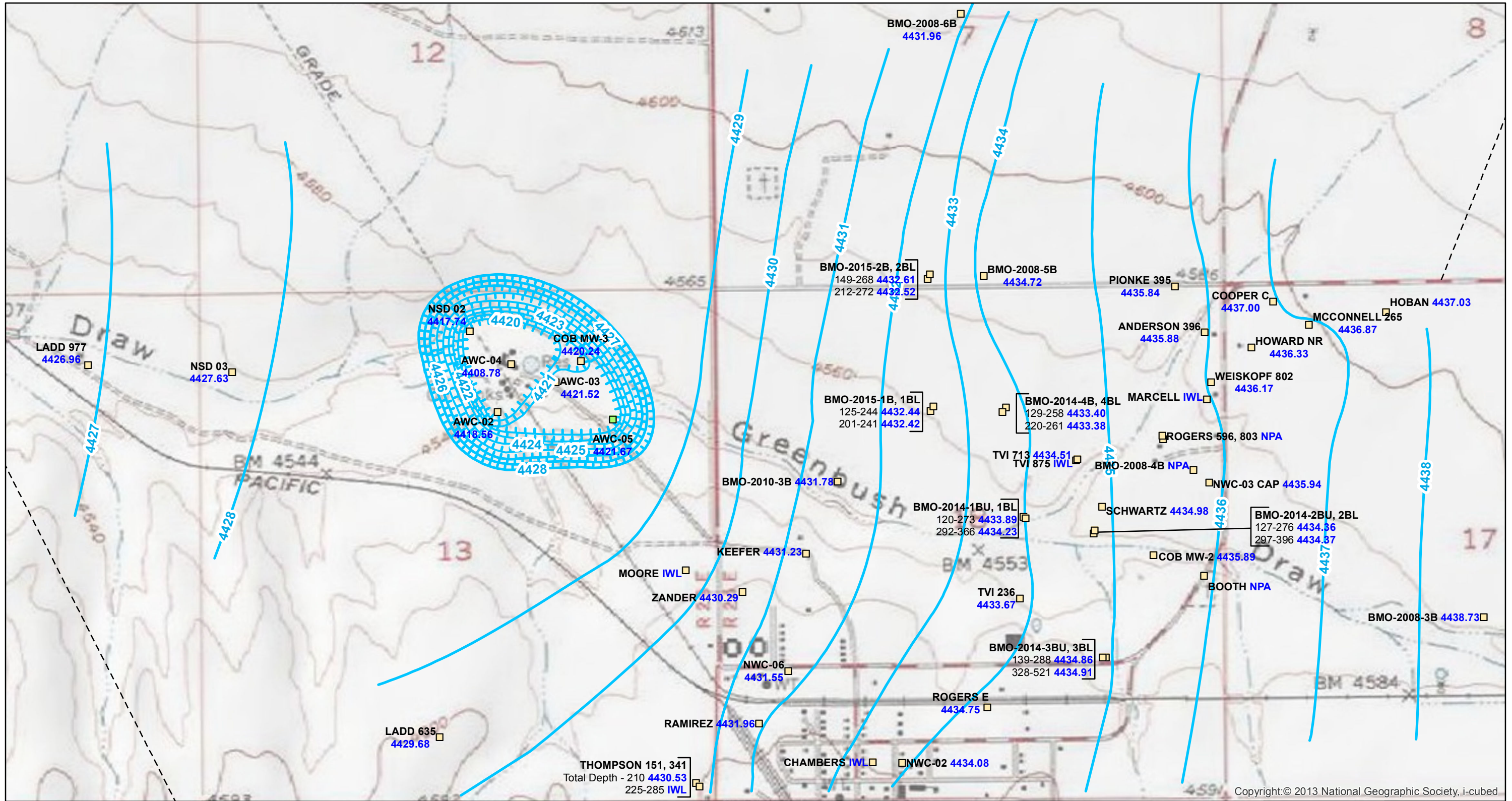


Date	2/1/16	File ID	055038-442

Projection: UTM Zone 12N NAD83

**FIGURE 15**  
 BASIN FILL  
 GROUNDWATER ELEVATIONS  
 AT WEST EDGE OF PLUME  
 FOR SECOND QUARTER 2015





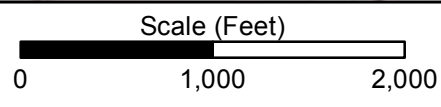
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**Legend**

- AWC-02 Well ID
- 4418.56 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contour (ft amsl)
- Groundwater Depression Contour (ft amsl) (dashed where inferred)
- - - - Faults (Inferred)
- Co-located Wells
  - Well ID
  - Screen (ft bls): 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

IWL = Inaccessible for Water Level  
 NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 ft amsl = feet above mean sea level  
 ft bls = feet below land surface

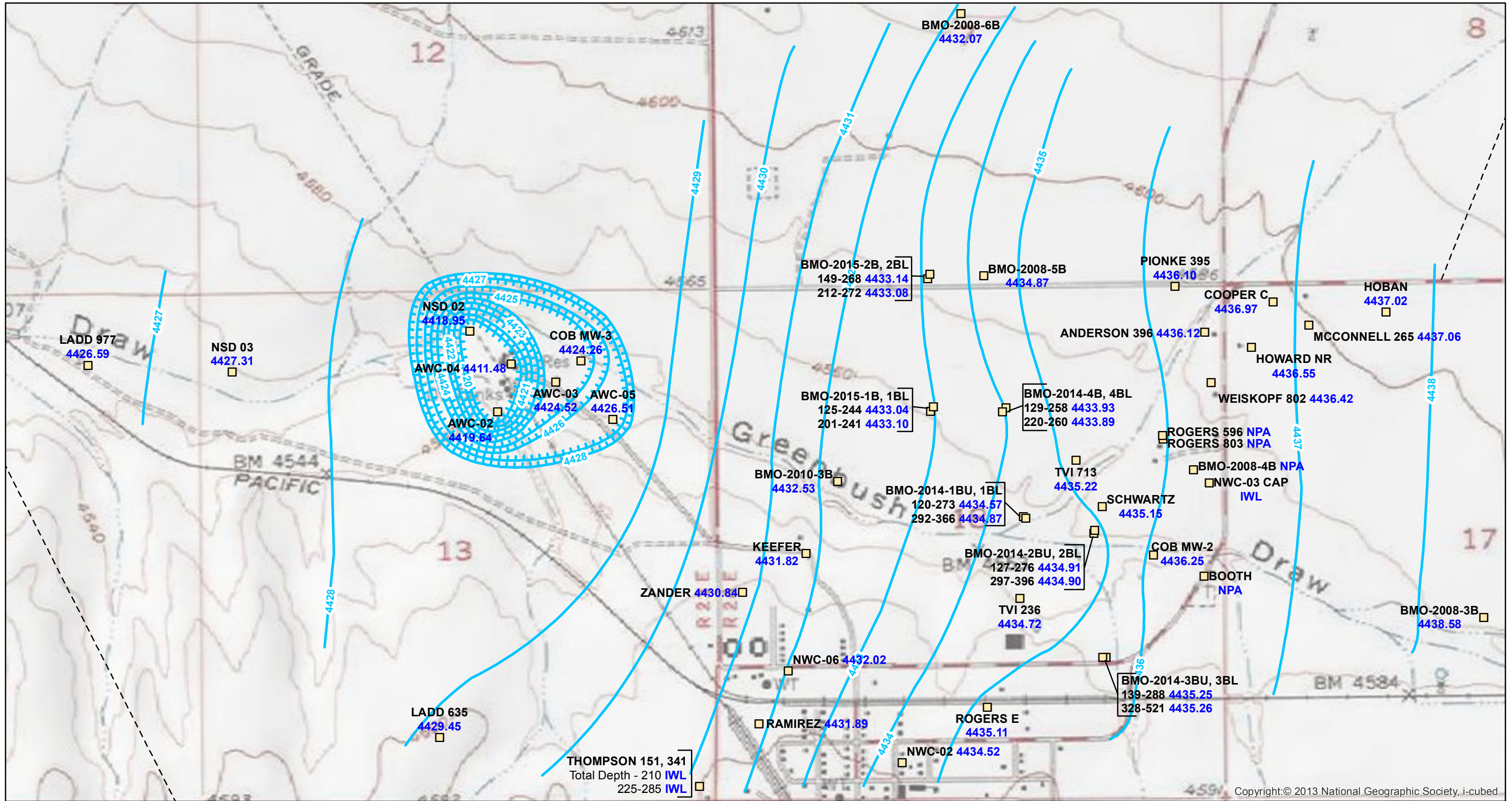


Projection: UTM Zone 12N NAD83

Date	2/1/16	File ID	055038-448

**FIGURE 16**  
**BASIN FILL**  
**GROUNDWATER ELEVATIONS**  
**AT WEST EDGE OF PLUME**  
**FOR THIRD QUARTER 2015**





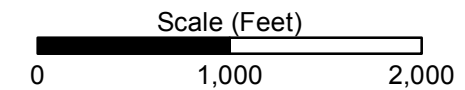
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**Legend**

- AWC-02 Well ID
- 4419.64 Groundwater Elevation (ft amsl)
- Groundwater Elevation Contour (ft amsl)
- Groundwater Depression Contour (ft amsl)
- - - Fault (Inferred)
- Co-located Wells
- Well ID
- Screen (ft bls): 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

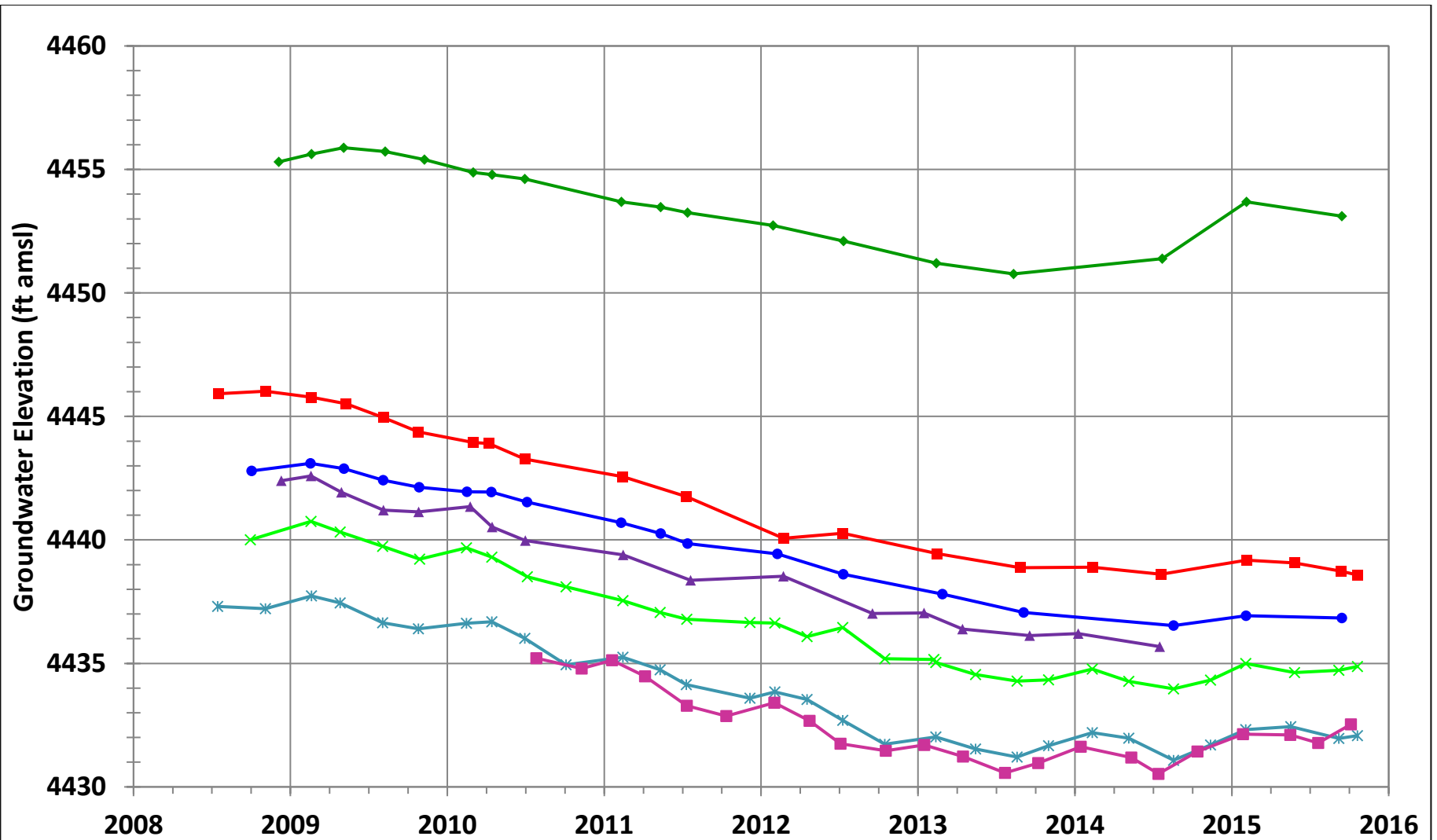
IWL = Inaccessible for Water Level  
 NPA = No Property Access  
 NSQ = Not Scheduled for Quarter  
 ft amsl = feet above mean sea level  
 ft bls = feet below land surface




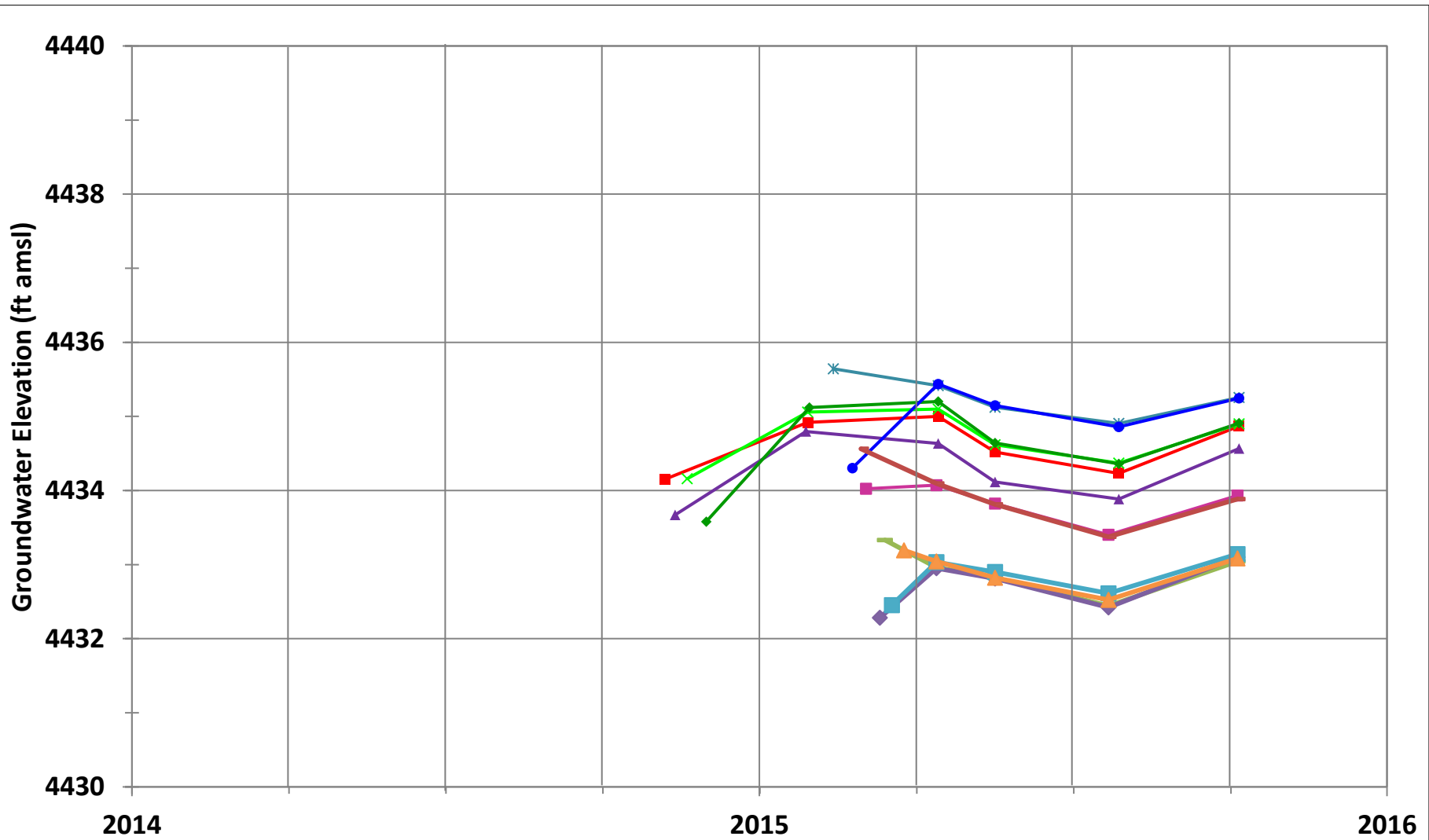
Projection: UTM Zone 12N NAD83

Date	2/5/16	File ID	055038-458


**FIGURE 17**  
 BASIN FILL  
 GROUNDWATER ELEVATIONS  
 AT THE WEST EDGE OF THE PLUME  
 FOR FOURTH QUARTER 2015



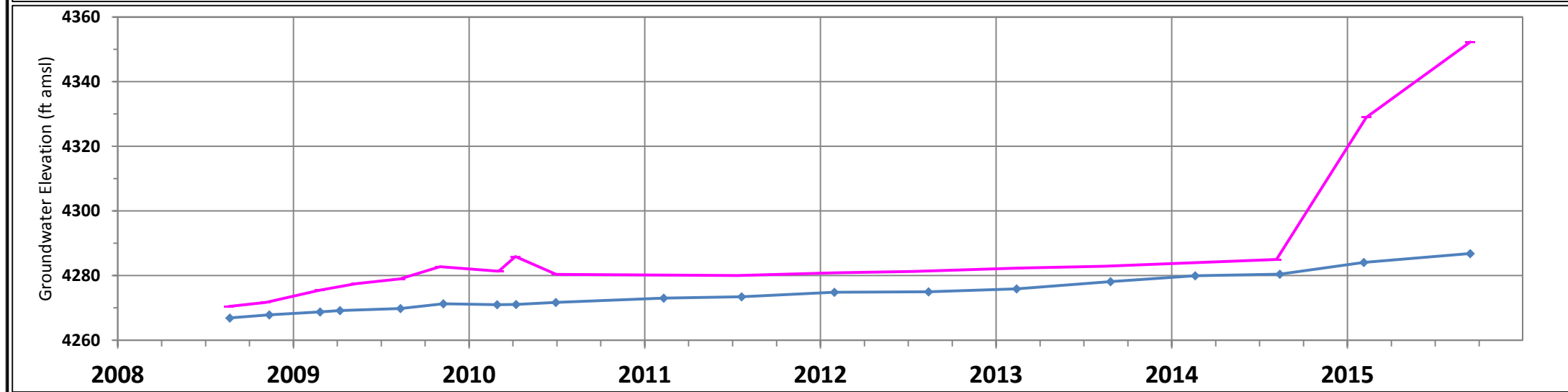
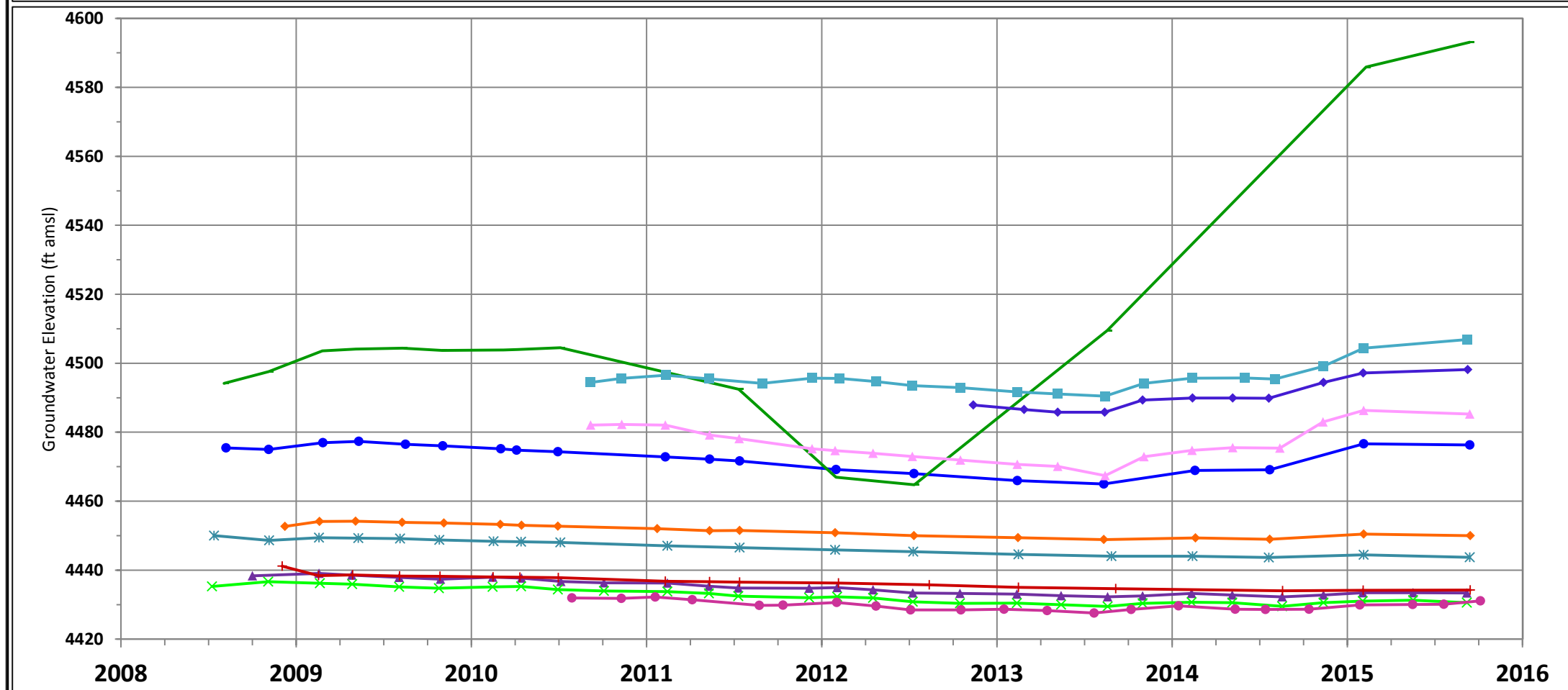
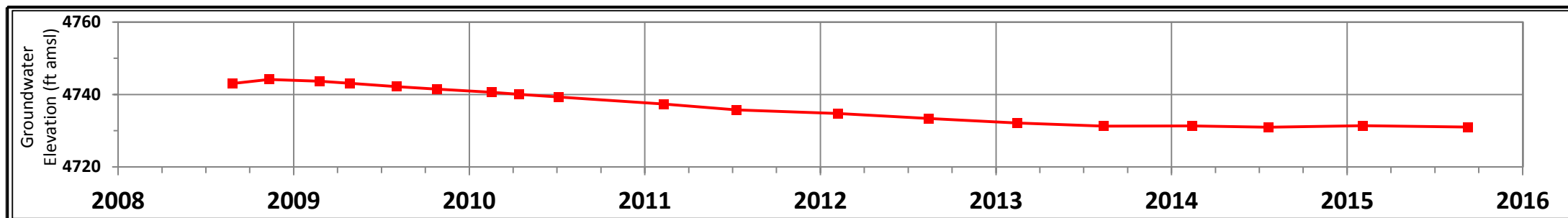
	File ID
	Date 1/28/2016
<p>FIGURE 18 HYDROGRAPHS FOR SELECTED BMO MONITOR WELLS IN BASIN FILL</p>	



- BMO-2014-1BL
- ◆ BMO-2014-2BU
- ▲ BMO-2014-1BU
- ◆ BMO-2014-3BU
- ✱ BMO-2014-3BL
- BMO-2014-4B
- BMO-2015-1B
- ◆ BMO-2015-1BL
- BMO-2015-2B
- ▲ BMO-2015-2BL

	File ID
	Date 2/6/2016

**FIGURE 19**  
 HYDROGRAPHS FOR BMO MONITOR WELLS IN BASIN FILL  
 FOR EXPANDED GROUNDWATER MONITORING PROGRAM



- BMO-2008-1G
- ▲ BMO-2008-5M
- × BMO-2008-6M
- \* BMO-2008-7M
- ◆ BMO-2008-8M
- BMO-2008-9M
- BMO-2008-10GU
- BMO-2008-10GL
- ◆ BMO-2008-11G
- BMO-2008-13M
- BMO-2010-1M
- ▲ BMO-2010-2M
- BMO-2010-3M
- ◆ BMO-2012-1M



**APPENDIX A**  
**GROUNDWATER SAMPLING FORMS**

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Anderson 396 Weather: sunny, breezy, 50s  
 ADWR No: 613396 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>285</u>	Casing Capacity	
Casing Diameter (in): <u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>152.09</u>	2	0.16
Casing Volume (gal): <u>          </u> x3 =	4	0.65
Total Volume Purged (gal): <u>          </u>	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						

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: AWC-02 Weather: cloudy, 50s  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>333</u>	Casing Capacity	
Casing Diameter (in): <u>20(16.1)</u>	Nominal Size (inches)	Gallons per Linear Foot
** Static Water Level (ft bmp): <u>120.0</u>	2	0.16
Casing Volume (gal): <u>3430 x3 = 10,290</u>	4	0.65
Total Volume Purged (gal): _____	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
<u>11:52</u>	<u>Pump On</u>						
<u>12:12</u>	<u>20m</u>	<u>110</u>	<u>2,200</u>	<u>7.52</u>	<u>21.1</u>	<u>512</u>	
<u>12:32</u>	<u>40m</u>	<u>110</u>	<u>5,500</u>	<u>7.52</u>	<u>21.2</u>	<u>508</u>	
<u>12:52</u>	<u>60m</u>	<u>110</u>	<u>6,600</u>	<u>7.55</u>	<u>21.1</u>	<u>515</u>	
<u>13:12</u>	<u>80m</u>	<u>110</u>	<u>8,800</u>	<u>7.45</u>	<u>21.4</u>	<u>507</u>	
<u>13:32</u>	<u>100m</u>	<u>110</u>	<u>11,000</u>	<u>7.44</u>	<u>21.4</u>	<u>511</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-02</u>	<u>13:37</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other: _____

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other: _____

Additional Comments: \_\_\_\_\_

\*\*

*W*

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: AWC-03 Weather: cloudy ~ 50°  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bis): <u>270</u>	Casing Capacity	
Casing Diameter (in): <u>16 (10.1)</u>	Nominal Size (inches)	Gallons per Linear Foot
** Static Water Level (ft bmp): <u>120.20</u>	2	0.16
	4	0.65
	5	1.02
	6	1.47
	8	2.61
Casing Volume (gal): <u>1513</u> x3 = <u>4539</u>	10	4.08
Total Volume Purged (gal): <u>6480</u>	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
<u>10:30</u>	<u>Pump On</u>						
<u>10:33</u>	<u>3m</u>	<u>720</u>	<u>2160</u>	<u>7.68</u>	<u>20.1</u>	<u>497</u>	
<u>10:36</u>	<u>6m</u>	<u>720</u>	<u>4320</u>	<u>7.58</u>	<u>21.2</u>	<u>495</u>	
<u>10:39</u>	<u>9m</u>	<u>720</u>	<u>6480</u>	<u>7.59</u>	<u>21.2</u>	<u>495</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-03</u>	<u>10:43</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:	

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:	

Additional Comments:

SWL DP  
\*\* AWC well run at various intervals SWL is actually current water level

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: AWC-04 Weather: cloudy ~50°  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bis): <u>337</u>	Casing Capacity	
Casing Diameter (in): <u>16 (10.1)</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>112.2</u>	2	0.16
Casing Volume (gal): <u>2271 x3 = 6813</u>	4	0.65
Total Volume Purged (gal): <u>9240</u>	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
<u>11:05</u>	<u>Pump On</u>						
<u>11:08</u>	<u>3m</u>	<u>770</u>	<u>2310</u>	<u>7.20</u>	<u>20.3</u>	<u>683</u>	
<u>11:11</u>	<u>6m</u>	<u>770</u>	<u>4620</u>	<u>7.19</u>	<u>21.1</u>	<u>681</u>	
<u>11:14</u>	<u>9m</u>	<u>770</u>	<u>6930</u>	<u>7.18</u>	<u>20.9</u>	<u>686</u>	
<u>11:17</u>	<u>12m</u>	<u>770</u>	<u>9240</u>	<u>7.20</u>	<u>21.0</u>	<u>687</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-04</u>	<u>11:19</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: AWC-05 Weather: Mostly cloudy, ~48°  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>1183</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>16 (10.08)</u>	2	0.16
** Static Water Level (ft bmp): * <u>133.98</u>	4	0.65
	5	1.02
	6	1.47
	8	2.61
	10	4.08
Casing Volume (gal): <u>8710.573 x 3 = 31,719</u>		
Total Volume Purged (gal): <u>32,000</u>	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
<u>09:20</u>	<u>Pump On</u>						
<u>09:30</u>	<u>10m</u>	<u>800</u>	<u>8,000</u>	<u>7.61</u>	<u>19.2</u>	<u>466</u>	
<u>09:40</u>	<u>20m</u>	<u>800</u>	<u>16,000</u>	<u>7.67</u>	<u>19.9</u>	<u>448</u>	
<u>09:50</u>	<u>30m</u>	<u>800</u>	<u>24,000</u>	<u>7.61</u>	<u>19.2</u>	<u>454</u>	
<u>10:00</u>	<u>40m</u>	<u>800</u>	<u>32,000</u>	<u>7.64</u>	<u>19.6</u>	<u>443</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>AWC-05</u>	<u>10:04</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:  
\*10/15/14 SWL 316.16 - Paco indicated AWC-05 was the lead well so had greater draw down. Now AWC-05 is not the lead.  
\*\* AWC wells run at various intervals SWL is actually current water level



# Groundwater Sampling Form

Project No: ~~055038~~ 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/26/15  
 Well ID: Banks 987 Weather: Partly cloudy 50s  
 ADWR No: 647987 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>339</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>230.87</u>	2	0.16
Casing Volume (gal): <u>                    </u> x3 =	4	0.65
Total Volume Purged (gal): <u>                    </u>	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 0.3 su pH, 2 degrees C, and 100 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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

**Additional Comments:**

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-4-15  
 Well ID: Bm9-2008-16 Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher J Skarman

WELL DATA		
Well Depth (ft bls): <u>310</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>73.70</u>	2	0.16
Casing Volume (gal): <u>241 x3 = 723</u>	4	0.65
Total Volume Purged (gal): <u>247</u>	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
<u>0920</u>	<u>Pump On</u>						
<u>0950</u>	<u>30</u>	<u>8.3</u>	<u>249</u>	<u>7.32</u>	<u>22.5</u>	<u>946</u>	
<u>1010</u>	<u>50</u>	<u>8.3</u>	<u>415</u>	<u>7.39</u>	<u>22.3</u>	<u>958</u>	
<u>1030</u>	<u>70</u>	<u>8.3</u>	<u>581</u>	<u>7.31</u>	<u>22.2</u>	<u>943</u>	
<u>1050</u>	<u>90</u>	<u>8.3</u>	<u>747</u>	<u>7.35</u>	<u>22.1</u>	<u>942</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:  
736.3  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-5-15  
 Well ID: BMO-2008-3B Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher J. Slawson

### WELL DATA

Well Depth (ft bls): <u>760</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>144.79</u> Casing Volume (gal): <u>117.5 x 3 = 352.5</u> Total Volume Purged (gal): <u>540</u>	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
<u>1450</u>	<u>Pump On</u>						
<u>1500</u>	<u>10</u>	<u>27</u>	<u>135</u>	<u>7.07</u>	<u>21.4</u>	<u>648</u>	
<u>1505</u>	<u>20</u>	<u>27</u>	<u>405</u>	<u>7.10</u>	<u>21.1</u>	<u>650</u>	
<u>1510</u>	<u>20</u>	<u>27</u>	<u>540</u>	<u>7.11</u>	<u>21.2</u>	<u>652</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-3B</u>	<u>1510</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ja</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 1152

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-3-15  
 Well ID: BMO-2008-5B Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher J. Skram

WELL DATA		
Well Depth (ft bls): <u>285</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>150.10</u>	2	0.16
Casing Volume (gal): <u>137.7 x3 = 413</u>	4	0.65
Total Volume Purged (gal): <u>675</u>	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
<u>1335</u>	<u>Pump On</u>						
<u>1340</u>	<u>5</u>	<u>27</u>	<u>138</u>	<u>6.98</u>	<u>22.0</u>	<u>750</u>	
<u>1350</u>	<u>15</u>	<u>27</u>	<u>405</u>	<u>7.01</u>	<u>21.8</u>	<u>753</u>	
<u>1400</u>	<u>25</u>	<u>27</u>	<u>675</u>	<u>7.05</u>	<u>21.8</u>	<u>755</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-5B</u>	<u>1400</u>	<u>PW</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Feu</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: \_\_\_\_\_  
135  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-3-15  
 Well ID: BMO-2008-5M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Slavner

### WELL DATA

Well Depth (ft bis): <u>450</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>151.61</u> Casing Volume (gal): <u>304.2 x3 = 913</u> Total Volume Purged (gal): <u>990</u>	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
<u>1230</u>	<u>Pump On</u>						
<u>1235</u>	<u>5</u>	<u>18</u>	<u>90</u>	<u>7.22</u>	<u>22.7</u>	<u>610</u>	
<u>1255</u>	<u>25</u>	<u>18</u>	<u>450</u>	<u>7.25</u>	<u>22.6</u>	<u>612</u>	
<u>1315</u>	<u>45</u>	<u>18</u>	<u>810</u>	<u>7.24</u>	<u>22.4</u>	<u>610</u>	
<u>1325</u>	<u>55</u>	<u>18</u>	<u>990</u>	<u>7.26</u>	<u>22.5</u>	<u>612</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-5M</u>	<u>1325</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Per</u>	<u>X</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

2983

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-3-15  
 Well ID: BMD-2008-6B Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Skorman

WELL DATA		
Well Depth (ft bls): <u>265</u>	Casing Capacity	
Casing Diameter (in): <u>5'</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>195.12</u>	2	0.16
Casing Volume (gal): <u>71 x3 = 213</u>	4	0.65
Total Volume Purged (gal): <u>225</u>	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
<u>0855</u>	<b>Pump On</b>						
<u>0900</u>	<u>5</u>	<u>5.1</u>	<u>25</u>	<u>7.11</u>	<u>20.0</u>	<u>280</u>	
<u>0910</u>	<u>15</u>	<u>5.1</u>	<u>75</u>	<u>7.20</u>	<u>20.4</u>	<u>275</u>	
<u>0925</u>	<u>30</u>	<u>5.1</u>	<u>153</u>	<u>7.22</u>	<u>20.5</u>	<u>271</u>	
<u>0940</u>	<u>45</u>	<u>5.1</u>	<u>225</u>	<u>7.24</u>	<u>20.6</u>	<u>272</u>	
							<b>Pump Off</b>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMD-2008-6B</u>	<u>0940</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: B/S @ 0942  
6.18



9750

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-23-15  
 Well ID: BMO-2008-6M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Sturman

### WELL DATA

Well Depth (ft bls): <u>450</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>195.90</u> Casing Volume (gal): <u>259.1 x 3 = 777.3</u> Total Volume Purged (gal): <u>840</u>	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
<u>0750</u>	<u>Pump On</u>						
<u>0800</u>	<u>10</u>	<u>21</u>	<u>210</u>	<u>7.18</u>	<u>21.8</u>	<u>739</u>	
<u>0810</u>	<u>20</u>	<u>21</u>	<u>420</u>	<u>7.21</u>	<u>22.0</u>	<u>741</u>	
<u>0820</u>	<u>30</u>	<u>21</u>	<u>630</u>	<u>7.22</u>	<u>21.9</u>	<u>743</u>	
<u>0830</u>	<u>40</u>	<u>21</u>	<u>840</u>	<u>7.20</u>	<u>21.9</u>	<u>741</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-6M</u>	<u>0830</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fac</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

254.1

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-5-15  
 Well ID: BMO-2008-116 Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Stevens

WELL DATA		
Well Depth (ft bls): <u>760</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>560.60</u>	2	0.16
Casing Volume (gal): <u>203.3 x3 = 610</u>	4	0.65
Total Volume Purged (gal): <u>640</u>	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
<u>0840</u>	Pump On						
<u>0910</u>	<u>30</u>	<u>8</u>	<u>240</u>	<u>7.80</u>	<u>24.8</u>	<u>333</u>	
<u>0940</u>	<u>60</u>	<u>8</u>	<u>480</u>	<u>7.84</u>	<u>24.5</u>	<u>331</u>	
<u>0955</u>	<u>75</u>	<u>8</u>	<u>600</u>	<u>7.86</u>	<u>24.6</u>	<u>332</u>	
<u>1009</u>	<u>80</u>	<u>8</u>	<u>640</u>	<u>7.87</u>	<u>24.8</u>	<u>334</u>	
							Pump Off

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-116</u>	<u>1000</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fe</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

199.4

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# Groundwater Sampling Form

Project No: ~~055038~~ 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/28/15  
 Well ID: BMO-2010-3B Weather: sunny 50s  
 ADWR No: 219970 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>330</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>118.46</u>	2	0.16
Casing Volume (gal): <u>216 x3 = 648</u>	4	0.65
Total Volume Purged (gal): <u>665</u>	5	<u>1.02</u>
	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
<u>08:50</u>	<u>Pump On</u>						
<u>09:05</u>	<u>15m</u>	<u>7</u>	<u>105</u>	<u>7.56</u>	<u>20.3</u>	<u>416</u>	<u>very slight yellowish color, NO odor</u>
<u>09:20</u>	<u>30m</u>	<u>7</u>	<u>210</u>	<u>7.64</u>	<u>21.4</u>	<u>414</u>	<u>very, very slight yellowish color - less, NO odor</u>
<u>09:35</u>	<u>45m</u>	<u>7</u>	<u>315</u>	<u>7.60</u>	<u>22.5</u>	<u>419</u>	<u>sample is clear</u>
<u>09:50</u>	<u>60m</u>	<u>7</u>	<u>420</u>	<u>7.60</u>	<u>22.6</u>	<u>422</u>	<u>clear</u>
<u>10:05</u>	<u>75m</u>	<u>7</u>	<u>525</u>	<u>7.57</u>	<u>22.6</u>	<u>417</u>	<u>clear</u>
<u>10:20</u>	<u>90m</u>	<u>7</u>	<u>630</u>	<u>7.57</u>	<u>22.3</u>	<u>425</u>	<u>clear</u>
<u>10:25</u>	<u>95m</u>	<u>7</u>	<u>665</u>	<u>7.59</u>	<u>22.2</u>	<u>420</u>	<u>clear</u>
							<u>Pump Off</u>

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

SCP: well head spigot		SAMPLE INFORMATION						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
<u>BMO-2010-3B</u>	<u>10:31</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>	

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 1<sup>st</sup> parameter sample has very slight yellowish tint. No odor  
2<sup>nd</sup> parameter sample has less, but very, very slight yellowish tint. No odor  
3<sup>rd</sup> parameter sample is clear no odor

# Groundwater Sampling Form

Project No: 055038 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/28/15  
 Well ID: BMO-2010-3M Weather: sunny, 50s  
 ADWR No: 219969 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>532</u>	Casing Capacity
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>120.63 (@08:10)</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>411 x3 = 1233</u>	2
Total Volume Purged (gal):	<u>1260</u>	4
		5
		6
		8
		10
		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
<u>10:55</u>	<u>Pump On</u>						
<u>11:15</u>	<u>20m</u>	<u>7</u>	<u>140</u>	<u>7.70</u>	<u>23.7</u>	<u>363</u>	<u>slight yellowish color very faint "dirty" odor</u>
<u>11:35</u>	<u>40m</u>	<u>7</u>	<u>280</u>	<u>7.63</u>	<u>24.9</u>	<u>394</u>	<u>yellowish color no odor</u>
<u>11:55</u>	<u>60m</u>	<u>7</u>	<u>420</u>	<u>7.69</u>	<u>24.6</u>	<u>389</u>	<u>clear</u>
<u>12:15</u>	<u>80m</u>	<u>7</u>	<u>560</u>	<u>7.66</u>	<u>23.8</u>	<u>386</u>	<u>clear</u>
<u>12:35</u>	<u>100m</u>	<u>7</u>	<u>700</u>	<u>7.71</u>	<u>24.0</u>	<u>392</u>	<u>clear</u>
<u>12:55</u>	<u>120m</u>	<u>7</u>	<u>840</u>	<u>7.65</u>	<u>24.0</u>	<u>386</u>	<u>clear</u>
<u>13:15</u>	<u>140m</u>	<u>7</u>	<u>980</u>	<u>7.66</u>	<u>24.4</u>	<u>387</u>	<u>clear</u>
<u>13:35</u>	<u>160m</u>	<u>7</u>	<u>1120</u>	<u>7.69</u>	<u>24.8</u>	<u>388</u>	<u>clear</u>
<u>13:55</u>	<u>180m</u>	<u>7</u>	<u>1260</u>	<u>7.70</u>	<u>24.1</u>	<u>391</u>	<u>Pump Off</u>

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

SCP: well head spigot SAMPLE INFORMATION

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2010-3M</u>	<u>13:59</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: SWL 120.63 @ 8:10 before pumping 3B  
@ 10:45 Water level 120.64  
1st and 2nd parameter samples yellowish in color 3rd sample clear.



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-4-15  
 Well ID: BMO-2012-1M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Shrumm

### WELL DATA

Well Depth (ft bbs): <u>405</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>222.57</u> Casing Volume (gal): <u>186 x3 = 558</u> Total Volume Purged (gal): _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Casing Capacity</th> </tr> <tr> <th style="text-align: center;">Nominal Size (inches)</th> <th style="text-align: center;">Gallons per Linear Foot</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2</td><td style="text-align: center;">0.16</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">0.65</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">1.02</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">1.47</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">2.61</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">4.08</td></tr> </tbody> </table> Casing Volume = gallons/foot * water column (feet)	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 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																

### FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
<u>0730</u>	<b>Pump On</b>						
<u>0800</u>	<u>30</u>	<u>6</u>	<u>180</u>	<u>7.38</u>	<u>22.8</u>	<u>841</u>	
<u>0830</u>	<u>60</u>	<u>6</u>	<u>360</u>	<u>7.42</u>	<u>22.7</u>	<u>844</u>	
<u>0900</u>	<u>90</u>	<u>6</u>	<u>540</u>	<u>7.41</u>	<u>22.7</u>	<u>847</u>	
<u>0905</u>	<u>95</u>	<u>6</u>	<u>570</u>	<u>7.40</u>	<u>22.5</u>	<u>843</u>	
							<b>Pump Off</b>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2012-1M</u>	<u>0905</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Jee</u>	<u>X</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: \_\_\_\_\_

Additional Comments:

182.9

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# Groundwater Sampling Form

Project No: 055038-287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: BMO-2014-1BL Weather: cloudy, sprinkle to light rain  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bis): <u>DP-366 396</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5</u>	2	0.16
Static Water Level (ft bmp): <u>123.53</u>	4	0.65
Casing Volume (gal): <u>278 x3 = 834</u>	5	<u>1.02</u>
Total Volume Purged (gal): <u>840</u>	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
<u>14:20</u>	<u>Pump On</u>						
<u>14:34</u>	<u>14m</u>	<u>15</u>	<u>210</u>	<u>7.45</u>	<u>22.3</u>	<u>684</u>	
<u>14:48</u>	<u>28m</u>	<u>15</u>	<u>420</u>	<u>7.48</u>	<u>22.2</u>	<u>682</u>	
<u>15:02</u>	<u>42m</u>	<u>15</u>	<u>630</u>	<u>7.46</u>	<u>22.1</u>	<u>688</u>	
<u>15:16</u>	<u>56m</u>	<u>15</u>	<u>840</u>	<u>7.46</u>	<u>22.2</u>	<u>686</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>SCP: wellhead spigot</u>							
<u>BMO-2014-1BL</u>	<u>15:19</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>X</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: ~~055038~~ 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/28/15  
 Well ID: BMO-2014-1BU Weather: sunny low 70s  
 ADWR No: 55-917394 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>272.8</u>	Casing Capacity	
Casing Diameter (in): <u>5</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>123.74</u>	2	0.16
Casing Volume (gal): <u>152</u> x3 = <u>456</u>	4	0.65
Total Volume Purged (gal): <u>450</u>	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
<u>16:30</u>	<u>Pump On</u>						
<u>16:40</u>	<u>10m</u>	<u>15</u>	<u>150</u>	<u>7.43</u>	<u>22.8</u>	<u>727</u>	
<u>16:50</u>	<u>20m</u>	<u>15</u>	<u>300</u>	<u>7.44</u>	<u>21.9</u>	<u>703</u>	
<u>17:00</u>	<u>30m</u>	<u>15</u>	<u>450</u>	<u>7.45</u>	<u>21.6</u>	<u>694</u>	
		<u>+0.0</u>					
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-1BU</u>	<u>17:04</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 055038-287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: BMO-2014-2BL Weather: cloudy, sprinkle 60s  
 ADWR No: 55-917452 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>396</u>	<b>Casing Capacity</b>
Casing Diameter (in):	<u>5</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>126.74</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>275 x3 = 825</u>	2 0.16
Total Volume Purged (gal):	<u>840</u>	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 Off

DP  
 16:18  
 16:32  
 16:46  
 DP

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-2BL</u>	<u>16:52</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: 055038 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/30/15  
 Well ID: BMO-2014-2BU Weather: Raining, 450s  
 ADWR No: 55-917453 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity
		Nominal Size (inches)      Gallons per Linear Foot
<u>276</u>	<u>5</u>	2      0.16
<u>126.73</u>		4      0.65
<u>152</u> x3 = <u>456</u>		5 <u>1.02</u>
<u>450+</u>		6      1.47
		8      2.61
		10      4.08
Total Volume Purged (gal):		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
<u>08:30</u>	<u>Pump On</u>						
<u>08:40</u>	<u>10m</u>	<u>15</u>	<u>150</u>	<u>7.61</u>	<u>20.3</u>	<u>525</u>	
<u>08:50</u>	<u>20m</u>	<u>15</u>	<u>300</u>	<u>7.63</u>	<u>20.3</u>	<u>527</u>	
<u>09:00</u>	<u>30m</u>	<u>15</u>	<u>450</u>	<u>7.65</u>	<u>19.9</u>	<u>524</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-2BU</u>	<u>09:06</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

**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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/4/15  
 Well ID: COB MW-1 Weather: sunny, 50s  
 ADWR No: 903-823-992 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>420</u>	Casing Capacity
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>239.46</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>-</u> x3 =	2 0.16
Total Volume Purged (gal):	<u>-</u>	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
							WLO
							Pump Off

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field paremeters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/4/15  
 Well ID: COB MW-2 Weather: Sunny, breezy, 50s  
 ADWR No: 903984 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>162</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
Static Water Level (ft bmp): <u>126.60 bls</u>	4	<u>0.65</u>
	5	1.02
Casing Volume (gal): <u>2335<sup>AP</sup> x3 = 69</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>90</u>	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
<u>10:15</u>	<u>Pump On</u>						
<u>10:20</u>	<u>5m</u>	<u>6</u>	<u>30</u>	<u>7.43</u>	<u>19.4</u>	<u>620</u>	
<u>10:25</u>	<u>10m</u>	<u>6</u>	<u>60</u>	<u>7.39</u>	<u>20.4</u>	<u>614</u>	
<u>10:30</u>	<u>15m</u>	<u>6</u>	<u>90</u>	<u>7.38</u>	<u>20.3</u>	<u>619</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point: <u>PVC pipe off of wellhead</u>							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB MW-2</u>	<u>10:38</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y(hand)</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: 129.60 Top of sounder tube  
- 3.00 Top of sounder tube to Level Surface  
126.60 bls

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/4/15  
 Well ID: COB MW-3 Weather: sunny, 50s  
 ADWR No: 903823 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>300</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>115.11 bls</u>	2	0.16
Casing Volume (gal): <u>—</u> x3 =	4	0.65
Total Volume Purged (gal): <u>—</u>	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						
							<div style="font-size: 2em; font-weight: bold; transform: rotate(-45deg);">WLD</div>
							Pump Off

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<del>_____</del>							

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: 117.94 → @09:05 → top of sounder tube  
- 2.83 → Top of sounder tube to Level Surface  
115.11



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/4/15  
 Well ID: COB WL Weather: sunny, 60s  
 ADWR No: 593116 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>150</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
Static Water Level (ft bmp): <u>58.14 bls</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>60 x3 = 180</u>	6	1.47
	8	2.61
Total Volume Purged (gal):	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
<u>12:06</u>	<u>Pump On</u>						
<u>12:16</u>	<u>10m</u>	<u>6</u>	<u>60</u>	<u>6.85</u>	<u>22.1</u>	<u>1504</u>	
<u>12:26</u>	<u>20m</u>	<u>1.5</u>	<u>75</u>	<u>7.30</u>	<u>22.7</u>	<u>1465</u>	
<u>12:36</u>	<u>30m</u>	<u>1.5</u>	<u>90</u>	<u>7.22</u>	<u>23.1</u>	<u>1476</u>	
<u>12:46</u>	<u>40m</u>	<u>1.5</u>	<u>105</u>	<u>7.08</u>	<u>23.3</u>	<u>1478</u>	
<u>12:56</u>	<u>50m</u>	<u>1.5</u>	<u>120</u>	<u>7.00</u>	<u>22.8</u>	<u>1477</u>	
<u>13:06</u>	<u>60m</u>	<u>1.5</u>	<u>135</u>	<u>7.01</u>	<u>22.6</u>	<u>1462</u>	
<u>13:16</u>	<u>70m</u>	<u>1.5</u>	<u>150</u>	<u>6.93</u>	<u>22.9</u>	<u>1477</u>	
<u>13:26</u>	<u>80m</u>	<u>1.5</u>	<u>165</u>	<u>6.88</u>	<u>23.2</u>	<u>1470</u>	
<u>13:36</u>	<u>90m</u>	<u>1.5</u>	<u>180</u>	<u>6.90</u>	<u>23.3</u>	<u>1488</u>	<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point: PVC pipe off of wellhead

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>COB WL</u>	<u>13:41</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y(hand)</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

77.14 Top of sounder tube  
- 19.00 Top of sounder to level surface  
58.14

28.5  
- 9.5  
19.0

# Groundwater Sampling Form

Project No: 055038 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/27/15  
 Well ID: Cooper Weather: Partly cloud, 50<sup>s</sup>  
 ADWR No: 623564 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>325</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>—</u>	2	0.16
Casing Volume (gal): <u>—</u> x3 = <u>—</u>	4	0.65
Total Volume Purged (gal):	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
<u>08:25</u>	<u>Pump On</u>						
<u>08:30</u>	<u>5m</u>	<u>9</u>	<u>45</u>	<u>7.52</u>	<u>19.9</u>	<u>418</u>	
<u>08:35</u>	<u>10m</u>	<u>9</u>	<u>90</u>	<u>7.62</u>	<u>20.6</u>	<u>414</u>	
<u>08:40</u>	<u>15m</u>	<u>9</u>	<u>135</u>	<u>7.67</u>	<u>20.5</u>	<u>411</u>	
							<u>Pump Off</u>

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

SCP: spigot north side of house SAMPLE INFORMATION across driveway from windmill

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Cooper</u>	<u>08:51</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>FB2Ø15Ø127</u>	<u>08:55</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>N</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Groundwater Sampling Form

Project No: 055038-287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/26/15  
 Well ID: Dodson Weather: cloudy, light rain, ~ 52°  
 ADWR No: 644927 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	200	Casing Capacity
Casing Diameter (in):	6	Nominal Size (inches)
Static Water Level (ft bmp):	95.81	Gallons per Linear Foot
Casing Volume (gal):	153 x3 = 459	2
Total Volume Purged (gal):		4
		5
		6
		8
		10
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
13:05	Pump On						
13:15	10m	13	130	7.22	20.5	1783	Temp F 68.9
13:25	20m	13	260	7.30	20.5	1745	68.9
13:35	30m	13	390	7.41	20.2	1671	68.3
13:45	40m	13	520	7.46	20.2	1650	68.3
							Pump Off

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

SCP: Wellhead spigot

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Dodson	13:51	Poly	250ml	1	300.0	NA	Y
Dup 20150126	12:00	Poly	250ml	1	300.0	NA	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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/3/15  
 Well ID: \* while at Schwartz Weather: sunny, high 40s low 50s  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bls): _____	Casing Capacity	
Casing Diameter (in): _____	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): _____	2	0.16
Casing Volume (gal): _____ x3 = _____	4	0.65
Total Volume Purged (gal): _____	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						
							Equipment Blank Field Blank
	Pump Off						

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

SAMPLE INFORMATION								
Sample Collection Point:								
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
EQB2φ15φ2φ3	09:11	Poly	250ml	1	300.0	NP	Y	
FB2φ15φ2φ3	09:11	Poly	250ml	1	300.0	NP	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 parameters stabilized.
  - Purged well until field parameters stabilized.
  - Other: \_\_\_\_\_

Additional Comments: \* While at Schwartz

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/12/15  
 Well ID: Equipment + Field Blank Weather: 40s, windy  
 ADWR No: — Sampler: DEP + RDT

WELL DATA		
Well Depth (ft bls):	<i>/</i>	Casing Capacity
Casing Diameter (in):		Nominal Size (inches)
Static Water Level (ft bmp):		Gallons per Linear Foot
Casing Volume (gal):		2
Total Volume Purged (gal):		4
		5
	6	
	8	
	10	
		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						
							<i>/</i>
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
* EAB2φ15φ212	10:30	Poly	250ml	1	300.0	NP	N
* FB2φ15φ212	10:30	Poly	250ml	1	300.0	NP	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: \*While at NWC-02

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Goar Ranch Weather: Sunny, 50s  
 ADWR No: 61094 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>250</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>191.44</u>	2	0.16
Casing Volume (gal): <u>—</u> x3 =	4	0.65
Total Volume Purged (gal): <u>—</u>	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						
							<div style="font-size: 2em; font-weight: bold; text-align: center;">WLO</div>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Howard NR Weather: sunny, breezy, 50s  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>220</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>157.11</u>	2	0.16
Casing Volume (gal): _____ x3 = _____	4	0.65
Total Volume Purged (gal): _____	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 0.3 su pH, 2 degrees C, and 100 µS/cm)

SAMPLE INFORMATION							
Sample Collection Point:							
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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_





**Q1 LADD Wells  
Depth to Water**

<b>Date</b>	<b>LADD 837</b>	<b>LADD 538</b>	<b>LADD 977</b>	<b>LADD 251</b>	<b>ASLD 435</b>
3/24/2015	261.44	248.46	83.73	214.18	250.25

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: McConnell 265 Weather: sunny, 60s  
 ADWR No: 539265 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>216</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>163.32</u>	2	0.16
Casing Volume (gal): <u>          </u> x3 =	4	0.65
Total Volume Purged (gal): <u>          </u>	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						

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

SAMPLE INFORMATION							
Sample Collection Point:							
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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 055038-287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/27/15  
 Well ID: Metzler Weather: Sunny 50s  
 ADWR No: 35-71891 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>351</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>293.36</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>—</u> x3 = <u>—</u>	2
Total Volume Purged (gal):	<u>—</u>	4
		5
		6
		8
		10
		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 0.3 su pH, 2 degrees C, and 100 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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

**Additional Comments:**

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/12/15 2/12/15  
 Well ID: NWC-02 Weather: 40s, windy  
 ADWR No: 562944 Sampler: DEP + RDT

WELL DATA		
Well Depth (ft bls): <u>312</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>*165.02</u>	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal):	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
<u>10:45</u>	<u>Pump On</u>						
<u>10:50</u>	<u>5m</u>			<u>7.50</u>	<u>21.60</u>	<u>442</u>	
<u>10:55</u>	<u>10m</u>			<u>7.54</u>	<u>20.80</u>	<u>438</u>	
<u>11:00</u>	<u>15m</u>			<u>7.50</u>	<u>20.80</u>	<u>432</u>	
<u>11:05</u>				<u>7.54</u>	<u>20.40</u>	<u>436</u>	
<u>11:10</u>				<u>7.48</u>	<u>20.60</u>	<u>432</u>	
<u>11:15</u>				<u>7.42</u>	<u>21.00</u>	<u>436</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-02</u>	<u>11:18</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y(hand)</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: \* Bill with SW Utilities removed nipple from well head for water level access.  
\*\* No information for pump run time.  
\* Sample for hand filter has visible solids so we ran parameters again.



# Groundwater Sampling Form

Project No: 055038 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/12/15  
 Well ID: NWC-03 Cap Weather: 40s, windy  
 ADWR No: 627684 Sampler: DEP & ROT

WELL DATA		
Well Depth (ft bls): <u>179</u>	Casing Capacity	
Casing Diameter (in): <u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>136.27</u>	2	0.16
Casing Volume (gal): <u>    </u> x3 =	4	0.65
Total Volume Purged (gal): <u>    </u>	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 0.3 su pH, 2 degrees C, and 100 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/12/15  
 Well ID: NWC-04 Weather: ~ 55°F Very Windy  
 ADWR No: 551849 Sampler: RDT

WELL DATA			Casing Capacity	
Well Depth (ft bls):	<u>462</u>		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	<u>10</u>		2	0.16
Static Water Level (ft bmp):			4	0.65
Casing Volume (gal):	<u>x3 =</u>		5	1.02
			6	1.47
			8	2.61
			10	4.08
Total Volume Purged (gal):			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
<u>1415</u>	<u>Pump On</u>						
<u>1427</u>				<u>7.58</u>	<u>19.0</u>	<u>811.6</u>	
<u>1432</u>				<u>7.86</u>	<u>19.8</u>	<u>851.6</u>	
<u>1437</u>				<u>7.81</u>	<u>20.3</u>	<u>856.4</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point: Well head spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-04</u>	<u>1440</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NA</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/12/15  
 Well ID: NWC-06 Weather: 40s, windy  
 ADWR No: 575700 Sampler: DEP + RDT

WELL DATA		
Well Depth (ft bls): <u>340</u>	Casing Capacity	
Casing Diameter (in): <u>8</u>	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
Static Water Level (ft bmp): <u>—</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>x3 =</u>	6	1.47
	8	2.61
Total Volume Purged (gal):	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
<u>08:45</u>	<u>Pump On</u>						
<u>08:50</u>	<u>5m</u>			<u>7.56</u>	<u>21.3</u>	<u>402</u>	
<u>08:55</u>	<u>10m</u>			<u>7.60</u>	<u>21.6</u>	<u>401</u>	
<u>09:00</u>	<u>15m</u>			<u>7.60</u>	<u>21.2</u>	<u>405</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
<u>Sample Collection Point: Spigot off well head</u>							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-06</u>	<u>09:07</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y(hand)</u>
<u>DUP20150212</u>	<u>12:00</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y(hand)</u>

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input checked="" type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input checked="" type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: -055038 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/26/15  
 Well ID: Panagakos Weather: Partly cloudy, ~56°F  
 ADWR No: \_\_\_\_\_ Sampler: \_\_\_\_\_

WELL DATA		
Well Depth (ft bls):	<u>200</u>	Casing Capacity
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)      Gallons per Linear Foot
Static Water Level (ft bmp):	<u>158.02</u>	2      0.16
Casing Volume (gal):	<u>110 x3 = 330</u>	4      0.65
Total Volume Purged (gal):		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
<u>14:50</u>	<u>Pump On</u>						
<u>15:05</u>	<u>15m</u>	<u>7</u>	<u>105</u>	<u>7.14</u>	<u>20.8</u>	<u>1239</u>	<u>Temp F° 69.4°</u>
<u>15:20</u>	<u>30m</u>	<u>7</u>	<u>210</u>	<u>7.09</u>	<u>20.9</u>	<u>1307</u>	<u>69.6°</u>
<u>15:35</u>	<u>45m</u>	<u>7</u>	<u>315</u>	<u>7.16</u>	<u>21.4</u>	<u>1358</u>	} <u>70.5°</u>
<u>15:38</u>	<u>48m</u>	<u>7</u>	<u>336</u>	<u>7.11</u>	<u>20.5</u>	<u>1353</u>	
<u>15:43</u>	<u>53m</u>	<u>7</u>	<u>371</u>	<u>7.11</u>	<u>19.6</u>	<u>1349</u>	
							<u>Pump Off</u>

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

SCP: spigot ~ 50' SE of wellhead

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Panagakos</u>	<u>15:51</u>	<u>Pdy</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>EQB20150126</u>	<u>15:28</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>X N</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized. 3+ well volumes
- Other: \_\_\_\_\_

Additional Comments: Returned ball valve to off.

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Pionke 395 Weather: Sunny, 50s  
 ADWR No: 613395 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>330</u>	Casing Capacity
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>155.81</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>—</u> x3 =	2
Total Volume Purged (gal):	<u>—</u>	4
		5
		6
		8
		10
		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						
							WLD
	Pump Off						

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

SAMPLE INFORMATION							
Sample Collection Point:							
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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

**Additional Comments:**

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# Groundwater Sampling Form

Project No: 055038 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/27/15  
 Well ID: Power 639 Weather: Sunny 50's  
 ADWR No: 222639 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>480</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>294.24</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>273 x3 = 819</u>	2 0.16
Total Volume Purged (gal):	<u>840</u>	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
<u>09:50</u>	<u>Pump On</u>						
<u>10:05</u>	<u>15m</u>	<u>12</u>	<u>180</u>	<u>7.32</u>	<u>21.7</u>	<u>868</u>	
<u>10:20</u>	<u>30m</u>	<u>12</u>	<u>360</u>	<u>7.31</u>	<u>21.9</u>	<u>903</u>	
<u>10:35</u>	<u>45m</u>	<u>12</u>	<u>540</u>	<u>7.23</u>	<u>22.7</u>	<u>917</u>	
<u>10:50</u>	<u>60m</u>	<u>12</u>	<u>720</u>	<u>7.28</u>	<u>22.4</u>	<u>933</u>	
<u>11:00</u>	<u>70m</u>	<u>12</u>	<u>840</u>	<u>7.27</u>	<u>22.0</u>	<u>922</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Power 639</u>	<u>11:06</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

~~AD~~ 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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:  
Next house north of Para





# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 3-10-15  
 Well ID: Power 639 Weather: Clear Skies 40°-60°  
 ADWR No: 222639 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>480</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6</u>	2	0.16
Static Water Level (ft bmp): <u>294.19</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>273</u> x3 = <u>818</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>825</u>	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
<u>12:52</u>	<u>Pump On</u>						
<u>13:07</u>	<u>15</u>	<u>11</u>	<u>165</u>	<u>7.29</u>	<u>22.8</u>	<u>967.8</u>	
<u>13:22</u>	<u>30</u>	<u>11</u>	<u>330</u>	<u>7.38</u>	<u>22.3</u>	<u>1005</u>	
<u>13:37</u>	<u>45</u>	<u>11</u>	<u>495</u>	<u>7.28</u>	<u>21.7</u>	<u>1028</u>	
<u>13:52</u>	<u>60</u>	<u>11</u>	<u>660</u>	<u>7.29</u>	<u>22.0</u>	<u>1031</u>	
<u>14:07</u>	<u>75</u>	<u>11</u>	<u>825</u>	<u>7.35</u>	<u>21.9</u>	<u>1032</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Power 639</u>	<u>14:10</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NA</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Ramirez Weather: Sunny, 50s  
 ADWR No: 216425 Sampler: DEP

WELL DATA			
Well Depth (ft bls):	300	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
Static Water Level (ft bmp):	164.33	4	0.65
Casing Volume (gal):	— x3 =	5	1.02
		6	1.47
		8	2.61
		10	4.08
Total Volume Purged (gal):	—	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						
			WLD				
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Able to get sounder past obstruction in wells

# Groundwater Sampling Form

Project No: 055038-287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/27/15  
 Well ID: Ruiz Weather: Sunny, ~57°  
 ADWR No: 531770 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>312</u>	Casing Capacity
Casing Diameter (in):	<u>6</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>299.76</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>18 x3 = 54</u>	2 0.16
Total Volume Purged (gal):	<u>60</u>	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
<u>12:15</u>	<u>Pump On</u>						
<u>12:20</u>	<u>5m</u>	<u>4</u>	<u>20</u>	<u>7.14</u>	<u>21.6</u>	<u>854</u>	
<u>12:25</u>	<u>10m</u>	<u>4</u>	<u>40</u>	<u>7.10</u>	<u>21.9</u>	<u>861</u>	
<u>12:30</u>	<u>15m</u>	<u>4</u>	<u>60</u>	<u>7.14</u>	<u>21.4</u>	<u>853</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>SCP: wellhead spigot</u>							
<u>Ruiz</u>	<u>12:37</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

**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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/3/15  
 Well ID: Schwartz Weather: sunny, 40s  
 ADWR No: 210865 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>305</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>6</u>	2	0.16
Static Water Level (ft bmp): <u>128.66</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>259 x3 = 777</u>	6	1.47
	8	2.61
	10	4.08
Total Volume Purged (gal): <u>800</u>	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
<u>08:25</u>	<u>Pump On</u>						
<u>08:45</u>	<u>20m</u>	<u>10</u>	<u>200</u>	<u>7.28</u>	<u>20.6</u>	<u>703</u>	
<u>09:05</u>	<u>40m</u>	<u>10</u>	<u>400</u>	<u>7.38</u>	<u>21.5</u>	<u>705</u>	
<u>09:25</u>	<u>60m</u>	<u>10</u>	<u>600</u>	<u>7.35</u>	<u>22.0</u>	<u>704</u>	
<u>09:45</u>	<u>80m</u>	<u>10</u>	<u>800</u>	<u>7.35</u>	<u>22.4</u>	<u>714</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point: well head spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Schwartz</u>	<u>09:49</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>
<u>DUP20150203</u>	<u>12:00</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 055038- 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/26/15  
 Well ID: Stephens Weather: Partly Cloud, 50s  
 ADWR No: 808560 Sampler: DEP

WELL DATA		
Well Depth (ft bls):	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	2	0.16
Static Water Level (ft bmp): <u>47.91</u>	4	0.65
Casing Volume (gal): <u>x3 =</u>	5	1.02
Total Volume Purged (gal): <u>        </u>	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							
<i>(A diagonal line is drawn across the entire table area)</i>							
Pump Off							

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

SAMPLE INFORMATION							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<i>(A diagonal line is drawn across the entire table area)</i>							

### 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:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Thompson 151 Weather: sunny, 50s  
 ADWR No: 612151 Sampler: DEP

WELL DATA			
Well Depth (ft bls):	Casing Diameter (in):	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
<u>210</u>	<u>7</u>	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp): <u>146.56</u>		6	1.47
		8	2.61
Casing Volume (gal): <u>—</u> x3 =		10	4.08
Total Volume Purged (gal): <u>—</u>	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
	<b>Pump On</b>						
							<b>Pump Off</b>

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

SAMPLE INFORMATION							
Sample Collection Point:							
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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

**Additional Comments:**

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 2-4-15  
 Well ID: TM-7 Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Shumway

### WELL DATA

Well Depth (ft bis): _____	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): _____	2	0.16
Static Water Level (ft bmp): _____	4	0.65
Casing Volume (gal): _____ x3 = _____	5	1.02
	6	1.47
	8	2.61
Total Volume Purged (gal): _____	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
1200	Pump On						
1202	2	10	20	7.09	20.6	627	
1212	—						
1214	4	10	40	7.56	20.7	354	
1224	—						
1226	6	10	60	7.59	20.9	370	
1236	—						
1238	8	10	80	7.58	21.0	375	
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-7	1238	PL	250	1	300	Pa	X

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: \_\_\_\_\_

Additional Comments: Sampled per Clear Creek methods



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/28/15  
 Well ID: TM-10 USBP Weather: sunny, 70s  
 ADWR No: 522696 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>290</u>	Casing Capacity	
Casing Diameter (in): <u>4</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>252.47</u>	2	0.16
Casing Volume (gal): <u>25 x3 = 75</u>	4	<u>0.65</u>
Total Volume Purged (gal): <u>150</u>	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
<u>15:00</u>	<u>Pump On</u>						
<u>15:05</u>	<u>5m</u>	<u>10</u>	<u>50</u>	<u>7.71</u>	<u>22.9</u>	<u>435</u>	
<u>15:10</u>	<u>10m</u>	<u>10</u>	<u>100</u>	<u>7.72</u>	<u>23.2</u>	<u>427</u>	
<u>15:15</u>	<u>15m</u>	<u>10</u>	<u>150</u>	<u>7.75</u>	<u>23.0</u>	<u>413</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TM-10 USBP</u>	<u>15:21</u>	<u>Poly</u>	<u>250ml</u> <u>250</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y(hand)</u>

**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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

Additional Comments: Purged for 15 minutes @ ~10gpm did not go dry.

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: TVI-236 Weather: \_\_\_\_\_  
 ADWR No: \_\_\_\_\_ Sampler: \_\_\_\_\_

WELL DATA		
Well Depth (ft bls):	<u>222</u>	Casing Capacity
Casing Diameter (in):	<u>12"</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>126.81</u>	Gallons per Linear Foot
Casing Volume (gal):	— x3 =	2 0.16
Total Volume Purged (gal):	—	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						
							WLO

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

SAMPLE INFORMATION								
Sample Collection Point:								
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

**Additional Comments:**  
Bob Ruff indicated well pump out. Bob asked if I could measure the bottom of well to know where to place new pump. Bottom of well is 206.65.

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/29/15  
 Well ID: TVI-713 Weather: cloudy-sprinkles, 60°  
 ADWR No: \_\_\_\_\_ Sampler: DEP

WELL DATA		
Well Depth (ft bls):	<u>200</u>	Casing Capacity
Casing Diameter (in):	<u>8</u>	Nominal Size (inches)
Static Water Level (ft bmp):	<u>132.01</u>	Gallons per Linear Foot
Casing Volume (gal):	<u>x3 =</u>	2 0.16
Total Volume Purged (gal):		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						
							WLO
							Pump Off

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

SAMPLE INFORMATION							
Sample Collection Point:							
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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

Additional Comments: SWL measure point top of 2" pipe

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 1/30/15  
 Well ID: Weed Weather: Raining, 40s  
 ADWR No: 544535 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>320</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>* /</u>	2	0.16
Casing Volume (gal): <u>/</u> x3 =	4	0.65
Total Volume Purged (gal): <u>/</u>	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
<u>10:25</u>	<u>Pump On</u>						
<u>10:28</u>	<u>3m</u>	<u>**</u>	<u>-</u>	<u>7.79</u>	<u>18.1</u>	<u>383</u>	
<u>10:31</u>	<u>6m</u>		<u>-</u>	<u>7.78</u>	<u>20.1</u>	<u>380</u>	
<u>10:34</u>	<u>9m</u>		<u>-</u>	<u>7.80</u>	<u>20.5</u>	<u>379</u>	
<u>10:37</u>	<u>12m</u>		<u>-</u>	<u>7.81</u>	<u>20.7</u>	<u>381</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Weed</u>	<u>10:41</u>	<u>Poly</u>	<u>250ml</u>	<u>2</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

\* Not able to take SWL  
\*\* Flow not available Total flow of pump not accessible. Take parameters at 3 minute intervals then sample.

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Weiskopf 802 Weather: sunny, 60°  
 ADWR No: 641802 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>200</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>150.01</u>	2	0.16
Casing Volume (gal): <u>—</u> x3 =	4	0.65
Total Volume Purged (gal): <u>—</u>	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						
							<div style="font-size: 2em; font-weight: bold; transform: rotate(-45deg); display: inline-block;">WFO</div>
							Pump Off

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 2/2/15  
 Well ID: Zander Weather: sunny, 60s  
 ADWR No: 205126 Sampler: DEP

WELL DATA		
Well Depth (ft bls): <u>280</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>*</u>	2	0.16
Casing Volume (gal): <u>                    </u> x3 =	4	0.65
Total Volume Purged (gal): <u>                    </u>	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						
							<div style="position: relative; height: 100px;"> <span style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">WLD</span> </div>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)

WATER LEVEL MEASUREMENT COLLECTION
<input type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input checked="" type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: \* Unable to get sounder past 20' bmp because of obstruction in well.

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-15-15  
 Well ID: BMO-2014-1BU Weather: Windy, Sunny, ~70s  
 ADWR No: 55-917394 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>272.8'</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>123.90'</u>	2	0.16
Casing Volume (gal): <u>151.88</u> x3 = <u>455.63</u>	4	0.65
	5	1.02
	6	1.47
	8	2.61
Total Volume Purged (gal): <u>462</u>	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
<u>15:10</u>	<u>Pump On</u>						
<u>15:20</u>	<u>10</u>	<u>14.0</u>	<u>140</u>	<u>7.40</u>	<u>21.2</u>	<u>738.4</u>	<u>* water is slightly murky</u>
<u>15:26</u>	<u>16</u>	<u>14.0</u>	<u>224</u>	<u>7.41</u>	<u>21.1</u>	<u>739.1</u>	<u>* water is clear</u>
<u>15:31</u>	<u>21</u>	<u>14.0</u>	<u>294</u>	<u>7.40</u>	<u>21.3</u>	<u>735.3</u>	
<u>15:38</u>	<u>28</u>	<u>14.0</u>	<u>392</u>	<u>7.40</u>	<u>21.3</u>	<u>735.2</u>	
<u>15:43</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-1BU</u>	<u>15:43</u>	<u>Poly</u>	<u>250 mL</u>	<u>1</u>	<u>3005.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

\* Picture

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-15-15  
 Well ID: BMO-2014-1B1 Weather: Windy, Sunny  
 ADWR No: 55-917393 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>366</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>123.45</u>	2	0.16
Casing Volume (gal): <u>247.40</u> x3 = <u>742.20</u>	4	0.65
Total Volume Purged (gal): <u>672</u>	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
<u>14:12</u>	<u>Pump On</u>						
<u>14:24</u>	<u>12</u>	<u>14.0</u>	<u>168</u>	<u>7.34</u>	<u>22.1</u>	<u>696.7</u>	
<u>14:35</u>	<u>23</u>	<u>14.0</u>	<u>322</u>	<u>7.42</u>	<u>22.0</u>	<u>694.7</u>	
<u>14:45</u>	<u>33</u>	<u>14.0</u>	<u>462</u>	<u>7.44</u>	<u>21.9</u>	<u>696.1</u>	
<u>14:56</u>	<u>44</u>	<u>14.0</u>	<u>616</u>	<u>7.43</u>	<u>21.9</u>	<u>695.0</u>	
<u>15:00</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-1B1</u>	<u>15:00</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

**Additional Comments:**

Parameters were stable, collected sample before 3 well volumes purged in order to have sample delivered in time by AWC.





# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-15-15  
 Well ID: BMO-2014-2BU Weather: Windy, Sunny  
 ADWR No: 55-917453 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>276'</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>126.65</u>	2	0.16
Casing Volume (gal): <u>152.34 x3 = 457.01</u>	4	0.65
	5	1.02
	6	1.47
	8	2.61
	10	4.08
Total Volume Purged (gal): <u>490</u>	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
<u>13:15</u>	<u>Pump On</u>						
<u>13:25</u>	<u>10</u>	<u>14.0</u>	<u>140</u>	<u>7.57</u>	<u>21.1</u>	<u>534.9</u>	
<u>13:30</u>	<u>15</u>	<u>14.0</u>	<u>210</u>	<u>7.56</u>	<u>20.9</u>	<u>534.7</u>	
<u>13:35</u>	<u>20</u>	<u>14.0</u>	<u>280</u>	<u>7.57</u>	<u>20.8</u>	<u>535.9</u>	
<u>13:44</u>	<u>29</u>	<u>14.0</u>	<u>406</u>	<u>7.56</u>	<u>20.7</u>	<u>536.1</u>	
<u>13:50</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-2BU</u>	<u>13:50</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:  
13:28 Calibrated Myron Ultrameter II



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-15-15  
 Well ID: BMC-2014-2BL Weather: Windy, Sunny  
 ADWR No: 55-917452 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>396'</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5"</u>	2	0.16
	4	0.65
Static Water Level (ft bmp): <u>126.70'</u>	5	1.02
	6	1.47
Casing Volume (gal): <u>27469 x3 = 824.06</u>	8	2.61
	10	4.08
Total Volume Purged (gal): <u>896</u>	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
<u>11:56</u>	<u>Pump On</u>						
<u>12:09</u>	<u>13</u>	<u>14.0</u>	<u>182</u>	<u>7.31</u>	<u>21.4</u>	<u>1202</u>	<u>Rotten Egg Smell &amp;</u>
<u>12:20</u>	<u>24</u>	<u>14.0</u>	<u>336</u>	<u>7.35</u>	<u>21.2</u>	<u>1197</u>	<u>water is slightly murky</u>
<u>12:30</u>	<u>34</u>	<u>14.0</u>	<u>476</u>	<u>7.39</u>	<u>21.2</u>	<u>1188</u>	<u>Water cleared up</u>
<u>12:40</u>	<u>44</u>	<u>14.0</u>	<u>616</u>	<u>7.42</u>	<u>21.4</u>	<u>1175</u>	<u>w/ no smell @</u>
<u>12:50</u>	<u>54</u>	<u>14.0</u>	<u>756</u>	<u>7.31</u>	<u>21.2</u>	<u>1171</u>	<u>~12:10</u>
<u>12:55</u>	<u>59</u>	<u>14.0</u>	<u>826</u>	<u>7.27</u>	<u>21.2</u>	<u>1169</u>	
<u>13:00</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMC-2014-2BL</u>	<u>13:00</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

& Calibrated Myron Ultracore II @ 12:30 to justify results of parameters

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1-0 Date: 4-15-15  
 Well ID: BMO-2014-3BU Weather: Windy, Sunny  
 ADWR No: 55-917494 Sampler: RDI

WELL DATA		
Well Depth (ft bls): <u>288'</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>139.45</u>	2	0.16
Casing Volume (gal): <u>151.52</u> x3 = <u>454.56</u>	4	0.65
Total Volume Purged (gal): <u>504</u>	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
<u>10:43</u>	<u>Pump On</u>						
<u>10:52</u>	<u>9</u>	<u>14.0</u>	<u>126</u>	<u>7.69</u>	<u>20.9</u>	<u>481.5</u>	
<u>11:00</u>	<u>17</u>	<u>14.0</u>	<u>238</u>	<u>7.72</u>	<u>20.5</u>	<u>475.0</u>	
<u>11:06</u>	<u>23</u>	<u>14.0</u>	<u>322</u>	<u>7.65</u>	<u>20.5</u>	<u>471.3</u>	
<u>11:14</u>	<u>31</u>	<u>14.0</u>	<u>434</u>	<u>7.67</u>	<u>20.4</u>	<u>469.5</u>	
<u>11:19</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-3BU</u>	<u>11:19</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>3000.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-15-15  
 Well ID: BMO-2014-3BL Weather: Breezy  
 ADWR No: 55-917527 Sampler: RPT

WELL DATA		
Well Depth (ft bls): <u>5.21'</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
Static Water Level (ft bmp): <u>138.35'</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>390.30 x3 = 1,170.91</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>1176</u>	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
<u>09:01</u>	<u>Pump On</u>						
<u>09:22</u>	<u>21</u>	<u>14.0</u>	<u>294</u>	<u>7.64</u>	<u>21.3</u>	<u>427.6</u>	
<u>09:41</u>	<u>40</u>	<u>14.0</u>	<u>560</u>	<u>7.78</u>	<u>21.5</u>	<u>411.0</u>	
<u>10:00</u>	<u>59</u>	<u>14.0</u>	<u>826</u>	<u>7.69</u>	<u>21.5</u>	<u>405.7</u>	
<u>10:10</u>	<u>69</u>	<u>14.0</u>	<u>966</u>	<u>7.71</u>	<u>21.5</u>	<u>401.4</u>	
<u>10:20</u>	<u>79</u>	<u>14.0</u>	<u>1106</u>	<u>7.72</u>	<u>21.6</u>	<u>402.3</u>	
<u>10:25</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-3BL</u>	<u>10:25</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-14-15  
 Well ID: BMO-2014-4B Weather: Windy  
 ADWR No: 55-917620 Sampler: JDT

WELL DATA		
Well Depth (ft bls): <u>258'</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>133.60</u>	2	0.16
Casing Volume (gal): <u>126.87</u> x3 = <u>380.66</u>	4	0.65
Total Volume Purged (gal): <u>495</u>	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
<u>13:06</u>	<u>Pump On</u>						
<u>13:12</u>	<u>6</u>	<u>15</u>	<u>90</u>	<u>7.62</u>	<u>21.2</u>	<u>496.3</u>	
<u>13:19</u>	<u>13</u>	<u>15</u>	<u>195</u>	<u>7.61</u>	<u>21.0</u>	<u>495.9</u>	
<u>13:26</u>	<u>20</u>	<u>15</u>	<u>300</u>	<u>7.59</u>	<u>21.0</u>	<u>496.7</u>	
<u>13:34</u>	<u>28</u>	<u>15</u>	<u>420</u>	<u>7.61</u>	<u>20.9</u>	<u>494.7</u>	
<u>13:39</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-4B</u>	<u>13:39</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-14-15  
 Well ID: BMO-2014-4B2 Weather: Breezy, Sunny  
 ADWR No: 55-917619 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>261'</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
Static Water Level (ft bmp): <u>132.95'</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>130.61 x3 = 391.83</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>437.5</u>	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
<u>13:56</u>	<u>Pump On</u>						
<u>14:02</u>	<u>6</u>	<u>12.5</u>	<u>75</u>	<u>7.71</u>	<u>21.2</u>	<u>637.0</u>	
<u>14:09</u>	<u>13</u>	<u>12.5</u>	<u>162.5</u>	<u>7.63</u>	<u>21.3</u>	<u>660.2</u>	
<u>14:14</u>	<u>18</u>	<u>12.5</u>	<u>225</u>	<u>7.73</u>	<u>21.4</u>	<u>662.5</u>	
<u>14:20</u>	<u>24</u>	<u>12.5</u>	<u>300</u>	<u>7.65</u>	<u>21.4</u>	<u>663.2</u>	
<u>14:28</u>	<u>32</u>	<u>12.5</u>	<u>400</u>	<u>7.63</u>	<u>21.4</u>	<u>665.1</u>	
<u>14:31</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2014-4B2</u>	<u>14:31</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-14-15  
 Well ID: BMO-2015-113 Weather: Breezy, Sunny  
 ADWR No: 55-917622 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>244</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5"</u>	2	0.16
	4	0.65
Static Water Level (ft bmp): <u>129.10</u>	5	1.02
	6	1.47
Casing Volume (gal): <u>117.20</u> x3 = <u>351.59</u>	8	2.61
	10	4.08
Total Volume Purged (gal): <u>420</u>	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
<u>12:05</u>	<u>Pump On</u>						
<u>12:12</u>	<u>7</u>	<u>15</u>	<u>105</u>	<u>7.57</u>	<u>20.9</u>	<u>694.7</u>	
<u>12:21</u>	<u>16</u>	<u>15</u>	<u>240</u>	<u>7.61</u>	<u>21.0</u>	<u>688.7</u>	
<u>12:28</u>	<u>23</u>	<u>15</u>	<u>345</u>	<u>7.59</u>	<u>20.9</u>	<u>680.1</u>	
<u>12:33</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2015-113</u>	<u>12:33</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:  
12:10 Calibrated Myron Ultrameter II



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-14-15  
 Well ID: BMO-2015-1B2 Weather: Windy, Sunny  
 ADWR No: 55-917621 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>241</u>	Casing Capacity	
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
Static Water Level (ft bmp): <u>130.45</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>112.76 x3 = 338.28</u>	6	1.47
	8	2.61
Total Volume Purged (gal): <u>402.5</u>	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
<u>11:12</u>	<u>Pump On</u>						
<u>11:17</u>	<u>5</u>	<u>11.5</u>	<u>57.5</u>	<u>7.50</u>	<u>20.5</u>	<u>725.1</u>	
<u>11:24</u>	<u>12</u>	<u>11.5</u>	<u>138.0</u>	<u>7.68</u>	<u>20.6</u>	<u>730.2</u>	
<u>11:32</u>	<u>20</u>	<u>11.5</u>	<u>230.0</u>	<u>7.60</u>	<u>20.6</u>	<u>735.3</u>	
<u>11:38</u>	<u>26</u>	<u>11.5</u>	<u>299.0</u>	<u>7.57</u>	<u>20.7</u>	<u>735.4</u>	
<u>11:43</u>	<u>31</u>	<u>11.5</u>	<u>356.5</u>	<u>7.55</u>	<u>20.7</u>	<u>733.4</u>	
<u>11:47</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2015-1B2</u>	<u>11:47</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 7-14-15  
 Well ID: BMO-2015-2B Weather: Cloudy, Sunny  
 ADWR No: 58-917827 Sampler: RDI

WELL DATA			
Well Depth (ft bls): <u>268'</u>	Casing Capacity		
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot	
Static Water Level (ft bmp): <u>149.05</u>	2	0.16	
Casing Volume (gal): <u>121.33</u> x3 = <u>363.99</u>	4	0.65	
Total Volume Purged (gal): <u>481.5</u>	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
<u>10:07</u>	<u>Pump On</u>						
<u>10:12</u>	<u>5</u>	<u>10.5</u>	<u>52.5</u>	<u>7.41</u>	<u>20.5</u>	<u>890.4</u>	<u>10.5 gpm via flow meter</u>
<u>10:19</u>	<u>12</u>	<u>13.0</u>	<u>143.5</u>	<u>7.42</u>	<u>20.5</u>	<u>867.7</u>	<u>5 gal / 23 seconds</u>
<u>10:27</u>	<u>20</u>	<u>13.0</u>	<u>247.5</u>	<u>7.42</u>	<u>20.6</u>	<u>845.8</u>	
<u>10:35</u>	<u>28</u>	<u>13.0</u>	<u>351.5</u>	<u>7.45</u>	<u>20.6</u>	<u>832.9</u>	
<u>10:42</u>	<u>35</u>	<u>13.0</u>	<u>442.5</u>	<u>7.41</u>	<u>20.7</u>	<u>832.4</u>	
<u>10:45</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2015-2B</u>	<u>10:45</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1.0 Date: 4-14-15  
 Well ID: BMD-2015-2BL Weather: Windy, Clear Skies  
 ADWR No: 55-917528 Sampler: RTST

WELL DATA			
Well Depth (ft bls): <u>272</u>	Casing Capacity		
Casing Diameter (in): <u>5"</u>	Nominal Size (inches)	Gallons per Linear Foot	
	2	0.16	
Static Water Level (ft bmp): <u>147.60</u>	4	0.65	
	5	1.02	
Casing Volume (gal): <u>126.89</u> x3 = <u>380.66</u>	6	1.47	
	8	2.61	
Total Volume Purged (gal): <u>455</u>	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
<u>08:58</u>	<u>Pump On</u>						
<u>09:08</u>	<u>10</u>	<u>9.1</u>	<u>91.0</u>	<u>7.42</u>	<u>21.1</u>	<u>876.5</u>	<u>* A/C Flowmeter</u>
<u>09:14</u>	<u>16</u>	<u>9.1</u>	<u>145.6</u>	<u>7.42</u>	<u>21.0</u>	<u>872.0</u>	<u>to obtain flow</u>
<u>09:21</u>	<u>23</u>	<u>9.1</u>	<u>209.3</u>	<u>7.40</u>	<u>20.9</u>	<u>872.0</u>	<u>* 5gal bucket</u>
<u>09:28</u>	<u>30</u>	<u>9.1</u>	<u>273.0</u>	<u>7.40</u>	<u>20.8</u>	<u>867.9</u>	<u>to check</u>
<u>09:36</u>	<u>38</u>	<u>9.1</u>	<u>345.8</u>	<u>7.38</u>	<u>20.9</u>	<u>866.1</u>	
<u>09:43</u>	<u>45</u>	<u>9.1</u>	<u>409.5</u>	<u>7.38</u>	<u>20.9</u>	<u>860.0</u>	
<u>09:48</u>	<u>SAMPLE COLLECTED</u>						
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMD-2015-2BL</u>	<u>09:48</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

Calibrated Myron Ultrameter II @ 09:00



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 4-9-15  
 Well ID: NWC-04 Weather: Breezy, Sunny, 70s  
 ADWR No: 551849 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>462</u>	Casing Capacity	
Casing Diameter (in): <u>10</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): _____	2	0.16
Casing Volume (gal): <u>x3 =</u>	4	0.65
Total Volume Purged (gal): _____	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
<u>1115</u>	<u>Pump On</u>						
<u>1154</u>				<u>7.52</u>	<u>24.6</u>	<u>823.9</u>	
<u>1159</u>				<u>7.42</u>	<u>24.3</u>	<u>824.5</u>	
<u>1205</u>				<u>7.40</u>	<u>24.6</u>	<u>825.2</u>	
<u>1212</u>				<u>7.41</u>	<u>24.6</u>	<u>823.2</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>NWC-04</u>	<u>12:18</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 4-28-15  
 Well ID: Power 639 Weather: Sunny, Breezy  
 ADWR No: 222639 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>480</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>294.17</u>	2	0.16
Casing Volume (gal): <u>273</u> x3 = <u>819</u>	4	0.65
	5	1.02
	6	1.47
	8	2.61
	10	4.08
Total Volume Purged (gal):	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
<u>16:15</u>	<u>Pump On</u>						
<u>16:24</u>	<u>9</u>	<u>11</u>	<u>99</u>	<u>7.42</u>	<u>21.5</u>	<u>874.3</u>	
<u>16:33</u>	<u>18</u>	<u>11</u>	<u>198</u>	<u>7.37</u>	<u>21.1</u>	<u>951.0</u>	
<u>16:50</u>	<u>35</u>	<u>11</u>	<u>385</u>	<u>7.41</u>	<u>20.9</u>	<u>982.1</u>	
<u>17:05</u>	<u>50</u>	<u>11</u>	<u>550</u>	<u>7.41</u>	<u>20.7</u>	<u>1010</u>	
<u>17:20</u>	<u>65</u>	<u>11</u>	<u>715</u>	<u>7.50</u>	<u>20.5</u>	<u>1005</u>	
<u>17:30</u>	<u>75</u>	<u>11</u>	<u>825</u>	<u>7.43</u>	<u>20.6</u>	<u>1002</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Power 639</u>	<u>17:35</u>	<u>Poly</u>	<u>250ml</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

16:20 Calibrated Myron Ultrameter II Serial # 6214776

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 5-14-15  
 Well ID: Power 639 Weather: Windy, Cloudy  
 ADWR No: 55-222639 Sampler: RDT

### WELL DATA

Well Depth (ft bls): <u>480</u> Casing Diameter (in): <u>6</u> Static Water Level (ft bmp): <u>249.23</u> Casing Volume (gal): <u>273</u> x3 = <u>818</u> Total Volume Purged (gal): <u>806</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Casing Capacity</th> </tr> <tr> <th style="text-align: center;">Nominal Size (inches)</th> <th style="text-align: center;">Gallons per Linear Foot</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2</td><td style="text-align: center;">0.16</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">0.65</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">1.02</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">1.47</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">2.61</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">4.08</td></tr> </tbody> </table> <p style="text-align: center;">Casing Volume = gallons/foot * water column (feet)</p>	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 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																

### FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
<u>14:53</u>	<u>Pump On</u>						
<u>15:06</u>	<u>13</u>	<u>13</u>	<u>169</u>	<u>7.46</u>	<u>21.7</u>	<u>910.8</u>	
<u>15:16</u>	<u>23</u>	<u>13</u>	<u>299</u>	<u>7.30</u>	<u>21.4</u>	<u>963.4</u>	
<u>15:27</u>	<u>34</u>	<u>13</u>	<u>442</u>	<u>7.30</u>	<u>21.4</u>	<u>976.8</u>	
<u>15:37</u>	<u>44</u>	<u>13</u>	<u>572</u>	<u>7.32</u>	<u>21.3</u>	<u>985.0</u>	
<u>15:47</u>	<u>54</u>	<u>13</u>	<u>702</u>	<u>7.33</u>	<u>21.2</u>	<u>990.3</u>	
<u>15:52</u>	<u>59</u>	<u>13</u>	<u>767</u>	<u>7.32</u>	<u>21.3</u>	<u>991.4</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Power 639</u>	<u>15:55</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>3000.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: 1 Date: 6-11-15  
 Well ID: Power 639 Weather: Breezy, Sunny, Hot  
 ADWR No: 222639 Sampler: RDT

WELL DATA		
Well Depth (ft bls): <u>480</u>	Casing Capacity	
Casing Diameter (in): <u>6</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>294.29</u>	2	0.16
Casing Volume (gal): <u>273</u> x3 = <u>819</u>	4	0.65
Total Volume Purged (gal):	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
<u>12:47</u>	<u>Pump On</u>						
<u>12:57</u>	<u>10</u>	<u>13</u>	<u>130</u>	<u>7.60</u>	<u>23.0</u>	<u>882.0</u>	
<u>13:07</u>	<u>20</u>	<u>13</u>	<u>260</u>	<u>7.33</u>	<u>22.9</u>	<u>878.5</u>	
<u>13:17</u>	<u>30</u>	<u>13</u>	<u>390</u>	<u>7.28</u>	<u>22.3</u>	<u>972.1</u>	
<u>13:27</u>	<u>40</u>	<u>13</u>	<u>520</u>	<u>7.28</u>	<u>22.0</u>	<u>986.8</u>	
<u>13:37</u>	<u>50</u>	<u>13</u>	<u>650</u>	<u>7.26</u>	<u>22.1</u>	<u>1005</u>	
<u>13:47</u>	<u>60</u>	<u>13</u>	<u>780</u>	<u>7.28</u>	<u>22.0</u>	<u>1014</u>	
<u>13:57</u>	<u>70</u>	<u>13</u>	<u>910</u>	<u>7.26</u>	<u>22.0</u>	<u>1019</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Power 639</u>	<u>14:00</u>	<u>Poly</u>	<u>250mL</u>	<u>1</u>	<u>300.0</u>	<u>NP</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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## Q2 Water Level Sweep

Well Name	ADWR 55 Registry Number	Date	Depth To Water (feet)	Comments
ANDERSON 396	613396	5/18/2015	152.22	
ANDERSON 458	221458	5/18/2015	156.79	
AWC-02	616586	5/19/2015	162.60	*dynamic
AWC-03	616585	5/19/2015	186.20	*dynamic
AWC-04	616584	5/19/2015	113.90	
AWC-05	590620	5/19/2015	148.05	
BMO-2008-3B	909147	5/28/2015	150.47	Col. By C Sherman
BMO-2008-5B	909653	5/28/2015	144.90	Col. By C Sherman
BMO-2008-5M	909552	5/19/2015	151.58	
BMO-2008-6B	909146	5/19/2015	195.00	Col. By C Sherman
BMO-2008-6M	909019	5/19/2015	195.64	Col. By C Sherman
BMO-2010-3B	219970	5/18/2015	118.49	
BMO-2010-3M	219969	5/18/2015	120.48	
BMO-2014-1BL	917394	5/18/2015	123.93	
BMO-2014-1BU	917393	5/18/2015	124.42	
BMO-2014-2BL	917452	5/18/2015	127.18	
BMO-2014-2BU	917453	5/18/2015	127.21	
BMO-2014-3BL	917527	5/18/2015	138.64	
BMO-2014-3BU	917494	5/18/2015	139.74	
BMO-2014-4B	917620	5/18/2015	133.85	
BMO-2014-4BL	917619	5/18/2015	133.23	
BMO-2015-1B	917622	5/18/2015	129.24	
BMO-2015-1BL	917621	5/18/2015	130.59	
BMO-2015-2B	917827	5/18/2015	149.18	
BMO-2015-2BL	917828	5/18/2015	147.82	
COB MW-3	906823	6/2/2015	128.50	Col. By M. Lindsey
COOPER C	637069	5/19/2015	162.14	
HOBAN	805290	5/19/2015	170.37	Col. By C Sherman
HOWARD 312	221312	5/19/2015	208.08	*dynamic
HOWARD NR	NR	5/19/2015	157.31	
KEEFER	209744	5/19/2015	140.47	
LADD 977	642977	5/19/2015	84.28	Col. By C Sherman
MCCONNELL 265	539265	5/19/2015	163.54	
MCCONNELL 459	221459	5/19/2015	168.03	
NSD-02	527587	6/22/2015	104.33	
NSD-03	527586	6/22/2015	89.40	
NWC-03CAP	627684	6/2/2015	136.90	Col. By M. Lindsey
PIONKE 395	613395	5/18/2015	155.97	
PIONKE 517	221517	5/18/2015	152.76	
RAMIREZ	216425	5/28/2015	134.39	Col. By M. Lindsey
SCHWARTZ	210865	5/18/2015	129.30	
THOMPSON 151	612151	5/19/2015	166.51	
TVI 236	802236	5/19/2015	128.38	
TVI 713	567713	5/18/2015	132.34	
WEISKOPF 802	641802	5/18/2015	150.25	
WEISKOPF 897	221897	5/18/2015	149.95	

Notes:

Water level sweep conducted for EGWM map area groundwater elevation resolution



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 22, 2015
Well ID:	Anderson 396	Weather:	Overcast, 80s
ADWR No:	613396	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	285	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):	152.63	5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 (µS/cm)

## SAMPLE INFORMATION

Sample Collection Point:	Spigot near pressure tanks in shed						
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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: None

Additional Comments: WLO

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 22, 2015
Well ID:	Anderson 458	Weather:	Overcast, 80s
ADWR No:	221458	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	734			Casing Capacity	
Casing Diameter (in):	5	Nominal Size (inches)		Gallons per Linear Foot	
		2	4	0.16	0.65
Static Water Level (ft bmp):	157.03	5	6	1.02	1.47
		8	10	2.61	4.08
Casing Volume (gal):	589	x3 =	1766		
Total Volume Purged (gal):	600			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
1:40 PM	Pump On						
1:55 PM	15m	8	120	8.20	24.1	404.2	
2:10 PM	30m	8	240	8.16	24.3	403.8	
2:25 PM	45m	8	360	8.17	24.6	402.1	
2:40 PM	60m	8	480	8.17	24.5	397.5	
2:55 PM	75m	8	600	8.17	25.2	397.3	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot near pressure tanks in shed					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Anderson 458	15:00:00	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Purge minimum 1 well volume, and stable parameters

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	AWC-02	Weather:	Sunny, 80s
ADWR No:	616586	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	333			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	20			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	129.08			6	1.47
			8	2.61	
Casing Volume (gal):	3328	x3 =	9984	10	4.08
Total Volume Purged (gal):	9500			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
10:40 AM	Pump On						
11:00 AM	20m	95	1900	7.61	22.4	571.2	
11:20 AM	40m	95	3800	7.68	22.8	545.3	
11:40 AM	60m	95	5700	7.65	22.4	522.7	
12:00 PM	80m	95	7600	7.66	22.1	514.2	
12:20 PM	100m	95	9500	7.62	22.5	506.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot near pressure tanks in shed						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
AWC-02	12:30:07	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	AWC-03	Weather:	Sunny, 80s
ADWR No:	616585	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	270			Casing Capacity	
Casing Diameter (in):	16			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	118.00			4	0.65
				5	1.02
				6	1.47
Casing Volume (gal):	1588	x3 =	4763	8	2.61
				10	4.08
Total Volume Purged (gal):	6300			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
9:42 AM	Pump On						
9:45 AM	3m	700	2100	7.70	21.9	507.3	
9:48 AM	6m	700	4200	7.59	21.6	498.9	
9:51 AM	9m	700	6300	7.63	21.6	493.5	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot near pressure tanks in shed						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
AWC-03	9:55:13	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	AWC-04	Weather:	Sunny, 80s
ADWR No:	616584	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	337			Casing Capacity	
Casing Diameter (in):	16			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	131.70			4	0.65
				5	1.02
Casing Volume (gal):	2144	x3 =	6433	6	1.47
				8	2.61
Total Volume Purged (gal):	6930			Casing Volume = gallons/foot * water column (feet)	
			10	4.08	

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
10:10 AM	Pump On						
10:13 AM	3m	770	2310	7.46	21.7	586.1	
10:16 AM	6m	770	4620	7.40	21.3	603.7	
10:19 AM	9m	770	6930	7.38	21.2	619.6	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:	Spigot near pressure tanks in shed						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC-04	10:20:16	Poly	200mL	1	300.0	NA	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 parameters stabilized.
  - Purged well until field parameters stabilized.
  - Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	AWC-05	Weather:	Sunny, 70s
ADWR No:	590620	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	1183			Casing Capacity	
Casing Diameter (in):	16			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	120.84			4	0.65
				5	1.02
				6	1.47
Casing Volume (gal):	11094	x3 =	33283	8	2.61
				10	4.08
Total Volume Purged (gal):	33600			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
8:36 AM	Pump On						
8:46 AM	10m	840	8400	7.60	21.7	472.5	
8:56 AM	20m	840	16800	7.65	21.8	458.4	
9:06 AM	30m	840	25200	7.68	21.9	458.2	
9:16 AM	40m	840	33600	7.67	21.9	457.9	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot near pressure tanks in shed						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
AWC-05	9:20:51	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 24, 2015
Well ID:	Banks 986	Weather:	Sunny, 80s
ADWR No:	647986	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	435			Casing Capacity	
Casing Diameter (in):	6			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	Use 237.53 from Banks 987			4	0.65
				5	1.02
				6	1.47
				8	2.61
Casing Volume (gal):	290	x3 =	870	10	4.08
Total Volume Purged (gal):				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
11:40 AM	Pump On						
12:00 PM	20m	9	180	7.69	22.7	1057	
12:20 PM	40m	9	360	7.64	22.6	1027	
12:40 PM	60m	9	540	7.65	22.6	1011	
1:00 PM	80m	9	720	7.68	22.5	1003	
1:20 PM	100m	9	900	7.67	22.6	1002	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Banks 986	13:25:03	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 24, 2015
Well ID:	Banks 987	Weather:	Partly cloudy, 80s
ADWR No:	647987	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	339	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	237.53	5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	WLO

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 20, 2015
Well ID:	Barton 919	Weather:	Overcast, windy
ADWR No:	644919	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	130	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	113.22	5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

**WLO**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	Bima	Weather:	Partly cloud, 80s
ADWR No:	577927	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	460	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	4	4	0.65
		5	1.02
Static Water Level (ft bmp):		6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):	No purge	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						
2:13:02 PM				6.87	26.2	1627	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near p-tanks in shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Bima	14:17:29	Poly	250mL	1	300.0	NA	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 per owner request, 1 field reading

Additional Comments:




Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-10-15  
 Well ID: BMO-2008-16 Weather: Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher C Sherma

WELL DATA		Casing Capacity	
Well Depth (ft bls):	Casing Diameter (in):	Nominal Size (inches)	Gallons per Linear Foot
<u>310</u>	<u>5"</u>	2	0.16
Static Water Level (ft bmp): <u>74.12</u>		4	0.65
Casing Volume (gal): <u>240.7 x3 = 722</u>		5	1.02
Total Volume Purged (gal): <u>747</u>		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
<u>0830</u>	<u>Pump On</u>						
<u>0900</u>	<u>30</u>	<u>8.3</u>	<u>249</u>	<u>7.17</u>	<u>21.9</u>	<u>952</u>	
<u>0920</u>	<u>50</u>	<u>8.3</u>	<u>415</u>	<u>7.19</u>	<u>22.0</u>	<u>955</u>	
<u>0940</u>	<u>70</u>	<u>8.3</u>	<u>581</u>	<u>7.20</u>	<u>21.8</u>	<u>957</u>	
<u>1000</u>	<u>90</u>	<u>8.3</u>	<u>747</u>	<u>7.24</u>	<u>21.8</u>	<u>953</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-16</u>	<u>1000</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

**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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

Additional Comments: 235.8

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-14-15  
 Well ID: BMO-2008-3B Weather: Partly Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Shumway

### WELL DATA

Well Depth (ft bls): <u>260</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>145.24</u> Casing Volume (gal): <u>117 x3 = 351</u> Total Volume Purged (gal): <u>351 540</u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Casing Capacity</th> </tr> <tr> <th style="text-align: center;">Nominal Size (inches)</th> <th style="text-align: center;">Gallons per Linear Foot</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2</td><td style="text-align: center;">0.16</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">0.65</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">1.02</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">1.47</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">2.61</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">4.08</td></tr> </tbody> </table> <p style="text-align: center;">Casing Volume = gallons/foot * water column (feet)</p>	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 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																

### FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
<u>1445</u>	<b>Pump On</b>						
<u>1455</u>	<u>10</u>	<u>27</u>	<u>135</u>	<u>7.26</u>	<u>22.0</u>	<u>639</u>	
<u>1500</u>	<u>15</u>	<u>27</u>	<u>405</u>	<u>7.28</u>	<u>21.8</u>	<u>638</u>	
<u>1505</u>	<u>20</u>	<u>27</u>	<u>540</u>	<u>7.29</u>	<u>21.7</u>	<u>638</u>	
							<b>Pump Off</b>

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

### SAMPLE INFORMATION

**Sample Collection Point:**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-3B</u>	<u>1505</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: \_\_\_\_\_

Additional Comments: 114.71

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Project No: 287030

Client: Freeport Copper Queen Branch

Task No:

Date: 9-8-15

Well ID: BMO-2008-5B

Weather: Sunny

ADWR No:

Sampler: Christopher J. Sherman

WELL DATA

Well Depth (ft bls):	285	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5 1/4	2	0.16
		4	0.65
Static Water Level (ft bmp):	150.38	5	1.02
		6	1.47
Casing Volume (gal):	1322 x3 = 4116	8	2.61
		10	4.08
Total Volume Purged (gal):	675	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
0910	Pump On						
0915	5	27	135	7.11	22.4	765	
0925	15	27	405	7.14	22.2	767	
0935	25	27	675	7.16	22.3	764	
							Pump Off

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

SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2008-5B	0935	PL	250	1	TOC	Ice	X

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 134.6



Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-8-15  
 Well ID: BMO-2008-5M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Gurnea

WELL DATA		Casing Capacity	
Well Depth (ft bls):	Casing Diameter (in):	Nominal Size (inches)	Gallons per Linear Foot
<u>450</u>	<u>5"</u>	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp): <u>151.63</u>		6	1.47
Casing Volume (gal): <u>304.2 x 3 = 912.6</u>		8	2.61
		10	4.08
Total Volume Purged (gal): <u>990</u>	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
<u>0805</u>	Pump On						
<u>0830</u>	<u>25</u>	<u>18</u>	<u>450</u>	<u>7.13</u>	<u>22.9</u>	<u>615</u>	
<u>0850</u>	<u>45</u>	<u>18</u>	<u>810</u>	<u>7.18</u>	<u>23.0</u>	<u>611</u>	
<u>0900</u>	<u>55</u>	<u>18</u>	<u>990</u>	<u>7.19</u>	<u>23.1</u>	<u>615</u>	
							Pump Off

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

**SAMPLE INFORMATION**

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-5M</u>	<u>0900</u>	<u>Pb</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Pcc</u>	<u>Y</u>

**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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 298.3

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Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-8-15  
 Well ID: BMO-2008-6B Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Shuman

WELL DATA		Casing Capacity	
Well Depth (ft bls):	Casing Diameter (in):	Nominal Size (inches)	Gallons per Linear Foot
<u>265</u>	<u>5"</u>	2	0.16
		4	0.65
		5	1.02
		6	1.47
		8	2.61
		10	4.08
Static Water Level (ft bmp):	Casing Volume = gallons/foot * water column (feet)		
<u>195.48</u>			
Casing Volume (gal):			
<u>71 x3 = 213</u>			
Total Volume Purged (gal):			
<u>225</u>			

FIELD SAMPLING DATA							
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
<u>1045</u>	<b>Pump On</b>						
<u>1100</u>	<u>15</u>	<u>5.1</u>	<u>75</u>	<u>7.26</u>	<u>22.3</u>	<u>287</u>	
<u>1115</u>	<u>30</u>	<u>5.1</u>	<u>150</u>	<u>7.21</u>	<u>22.2</u>	<u>280</u>	
<u>1130</u>	<u>45</u>	<u>5.1</u>	<u>225</u>	<u>7.24</u>	<u>22.2</u>	<u>282</u>	
							<b>Pump Off</b>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-6B</u>	<u>1130</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Free</u>	<u>Y</u>

- 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 parameters stabilized.
  - Purged well until field parameters stabilized.
  - Other:

Additional Comments: 69.5

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Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-8-15  
 Well ID: BMO-2008-6M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Shuman

WELL DATA		Casing Capacity	
Well Depth (ft bls):	Casing Diameter (in):	Nominal Size (inches)	Gallons per Linear Foot
<u>450</u>	<u>5"</u>	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp): <u>196.32</u>		6	1.47
		8	2.61
Casing Volume (gal): <u>258.6 x3 = 776</u>		10	4.08
Total Volume Purged (gal): <u>840</u>	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
<u>1000</u>	<u>Pump On</u>						
<u>1010</u>	<u>10</u>	<u>21</u>	<u>210</u>	<u>7.08</u>	<u>22.6</u>	<u>747</u>	
<u>1020</u>	<u>20</u>	<u>21</u>	<u>420</u>	<u>7.11</u>	<u>23.0</u>	<u>746</u>	
<u>1030</u>	<u>30</u>	<u>21</u>	<u>630</u>	<u>7.09</u>	<u>23.0</u>	<u>750</u>	
<u>1040</u>	<u>40</u>	<u>21</u>	<u>840</u>				
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-6M</u>	<u>1040</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Do</u>	<u>✓</u>

WATER LEVEL MEASUREMENT COLLECTION	
<input checked="" type="checkbox"/>	Water level measurement collected.
<input type="checkbox"/>	No water level measurement collected. No access to wellhead/No port in wellhead
<input type="checkbox"/>	No water level measurement collected. Obstruction in well.
<input type="checkbox"/>	No water level measurement collected. Well is pumping.
<input type="checkbox"/>	Other:

WELL PURGING INFORMATION	
<input checked="" type="checkbox"/>	Purged 3 well volumes and field parameters stabilized.
<input type="checkbox"/>	Purged 3 well volumes based on previous water level and field parameters stabilized.
<input type="checkbox"/>	Purged well until field parameters stabilized.
<input type="checkbox"/>	Other:

Additional Comments: 253.6

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Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-14-15  
 Well ID: BMO-2008-7M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christoph L. Swamin

WELL DATA		Casing Capacity	
Well Depth (ft bls):	Casing Diameter (in):	Nominal Size (inches)	Gallons per Linear Foot
<u>670</u>	<u>5.1</u>	2	0.16
		4	0.65
		5	1.02
		6	1.47
		8	2.61
		10	4.08
Static Water Level (ft bmp):	Casing Volume = gallons/foot * water column (feet)		
<u>244.59</u>			
Casing Volume (gal):			
<u>434 x3 = 1302</u>			
Total Volume Purged (gal):			
<u>1365</u>			

FIELD SAMPLING DATA							
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
<u>0825</u>	<u>Pump On</u>						
<u>0850</u>	<u>25</u>	<u>21</u>	<u>525</u>	<u>7.47</u>	<u>23.3</u>	<u>469</u>	
<u>0910</u>	<u>45</u>	<u>21</u>	<u>945</u>	<u>7.50</u>	<u>23.4</u>	<u>470</u>	
<u>0930</u>	<u>65</u>	<u>21</u>	<u>1365</u>	<u>7.51</u>	<u>23.4</u>	<u>469</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-7M</u>	<u>0930</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fa</u>	<u>Y</u>

- 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 parameters stabilized.
  - Purged well until field parameters stabilized.
  - Other:

Additional Comments: 425.4

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-15-15  
 Well ID: BMO-2008-8M Weather: partly cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Skurvy

### WELL DATA

Well Depth (ft bls): <u>1210</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>302.46</u> Casing Volume (gal): <u>925.6 x3 = 2777</u> Total Volume Purged (gal): <u>2816</u>	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
<u>1015</u>	<b>Pump On</b>						
<u>1115</u>	<u>60</u>	<u>17.6</u>	<u>1056</u>	<u>7.31</u>	<u>25.1</u>	<u>541</u>	
<u>1215</u>	<u>120</u>	<u>17.6</u>	<u>2112</u>	<u>7.31</u>	<u>25.0</u>	<u>547</u>	
<u>1245</u>	<u>150</u>	<u>17.6</u>	<u>2640</u>	<u>7.38</u>	<u>25.1</u>	<u>541</u>	
<u>1255</u>	<u>160</u>	<u>17.6</u>	<u>2816</u>	<u>7.35</u>	<u>25.0</u>	<u>541</u>	
							<b>Pump Off</b>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-8M</u>	<u>1255</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 907.5

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-14-15  
 Well ID: BMO-2008-9M Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Sturman

### WELL DATA

Well Depth (ft bls): <u>775</u> Casing Diameter (in): <u>5"</u> Static Water Level (ft bmp): <u>286.34</u> Casing Volume (gal): <u>498.3 x3 = 1495</u> Total Volume Purged (gal): <u>1504</u>	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
<u>1230</u>	<b>Pump On</b>						
<u>1250</u>	<u>20</u>	<u>18.8</u>	<u>376</u>	<u>7.62</u>	<u>24.7</u>	<u>558</u>	
<u>1310</u>	<u>40</u>	<u>18.8</u>	<u>752</u>	<u>7.65</u>	<u>24.8</u>	<u>559</u>	
<u>1330</u>	<u>60</u>	<u>18.8</u>	<u>1128</u>	<u>7.68</u>	<u>24.6</u>	<u>560</u>	
<u>1350</u>	<u>80</u>	<u>18.8</u>	<u>1504</u>	<u>7.68</u>	<u>24.7</u>	<u>558</u>	
							<b>Pump Off</b>

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

### SAMPLE INFORMATION

**Sample Collection Point:**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-9M</u>	<u>1350</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fe</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 488.6

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**Groundwater Sampling Form**

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-14-15  
 Well ID: BMO-2008-116 Weather: Sunny  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Skarner

**WELL DATA**

Well Depth (ft bis): <u>260</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5"</u>	2	0.16
Static Water Level (ft bmp): <u>557.84</u>	4	0.65
Casing Volume (gal): <u>296.1 x 3 = 618.3</u>	5	1.02
Total Volume Purged (gal): <u>640</u>	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
<u>1000</u>							<b>Pump On</b>
<u>1010</u>	<u>10</u>	<u>8</u>	<u>80</u>	<u>7.77</u>	<u>25.2</u>	<u>334</u>	
<u>1030</u>	<u>30</u>	<u>8</u>	<u>240</u>	<u>7.28</u>	<u>25.2</u>	<u>333</u>	
<u>1100</u>	<u>60</u>	<u>8</u>	<u>480</u>	<u>7.75</u>	<u>25.3</u>	<u>334</u>	
<u>1120</u>	<u>80</u>	<u>8</u>	<u>640</u>	<u>7.78</u>	<u>25.3</u>	<u>335</u>	
							<b>Pump Off</b>

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

**SAMPLE INFORMATION**

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2008-116</u>	<u>1120</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fa</u>	<u>Y</u>
<u>Dup 091415</u>	<u>1120</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Fa</u>	<u>Y</u>

**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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 202.1

Duplicate





# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-9-15  
 Well ID: BMO-2010-1M Weather: Partly Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Brown

### WELL DATA

Well Depth (ft bls): <u>350</u> Casing Diameter (in): <u>5.4</u> Static Water Level (ft bmp): <u>211.68</u> Casing Volume (gal): <u>345</u> x3 = <u>1035</u> Total Volume Purged (gal): _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Casing Capacity</th> </tr> <tr> <th style="text-align: center;">Nominal Size (inches)</th> <th style="text-align: center;">Gallons per Linear Foot</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2</td><td style="text-align: center;">0.16</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">0.65</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">1.02</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">1.47</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">2.61</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">4.08</td></tr> </tbody> </table> <p style="text-align: center;">Casing Volume = gallons/foot * water column (feet)</p>	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 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																

### FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
<u>0815</u>	<b>Pump On</b>						
<u>0830</u>	<u>15</u>	<u>10</u>	<u>150</u>	<u>7.58</u>	<u>23.9</u>	<u>724</u>	
<u>0915</u>	<u>60</u>	<u>5</u>	<u>375</u>	<u>7.51</u>	<u>23.9</u>	<u>724</u>	
<u>1015</u>	<u>120</u>	<u>3</u>	<u>555</u>	<u>7.59</u>	<u>24.0</u>	<u>725</u>	
<u>1115</u>	<u>180</u>	<u>3</u>	<u>735</u>	<u>7.54</u>	<u>24.6</u>	<u>729</u>	
<u>1215</u>	<u>240</u>	<u>3</u>	<u>915</u>	<u>7.58</u>	<u>24.3</u>	<u>730</u>	
<u>1255</u>	<u>280</u>	<u>3</u>	<u>1035</u>	<u>7.57</u>	<u>24.2</u>	<u>729</u>	
							<b>Pump Off</b>

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

### SAMPLE INFORMATION

**Sample Collection Point:**

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2010-1M</u>	<u>1255</u>	<u>PL</u>	<u>25</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: \_\_\_\_\_

Additional Comments: 338.2

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 22, 2015
Well ID:	BMO-2010-3B	Weather:	Overcast, 70s
ADWR No:	219970	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	330			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	118.81			4	0.65
				5	1.02
Casing Volume (gal):	215	x3 =	646	6	1.47
				8	2.61
Total Volume Purged (gal):	640			Casing Volume = gallons/foot * water column (feet)	
			10	4.08	

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
7:45 AM	Pump On						
8:05 AM	20m	8	160	7.73	21.7	422.9	
8:25 AM	40m	8	320	7.69	21.7	420.9	
8:45 AM	60m	8	480	7.68	21.8	420.3	
9:05 AM	80m	8	640	7.67	21.8	420.1	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:	Spigot near pressure tanks in shed						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3B	9:09:32	Poly	250mL	1	300.0	NA	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 parameters stabilized.
  - Purged well until field parameters stabilized.
  - Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 22, 2015
Well ID:	BMO-2010-3M	Weather:	Overcast, 80s
ADWR No:	219969	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	532			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	5			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	120.42			6	1.47
			8	2.61	
Casing Volume (gal):	420	x3 =	1259	10	4.08
Total Volume Purged (gal):	1280			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
9:22 AM	Pump On						
9:42 AM	20m	8	160	7.87	22.5	350.8	Transparent, yellow, sulphur odor
10:02 AM	40m	8	320	7.85	23.1	385.8	Transparent, yellow/brown, sulphur odor
10:22 AM	60m	8	480	7.80	23.2	382.7	Clear, sulphur odor
10:42 AM	80m	8	640	7.81	23.3	382.1	Clear, sulphur odor
11:02 AM	100m	8	800	7.80	23.4	382.3	Clear, sulphur odor
11:22 AM	120m	8	960	7.83	23.4	383.5	Clear, sulphur odor
11:42 AM	140m	8	1120	7.76	23.4	383.9	Clear, sulphur odor
12:02 PM	160m	8	1280	7.79	23.5	383.9	Clear, faint sulphur odor
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure tanks in shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2010-3M	12:07:53	Poly	250mL	1	300.0	NA	Y
DUP20150722	1800	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-10-15  
 Well ID: BMO-2012-1M Weather: Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christy & Sherman

**WELL DATA**

Well Depth (ft bls): <u>405</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in): <u>5.11</u>	2	0.16
Static Water Level (ft bmp): <u>221.60</u>	4	0.65
	5	1.02
Casing Volume (gal): <u>187 x3 = 561</u>	6	1.47
	8	2.61
Total Volume Purged (gal): _____	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
<u>1030</u>	<u>Pump On</u>						
<u>1040</u>	<u>10</u>	<u>6</u>	<u>60</u>	<u>7.21</u>	<u>23.3</u>	<u>861</u>	
<u>1100</u>	<u>30</u>	<u>6</u>	<u>180</u>	<u>7.26</u>	<u>23.4</u>	<u>860</u>	
<u>1130</u>	<u>60</u>	<u>6</u>	<u>360</u>	<u>7.28</u>	<u>23.5</u>	<u>859</u>	
<u>1205</u>	<u>95</u>	<u>6</u>	<u>570</u>	<u>7.29</u>	<u>23.3</u>	<u>862</u>	
							<u>Pump Off</u>

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

**SAMPLE INFORMATION**

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>BMO-2012-1M</u>	<u>1205</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>X</u>

**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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: 183.4

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 29, 2015
Well ID:	BMO-2014-1BL	Weather:	Overcast, 70s
ADWR No:	917394	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	366			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	5			4	0.65
		5		1.02	
Static Water Level (ft bmp):	124.22			6	1.47
		8		2.61	
Casing Volume (gal):	247	x3 =	740	10	4.08
Total Volume Purged (gal):	840			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
7:45 AM	Pump On						
8:00 AM	15m	14	210	7.55	22.9	694.9	
8:15 AM	30m	14	420	7.57	22.7	695.6	
8:30 AM	45m	14	630	7.58	22.9	695.4	
8:45 AM	60m	14	840	7.57	22.8	695.0	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-1BL	8:48:12	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 29, 2015
Well ID:	BMO-2014-1BU	Weather:	Overcast, 80s
ADWR No:	917393	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	273	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	124.65	5	1.02
		6	1.47
Casing Volume (gal):	151	8	2.61
	x3 = 454	10	4.08
Total Volume Purged (gal):	450	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
8:55 AM	Pump On						
9:05 AM	10m	15	150	7.57	22.3	744.4	Cloudy
9:15 AM	20m	15	300	7.56	22.1	737.2	Clear
9:25 AM	30m	15	450	7.55	22.3	729.7	Clear
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-1BU	9:29:32	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 29, 2015
Well ID:	BMO-2014-2BL	Weather:	Sunny, 80s
ADWR No:	917452	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	396			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	5			4	0.65
		5		1.02	
Static Water Level (ft bmp):	127.43			6	1.47
		8		2.61	
Casing Volume (gal):	274	x3 =	822	10	4.08
Total Volume Purged (gal):	840			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
10:55 AM	Pump On						
11:10 AM	15m	14	-----				Pump off for 5min
11:15 AM	15m	14	210	7.27	23.1	1208	
11:30 AM	30m	14	420	7.39	22.4	1207	
11:45 AM	45m	14	630	7.38	22.6	1193	
11:45 AM	60m	14	840	7.34	22.5	1191	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BL	12:02:53	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 29, 2015
Well ID:	BMO-2014-2BU	Weather:	Sunny, 80s
ADWR No:	917453	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	276	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	127.49	5	1.02
		6	1.47
Casing Volume (gal):	151	8	2.61
	x3 = 454	10	4.08
Total Volume Purged (gal):	450	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
12:12 PM	Pump On						
12:22 PM	10m	15	150	7.66	22.3	537.8	
12:32 PM	15m	15	300	7.61	22.1	538.2	
12:42 PM	30m	15	450	7.62	22.2	538.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BU	12:46:03	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 29, 2015
Well ID:	BMO-2014-3BL	Weather:	Sunny, 80s
ADWR No:	917527	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	521			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	5			4	
		5		1.02	
Static Water Level (ft bmp):	138.86			6	
		8		1.47	
Casing Volume (gal):	390	x3 =	1169	10	
				4.08	
Total Volume Purged (gal):	1120			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
2:23 PM	Pump On						
2:43 PM	20m	14	280	7.7	23.3	434.6	
3:03 PM	40m	14	560	7.75	23.5	426.9	
3:23 PM	60m	14	840	7.76	23.3	419.3	
3:43 PM	80m	14	1120	7.72	23.1	413.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BL	15:48:24	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 29, 2015
Well ID:	BMO-2014-3BU	Weather:	Sunny, 80s
ADWR No:	917494	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	288	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	140.03	5	1.02
		6	1.47
Casing Volume (gal):	151	8	2.61
	x3 = 453	10	4.08
Total Volume Purged (gal):	420	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
1:45 PM	Pump On						
1:55 PM	10m	14	140	7.53	22.7	475.5	
2:05 PM	15m	14	280	7.60	21.8	473.7	
2:15 PM	30m	14	420	7.62	21.9	471.9	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BU	14:18:41	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	BMO-2014-4B	Weather:	Overcast, 70s
ADWR No:	917620	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	258	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	5	4	0.65
		5	1.02
Static Water Level (ft bmp):	134.27	6	1.47
		8	2.61
Casing Volume (gal):	126	10	4.08
	x3 =		
	379		
Total Volume Purged (gal):	450	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
7:55 AM	Pump On						
8:05 AM	10m	15	150	7.68	21.6	488.5	
8:15 AM	20m	15	300	7.65	21.6	491.9	
8:25 AM	30m	15	450	7.60	21.7	493.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4B	8:28:53	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	BMO-2014-4BL	Weather:	Overcast, 70s
ADWR No:	917619	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	261			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	5			4	
		5		1.02	
Static Water Level (ft bmp):	133.67			6	
		8		2.61	
Casing Volume (gal):	130	x3 =	390	10	
				4.08	
Total Volume Purged (gal):	420			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
8:40 AM	Pump On						
8:50 AM	10m	14	140	7.72	21.9	645.5	Clear, Sulphur odor
9:00 AM	20m	14	280	7.69	21.9	664.8	Clear, Sulphur odor
9:10 AM	30m	14	420	7.66	21.9	669.7	Clear, Faint sulphur odor
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4BL	9:13:07	Poly	250mL	1	300.0	NA	Y
DUP20150723	1800	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	BMO-2015-1B	Weather:	Overcast, 70s
ADWR No:	917622	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	244	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	129.62	5	1.02
		6	1.47
Casing Volume (gal):	117	8	2.61
	x3 = 350	10	4.08
Total Volume Purged (gal):	360	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
10:12 AM	Pump On						
10:20 AM	8m	15	120	7.59	21.7	716.4	
10:28 AM	16m	15	240	7.66	21.8	703.6	
10:36 AM	24m	15	360	7.68	21.7	690.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1B	10:40:06	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	BMO-2015-1BL	Weather:	Partly sunny, 80s
ADWR No:	917621	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	241	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	130.98	5	1.02
		6	1.47
Casing Volume (gal):	112	8	2.61
	x3 = 337	10	4.08
Total Volume Purged (gal):	360	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
11:06 AM	Pump On						
11:14 AM	8m	15	120	7.66	23.0	745.2	
11:22 AM	16m	15	240	7.65	22.3	749.5	
11:30 AM	24m	15	360	7.62	22.3	747.3	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1BL	11:33:45	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Jul 23, 2015
Well ID: BMO-2015-2B	Weather: Overcast, 80s
ADWR No: 917827	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	268	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	149.47	5	1.02
		6	1.47
Casing Volume (gal):	121    x3 =    363	8	2.61
		10	4.08
Total Volume Purged (gal):	364.5	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
12:09 PM	Pump On						
12:18 PM	9m	13.5	121.5	7.26	22.4	878.3	
12:27 PM	18m	13.5	243	7.44	22.0	858.1	
12:36 PM	27m	13.5	364.5	7.47	22.2	847.5	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2B	12:40:42	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	BMO-2015-2BL	Weather:	Overcast , 80s
ADWR No:	917828	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	272			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	5			4	0.65
		5		1.02	
Static Water Level (ft bmp):	148.12			6	1.47
		8		2.61	
Casing Volume (gal):	126	x3 =	379	10	4.08
Total Volume Purged (gal):	405			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
12:51 PM	Pump On						
1:01 PM	10m	13.5	135	7.48	22.1	927.4	Clear, sulphur odor
1:11 PM	20m	13.5	270	7.49	22.1	911.4	Clear, odorless
1:21 PM	30m	13.5	405	7.43	22.1	902.3	Clear, odorless
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2BL	13:25:03	Poly	250mL	1	300.0	NA	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:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Burke	Weather:	Overcast, 80s
ADWR No:	212268	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	781			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	6			4	
		5		1.02	
Static Water Level (ft bmp):	587.06			6	
		8		1.47	
Casing Volume (gal):	285	x3 =	855	10	
				4.08	
Total Volume Purged (gal):				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
3:17 PM	Pump On						
3:22 PM	5			7.78	28.3	479.2	
3:27 PM	10			7.74	27.5	478.9	
3:32 PM	15			7.72	27.4	479.3	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Pressure tank spigot next to 20,000gal storage tank							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Burke	3:36:37 PM	Poly	250mL	1	300.0	NA	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: One grab from tank due to spigot issues

Additional Comments:	from tank.



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	Chambers	Weather:	Partly cloudy, 90s
ADWR No:	629807	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	245	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):		5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):	108	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
4:13 PM	Pump On						
4:16 PM	3m	12.5	37.5	7.38	23.3	445.2	
4:19 PM	6m	12.5	75.0	7.64	22.9	445.8	
4:22 PM	9m	12.5	112.5	7.48	22.7	447.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near wellhead

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Chambers	16:27:50	Poly	250mL	1	300.0	NA	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:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 27, 2015
Well ID:	COB MW-1	Weather:	Sunny, 80s
ADWR No:	903992	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	420			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	8			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	239.83			6	1.47
			8	2.61	
Casing Volume (gal):	470	x3 =	1411	10	4.08
Total Volume Purged (gal):	1400			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
9:30 AM	Pump On						
9:50 AM	20m	10	200	7.18	22.0	1642	
10:10 AM	40m	10	400	7.15	21.5	1762	
10:30 AM	60m	10	600	7.06	21.8	1813	
10:50 AM	80m	10	800	7.08	21.6	1885	
11:10 AM	100m	10	1000	7.05	21.5	1934	
11:30 AM	120m	10	1200	7.00	21.7	1961	
11:50 AM	140m	10	1400	6.96	21.6	1993	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB MW-1	11:55:13	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 27, 2015
Well ID:	COB MW-2	Weather:	Sunny, 70s
ADWR No:	903984	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	162	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	4	2	0.16
		4	0.65
Static Water Level (ft bmp):	130.32	5	1.02
		6	1.47
Casing Volume (gal):	21     x3 =     62	8	2.61
		10	4.08
Total Volume Purged (gal):	90	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
8:25 AM	Pump On						
8:30 AM	5m	6	30	7.50	21.0	512.4	
8:35 AM	10m	6	60	7.56	20.9	512.7	
8:40 AM	15m	6	90	7.57	20.8	514.6	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB MW-2	8:45:45	Poly	250mL	1	300.0	NA	Y
DUP20150727	1800	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Hand-filter

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Jul 27, 2015
Well ID: COB MW-3	Weather: Sunny, 70s
ADWR No: 903823	Sampler: VNH

### WELL DATA

Well Depth (ft bls):	300			Casing Capacity	
				Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	4			2	0.16
				4	0.65
				5	1.02
Static Water Level (ft bmp):	118.39			6	1.47
				8	2.61
Casing Volume (gal):	119	x3 =	356	10	4.08
Total Volume Purged (gal):	378			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
7:35 AM	Pump On						
7:42 AM	7m	18	126	7.64	22.0	559.6	Translucent yellow
7:49 AM	14m	18	252	7.54	21.6	561.2	Clear
7:56 AM	21m	18	378	7.56	21.6	560.3	Clear
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB MW-3	8:00:22 PM	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 27, 2015
Well ID:	COB WL	Weather:	Sunny, 90s
ADWR No:	593116	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	150			Casing Capacity	
Casing Diameter (in):	4			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
				4	0.65
				5	1.02
				6	1.47
Static Water Level (ft bmp):	80.09			8	2.61
Casing Volume (gal):	46	x3 =	137	10	4.08
	Total Volume Purged (gal):			135.7	

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
12:40 PM	Pump On						
12:48 PM	8m	6	48	7.21	22.4	1214	
12:52 PM	12m	6	72				
12:56 PM	16m	1.3	77.2	7.38	22.6	1249	
1:11 PM	31m	1.3	96.7	7.42	22.7	1224	
1:26 PM	46m	1.3	116.2	7.30	22.8	1223	
1:41 PM	61m	1.3	135.7	7.25	22.9	1221	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB WL	13:47:35	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Cooper	Weather:	Partly cloudy, 80s
ADWR No:	623564	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	325	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):		6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):	135	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
4:54 PM	Pump On						
4:59 PM	5m	9	45	7.70	23.0	421.4	
5:04 PM	10m	9	90	7.68	22.7	421.1	
5:09 PM	15m	9	135	7.67	22.7	421.3	
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point: Spigot on North side of house

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Cooper	17:12:17	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:




# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-10-15  
 Well ID: Cooper C Weather: Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Stamm

WELL DATA		
Well Depth (ft bls): <u>220</u>	Casing Capacity	
Casing Diameter (in): <u>6"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>162.14</u>	2	0.16
Casing Volume (gal): <u>85.2 x3 = 255.6</u>	4	0.65
Total Volume Purged (gal): _____	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
<u>1530</u>	<b>Pump On</b>						
<u>1540</u>	<u>10</u>	<u>8.5</u>	<u>85</u>	<u>6.89</u>	<u>22.8</u>	<u>1499</u>	
<u>1550</u>	<u>20</u>	<u>8.5</u>	<u>170</u>	<u>6.85</u>	<u>22.7</u>	<u>1495</u>	
<u>1600</u>	<u>30</u>	<u>8.5</u>	<u>297</u>	<u>6.84</u>	<u>22.8</u>	<u>1997</u>	
							<b>Pump Off</b>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Cooper C</u>	<u>1600</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ia</u>	<u>X</u>

**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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other: \_\_\_\_\_

Additional Comments: Pump shut down several times, field parameters stay stabilized



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	Dodson	Weather:	Partly cloudy, 80s
ADWR No:	644927	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	97.32	5	1.02
		6	1.47
Casing Volume (gal):	151	8	2.61
	x3 = 453	10	4.08
Total Volume Purged (gal):	600	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
3:53 PM	Pump On						
4:03 PM	10m	15	150	7.28	21.5	1861	
4:13 PM	20m	15	300	7.36	21.4	1813	
4:23 PM	30m	15	450	7.30	21.2	1754	
4:33 PM	40m	15	600	7.34	21.1	1716	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Dodson	4:35:26 PM	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 20, 2015
Well ID:	Douglass 791	Weather:	Sunny, 80s
ADWR No:	592791	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	30.86	5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

Additional Comments: WLO

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Jul 20, 2015
Well ID: Douglass 792	Weather: Sunny, 80s
ADWR No: 592792	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	5	4	0.65
		5	1.02
Static Water Level (ft bmp):	82.57	6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

Additional Comments: **WLO**

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 24, 2015
Well ID:	East	Weather:	Partly cloudy, 80s
ADWR No:	599769	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	125			Casing Capacity	
Casing Diameter (in):	6			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	74.64			4	0.65
				5	1.02
Casing Volume (gal):	74	x3 =	222	6	1.47
				8	2.61
Total Volume Purged (gal):	312			Casing Volume = gallons/foot * water column (feet)	
			10	4.08	

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
10:28 AM	Pump On						
10:38 AM	10m	12	120	7.33	21.2	624.1	
10:46 AM	18m	12	216	7.57	21.2	625.7	
10:54 AM	26m	12	312	7.50	21.0	626.5	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
East	10:59:20	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Echave	Weather:	Partly Cloudy, 90s
ADWR No:	219449	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	345	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):	Use 218.41 from 1/18/13		
		6	1.47
		8	2.61
Casing Volume (gal):	186	x3 =	558
		10	4.08
Total Volume Purged (gal):	105		
	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
1:38 PM	Pump On						
1:43 PM	5m	7	35	7.85	28.4	404.3	
1:48 PM	10m	7	70	7.87	28.4	407.7	
1:53 PM	15m	7	105	7.88	28.7	406.8	
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point: Hose spigot between tank and garage							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Echave	13:57:21	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Recent work done at wellhead, no spigot or access to water between wellhead & tank anymore. All access is now downstream of tank. Will adjust protocol for tank sampling now: 15min purge.



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 24, 2015
Well ID:	Eppele 641	Weather:	Sunny, 70s
ADWR No:	805641	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	265	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	8	4	0.65
		5	1.02
Static Water Level (ft bmp):	41.32	6	1.47
		8	2.61
Casing Volume (gal):	584	10	4.08
	x3 = 1752		
Total Volume Purged (gal):	748	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
8:04 AM	Pump On						
8:19 AM	15m	11	165	7.60	21.3	630.0	
8:34 AM	30m	11	330	7.64	21.2	636.9	
8:49 AM	45m	11	495	7.58	21.2	652.6	
9:04 AM	60m	11	660	7.60	21.2	638.1	
9:12 AM	68m	11	748				Pumped dry
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Wellhead spigot					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Eppele 641	9:29:00	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

**Additional Comments:** Pumped dry at 68min, or 748gal. Wait 15min for recharge, then sample because parameters are stable.

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 27, 2015
Well ID:	Franco 383	Weather:	Sunny, 90s
ADWR No:	221383	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	711			Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot		
Casing Diameter (in):	5			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	198.11			6	1.47
			8	2.61	
Casing Volume (gal):	523	x3 =	1569	10	4.08
Total Volume Purged (gal):	540			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
4:00 PM	Pump On						
4:15 PM	15m	12	180	7.55	27.5	1044	
4:30 PM	30m	12	360	7.66	27.3	1045	
4:45 PM	45m	12	540	7.68	27.3	1047	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure tanks in shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Franco 383	16:48:15	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Purge minimum 1 well volume, and stable parameters

Additional Comments:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 4, 2015
Well ID:	Goar Ranch	Weather:	Sunny, 80s
ADWR No:	610695	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	250	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	7	2	0.16
		4	0.65
Static Water Level (ft bmp):	191.74	5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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

## 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: Pumped dry, stable parameters

Additional Comments: WLO

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-10-15  
 Well ID: Hoban Weather: Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Stumm

WELL DATA			Casing Capacity	
Well Depth (ft bls):	<u>300</u>		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	<u>5 1/2</u>		2	0.16
Static Water Level (ft bmp):	<u>170.57</u>		4	0.65
Casing Volume (gal):	<u>131 x 3 = 393</u>		5	1.02
Total Volume Purged (gal):	<u>528</u>		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
<u>1425</u>							Pump On
<u>1435</u>	<u>10</u>	<u>17.6</u>	<u>176</u>	<u>6.83</u>	<u>22.3</u>	<u>1917</u>	
<u>1445</u>	<u>20</u>	<u>17.6</u>	<u>352</u>	<u>6.80</u>	<u>22.1</u>	<u>1920</u>	
<u>1455</u>	<u>30</u>	<u>17.6</u>	<u>528</u>	<u>6.82</u>	<u>22.1</u>	<u>1922</u>	
							Pump Off

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>Hoban</u>	<u>1455</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>X</u>

WATER LEVEL MEASUREMENT COLLECTION
<input checked="" type="checkbox"/> Water level measurement collected. <input type="checkbox"/> No water level measurement collected. No access to wellhead/No port in wellhead <input type="checkbox"/> No water level measurement collected. Obstruction in well. <input type="checkbox"/> No water level measurement collected. Well is pumping. <input type="checkbox"/> Other:

WELL PURGING INFORMATION
<input checked="" type="checkbox"/> Purged 3 well volumes and field parameters stabilized. <input type="checkbox"/> Purged 3 well volumes based on previous water level and field parameters stabilized. <input type="checkbox"/> Purged well until field parameters stabilized. <input type="checkbox"/> Other:

Additional Comments: 179.5

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 31, 2015
Well ID:	Howard 312	Weather:	Sunny, 80s
ADWR No:	221312	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	980			Casing Capacity	
				Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5			2	0.16
				4	0.65
Static Water Level (ft bmp):	210.54			5	1.02
				6	1.47
				8	2.61
Casing Volume (gal):	785	x3 =	2355	10	4.08
Total Volume Purged (gal):	800			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
11:36 AM	Pump On						
11:56 AM	20m	8	160	8.23	24.5	615.2	Clear, odorless
12:16 PM	40m	8	320	8.19	25.5	616.1	
12:36 PM	60m	8	480	8.21	25.8	620.1	
12:56 PM	80m	8	640	8.20	26.9	620.4	
1:16 PM	100m	8	800	8.17	27.4	618.8	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure tank in shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Howard 312	13:22:10	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Purge minimum 1 well volume, and stable parameters

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 31, 2015
Well ID:	Howard NR	Weather:	Overcast, 80s
ADWR No:	NR	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	220			Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot		
		2	0.16		
Casing Diameter (in):	6			4	0.65
		5	1.02		
Static Water Level (ft bmp):	157.58			6	1.47
		8	2.61		
Casing Volume (gal):	92	x3 =	275		
		10	4.08		
Total Volume Purged (gal):	330			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
11:00 AM	Pump On						
11:10 AM	10m	11	110	7.21	22.3	1202	Faint sulphur odor
11:20 AM	20m	11	220	7.24	21.8	1271	Odorless
11:30 AM	30m	11	330	7.16	21.9	1316	Odorless
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Howard NR	11:32:21	Poly	500mL	1	300.0	NA	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 parameters stabilized.

Purged well until field parameters stabilized.

Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	Keefer	Weather:	Sunny, 80s
ADWR No:	209744	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	245			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	6			2	0.16
			4	0.65	
Static Water Level (ft bmp):	140.80			5	1.02
			6	1.47	
Casing Volume (gal):	153	x3 =	459	8	2.61
				10	4.08
Total Volume Purged (gal):	450			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
1:07 PM	Pump On						
1:22 PM	15m	10	150	7.55	23.4	445.1	
1:37 PM	30m	10	300	7.56	22.3	451.7	
1:52 PM	45m	10	450	7.62	22.1	462.2	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Keefer	13:58:30	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


**Q3 LADD Wells  
Depth to Water**

<b>Date</b>	<b>LADD 837</b>	<b>LADD 538</b>	<b>LADD 977</b>	<b>LADD 251</b>	<b>ASLD 435</b>
9/17/2015	264.32	243.05	86.44	216.39	250.17

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 31, 2015
Well ID:	McConnell 265	Weather:	Overcast, 70s
ADWR No:	539265	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	216	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):	163.83	6	1.47
		8	2.61
Casing Volume (gal):	77	10	4.08
	x3 = 230		
Total Volume Purged (gal):	270	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
8:40 AM	Pump On						
8:50 AM	10m	9	90	7.17	21.7	2010	Pale Yellow, sulphur odor
9:00 AM	20m	9	180	7.06	21.8	1979	Clear, sulphur odor
9:10 AM	30m	9	270	7.04	21.9	1970	Clear, sulphur odor
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McConnell 265	9:14:18	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 31, 2015
Well ID:	McConnell 459	Weather:	Partly Cloudy, 80s
ADWR No:	221459	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	863			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
		2		0.16	
Casing Diameter (in):	5			4	0.65
		5		1.02	
Static Water Level (ft bmp):	170.86			6	1.47
		8		2.61	
Casing Volume (gal):	706	x3 =	2118	10	4.08
Total Volume Purged (gal):	780			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
9:18 AM	Pump On						
9:33 AM	15m	13	195	8.19	25.5	444.0	Faint sulphur odor
9:48 AM	30m	13	390	8.16	25.9	445.5	Faint sulphur odor
10:03 AM	45m	13	585	8.13	26.0	453.4	Faint sulphur odor
10:18 AM	60m	13	780	8.13	25.9	453.6	Faint sulphur odor
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure-tanks in shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
McConnell 459	10:22:27	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Purge 1 well volume, stable parameters

Additional Comments:	

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Metzler	Weather:	Partly Cloudy, 80s
ADWR No:	35-71891	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	351	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	293.54	5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

Additional Comments:

**WLO**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Moore	Weather:	Sunny, 90s
ADWR No:	538847	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	220	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):		6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):	330	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
12:28 PM	Pump On						
12:38 PM	10m	11	110	7.45	23.7	446.4	
12:48 PM	20m	11	220	7.59	22.8	445.8	
12:58 PM	30m	11	330	7.61	22.9	446.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Moore	13:01:52	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:




# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 20, 2015
Well ID:	Ness	Weather:	Sunny, 90s
ADWR No:	509127	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	812			Casing Capacity	
Casing Diameter (in):	6			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	553.54			4	0.65
				5	1.02
Casing Volume (gal):	380	x3 =	1139	6	1.47
				8	2.61
Total Volume Purged (gal):	1120			Casing Volume = gallons/foot * water column (feet)	
			10	4.08	

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
1:00 PM	Pump On						
1:20 PM	20m	8	160	7.51	27.5	558.6	
1:40 PM	40m	8	320	7.65	27.2	559.6	
2:00 PM	60m	8	480	7.67	27.6	561.3	
2:20 PM	80m	8	640	7.72	27.9	561.4	
2:40 PM	100m	8	800	7.71	27.5	561.6	
3:00 PM	120m	8	960	7.72	27.3	563.7	
3:20 PM	140m	8	1120	7.75	27.4	560.8	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot on storage tank.					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ness	15:25:42	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 23, 2015
Well ID:	Noteman	Weather:	Partly cloudy, 80s
ADWR No:	212483	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	470	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	Use 327.54 from 2/25/09	5	1.02
		6	1.47
Casing Volume (gal):	145      x3 =      435	8	2.61
		10	4.08
Total Volume Purged (gal):	440	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
2:42 PM	Pump On						
2:54 PM	12m	12	144	6.84	24.3	1414	
3:06 PM	24m	12	288	6.86	24.1	1420	
3:18 PM	36m	12	432	6.87	24.1	1424	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Yard spigot under fake rock							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Noteman	15:24:17	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Sep 28, 2015
Well ID:	NSD-02	Weather:	Sunny, 70s
ADWR No:	527587	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	120	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	12	2	0.16
		4	0.65
Static Water Level (ft bmp):	113.64	5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

Additional Comments: **WLO**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Sep 28, 2015
Well ID:	NSD-03	Weather:	Sunny, 70s
ADWR No:	527586	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	100	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	12	4	0.65
		5	1.02
Static Water Level (ft bmp):	90.65	6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 (S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

Additional Comments: **WLO**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	NWC-02	Weather:	Sunny, 70s
ADWR No:	562944	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	312			Casing Capacity	
Casing Diameter (in):	6			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
				4	0.65
				5	1.02
				6	1.47
Static Water Level (ft bmp):	166.36			8	2.61
Casing Volume (gal):	214	x3 =	642	10	4.08
Total Volume Purged (gal):	762			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
8:42 AM	Pump On						
8:44 AM	2m	127	254	7.52	22.2	442.3	
8:46 AM	4m	127	508	7.64	22.2	436.8	
8:48 AM	6m	127	762	7.62	22.2	436.2	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Hand-filter from wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-02	8:52:03	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Hand-filter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	NWC-03 CAP	Weather:	Sunny, 80s
ADWR No:	627684	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	179	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):	136.88	5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	<b>WLO</b>



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	NWC-04	Weather:	Sunny, 80s
ADWR No:	551849	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	462	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	10	2	0.16
		4	0.65
Static Water Level (ft bmp):		5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):		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
9:40 AM	Pump On						
9:45 AM	5m	18	90	7.45	24.7	943.3	
9:50 AM	10m	18	180	7.57	24.5	937.8	
9:55 AM	15m	18	270	7.60	24.5	935.6	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Hand-filter from wellhead spigot						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
NWC-04	10:05:44	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Hand-filter

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	NWC-06	Weather:	Sunny, 70s
ADWR No:	575700	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	340			Casing Capacity	
Casing Diameter (in):	8			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	160.95			4	0.65
				5	1.02
Casing Volume (gal):	467	x3 =	1402	6	1.47
				8	2.61
Total Volume Purged (gal):	2072			Casing Volume = gallons/foot * water column (feet)	
			10	4.08	

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
8:04 AM	Pump On						
8:06 AM	2m	148	296	7.87	22.4	411.9	
8:10 AM	6m	148	888	7.65	22.5	402.3	
8:14 AM	10m	148	1480	7.59	22.6	405.1	
8:18 AM	14m	148	2072	7.66	22.6	406.5	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Hand-filter from wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-06	8:24:07	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Hand-filter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 20, 2015
Well ID:	Palmer	Weather:	Sunny, 80s
ADWR No:	578819	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	220	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):		6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):	90	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
11:17 AM	Pump On						
11:22 AM	5m	6	30	7.81	25.1	537.9	
11:27 AM	10m	6	60	7.93	25.6	539.9	
11:32 AM	15m	6	90	7.95	25.9	540.1	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot on east side of house

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Palmer	11:34:52	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 27, 2015
Well ID:	Panagakos	Weather:	Sunny, 90s
ADWR No:	35-76413	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	200			Casing Capacity	
Casing Diameter (in):	8			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	160.04			4	0.65
				5	1.02
Casing Volume (gal):	104	x3 =	313	6	1.47
				8	2.61
				10	4.08
Total Volume Purged (gal):	416			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
2:27 PM	Pump On						
2:40 PM	13m	8	104	6.97	23.2	1289	
2:53 PM	26m	8	208	7.04	22.6	1374	
3:06 PM	39m	8	312	7.06	22.0	1423	
3:19 PM	52m	8	416	7.03	22.2	1445	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot ~50ft southeast from well head

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Panagakos	15:27:55	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Dig out valve to allow water to flow from well. When finished, return to original closed position

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Parra	Weather:	Overcast, 80s
ADWR No:	576415	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	355	Casing Capacity		
Casing Diameter (in):	6	Nominal Size (inches)	Gallons per Linear Foot	
		2	0.16	
Static Water Level (ft bmp):	Use 280.99 from 7/20/09	4	0.65	
		5	1.02	
		6	1.47	
		8	2.61	
Casing Volume (gal):	109	x3 =	327	
Total Volume Purged (gal):	324		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
3:52 PM	Pump On						
4:01 PM	9m	12	108	7.33	22.6	1188	
4:10 PM	18m	12	216	7.23	22.2	1194	
4:19 PM	27m	12	324	7.24	22.3	1193	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Parra	16:24:03	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 22, 2015
Well ID:	Pionke 395	Weather:	Overcast, windy
ADWR No:	613395	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	330	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):	156.29	5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):		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 not working, no sample				
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

**Additional Comments:** Pump not working, no sample



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 22, 2015
Well ID:	Pionke 517	Weather:	Overcast, windy
ADWR No:	221517	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	604			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	153.12			4	0.65
				5	1.02
				6	1.47
Casing Volume (gal):	460	x3 =	1380	8	2.61
				10	4.08
Total Volume Purged (gal):	585			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
4:10 PM	Pump On						
4:25 PM	15m	13	195	7.72	23.3	391.5	
4:40 PM	30m	13	390	7.77	23.1	392.9	
4:55 PM	45m	13	585	7.79	23.3	392.1	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure tanks in shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Pionke 517	17:00:03	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Purge minimum 1 well volume, and stable parameters

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	Power 639	Weather:	Partly cloudy, 80s
ADWR No:	222639	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	480	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	294.38	5	1.02
		6	1.47
Casing Volume (gal):	273	8	2.61
	x3 = 818	10	4.08
Total Volume Purged (gal):	825	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
3:45 PM	Pump On						
4:00 PM	15m	11	165	7.37	22.5	933.2	
4:15 PM	30m	11	330	7.40	22.6	974.1	
4:30 PM	45m	11	495	7.43	22.5	1003	
4:45 PM	60m	11	660	7.36	22.3	1012	
5:00 PM	75m	11	825	7.33	22.3	1014	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Power 639	17:04:52	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 21, 2015
Well ID:	Ramirez	Weather:	Sunny, 90s
ADWR No:	216425	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	300			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	6			2	0.16
			4	0.65	
Static Water Level (ft bmp):	164.65			5	1.02
			6	1.47	
Casing Volume (gal):	199	x3 =	597	8	2.61
				10	4.08
Total Volume Purged (gal):	660			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
2:37 PM	Pump On						
2:52 PM	15m	11	165	7.26	24.1	412.4	
3:07 PM	30m	11	330	7.57	23.7	413.0	
3:22 PM	45m	11	495	7.58	23.7	414.5	
3:37 PM	60m	11	660	7.54	23.7	414.6	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ramirez	15:42:40	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Ray	Weather:	Sunny, 80s
ADWR No:	803772	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	100	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):	48.31	5	1.02
		6	1.47
Casing Volume (gal):	135	8	2.61
	x3 = 405	10	4.08
Total Volume Purged (gal):	480	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
8:28 AM	Pump On						
8:43 AM	15m	8	120	7.17	21.4	1371	
8:58 AM	30m	8	240	7.16	21.2	1355	
9:13 AM	45m	8	360	7.15	21.2	1362	
9:28 AM	60m	8	480	7.22	21.4	1360	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ray	9:33:20	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Bees near well, be careful

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	Rogers, E	Weather:	Sunny, 80s
ADWR No:	216018	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	285			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	6			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	155.91			6	1.47
			8	2.61	
Casing Volume (gal):	190	x3 =	569	10	4.08
Total Volume Purged (gal):	576			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
1:26 PM	Pump On						
1:42 PM	16m	12	192	7.62	23.4	428.5	
1:58 PM	32m	12	384	7.54	22.8	430.7	
2:14 PM	48m	12	576	7.57	22.9	430.3	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Rogers, E	14:17:02	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	Ruiz	Weather:	Sunny, 80s
ADWR No:	531770	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	312			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	6			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	299.74			6	1.47
			8	2.61	
Casing Volume (gal):	18	x3 =	54	10	4.08
Total Volume Purged (gal):	60			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
3:01 PM	Pump On						
3:04 PM	3m	4	12	7.13	22.2	863.2	
3:07 PM	6m	4	24	7.23	21.8	865.6	
3:10 PM	9m	4	36	7.21	21.8	865.7	
3:13 PM	12m	4	48	7.22	21.9	868.3	
3:16 PM	15m	4	60	7.20	21.9	865.8	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ruiz	15:19:58	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:




# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 4, 2015
Well ID:	Schwartz	Weather:	Sunny, 90s
ADWR No:	210865	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	305			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	6			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	129.51			6	1.47
			8	2.61	
Casing Volume (gal):	258	x3 =	773	10	4.08
Total Volume Purged (gal):	720			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
1:53 PM	Pump On						
2:08 PM	15m	12	180	7.65	22.9	624.9	
2:23 PM	30m	12	360	7.49	22.7	633.0	
2:38 PM	45m	12	540	7.47	22.7	637.6	
2:53 PM	60m	12	720	7.49	22.5	641.8	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Schwartz	14:58:28	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Sounder still gets a bit stuck at ~26 ft, keep trying,


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 24, 2015
Well ID:	Stephens	Weather:	Partly Cloudy, 80s
ADWR No:	808560	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):		2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	49.71	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: WLO

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 20, 2015
Well ID:	Swan	Weather:	Overcast, windy
ADWR No:	NR	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	98			Casing Capacity	
Casing Diameter (in):	4	Nominal Size (inches)		Gallons per Linear Foot	
		2	4	0.16	0.65
Static Water Level (ft bmp):	33.08	5	6	1.02	1.47
		8	10	2.61	4.08
Casing Volume (gal):	42	x3 =	127		
Total Volume Purged (gal):	180			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
4:02 PM	Pump On						
4:07 PM	5m	9	45	7.29	26.3	480.3	
4:12 PM	10m	9	90	7.43	24.6	476.9	
4:17 PM	15m	9	135	7.45	23.6	477.2	
4:22 PM	20m	9	180	7.45	23.0	491.2	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot on storage tank.

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Swan	16:25:07	Poly	200mL	1	300.0	NA	Y
DUP20150720	1800	Poly	200mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Thompson 151	Weather:	Sunny, 90s
ADWR No:	612151	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	210	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	7	2	0.16
Static Water Level (ft bmp):	167.09	4	0.65
		5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: **WLO**

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Thompson 341	Weather:	Sunny, 90s
ADWR No:	218341	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	285			Casing Capacity	
Casing Diameter (in):	7			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	Use 167.09 from Thompson 151			4	0.65
				5	1.02
				6	1.47
				8	2.61
Casing Volume (gal):	236	x3 =	708	10	4.08
Total Volume Purged (gal):	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						
11:30 AM				7.32	23.5	423.5	
11:35 PM				7.49	22.7	425.4	
11:40 AM				7.50	23.1	425.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot, hand-filter

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Thompson 341	11:45:30	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Intermittent purge as tank is very full

Additional Comments: Owner requested we don't overfill tank during purge: intermittent pumping.

# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-15-15  
 Well ID: TM-7 Weather: Partly Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Shuman

### WELL DATA

		Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Well Depth (ft bls): _____		2	0.16
Casing Diameter (in): _____		4	0.65
		5	1.02
Static Water Level (ft bmp): _____		6	1.47
		8	2.81
Casing Volume (gal): _____ x3 = _____		10	4.08
Total Volume Purged (gal): _____		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
<u>0830</u>	<u>Pump On</u>						
<u>0832</u>	<u>2</u>	<u>10</u>	<u>20</u>	<u>7.17</u>	<u>20.9</u>	<u>645</u>	
<u>0842</u>	<u>-</u>						
<u>0844</u>	<u>4</u>	<u>10</u>	<u>40</u>	<u>7.37</u>	<u>21.2</u>	<u>407</u>	
<u>0854</u>	<u>-</u>						
<u>0856</u>	<u>6</u>	<u>10</u>	<u>60</u>	<u>7.39</u>	<u>21.7</u>	<u>410</u>	
<u>0906</u>	<u>-</u>						
<u>0908</u>	<u>8</u>	<u>10</u>	<u>80</u>	<u>7.36</u>	<u>21.5</u>	<u>411</u>	
							<u>Pump Off</u>

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TM-7</u>	<u>0908</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ja</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: \_\_\_\_\_

TM-7 sampled per Clear Creek method



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 24, 2015
Well ID:	TM-10	Weather:	Sunny, 90s
ADWR No:	522696	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	290			Casing Capacity	
Casing Diameter (in):	4			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	264.53			4	0.65
				5	1.02
				6	1.47
Casing Volume (gal):	17	x3 =	50	8	2.61
				10	4.08
Total Volume Purged (gal):				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
2:18 PM	Pump On						
2:20 PM				7.56	23.0	478.8	
2:30 PM				7.82	22.3	477.2	Cloudy
2:40 PM				7.80	22.9	477.6	Clear
2:50 PM				7.87	22.6	478.8	Clear
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot near pressure tanks in shed						
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
TM-10	14:55:04	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	Wait 10min between readings for recharge
	Hand-Filter



# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-8-15  
 Well ID: TM-15 Weather: Partly Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L Sierra

### WELL DATA

Well Depth (ft bls): <u>325</u> Casing Diameter (in): <u>4"</u> Static Water Level (ft bmp): <u>NA</u> Casing Volume (gal): <u>x3 =</u> Total Volume Purged (gal): <u>420</u>	Casing Capacity	
	Nominal Size (inches)	Gallons per Linear Foot
	2	0.16
	4	0.85
	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
<u>1145</u>							Pump On
<u>1205</u>	<u>20</u>	<u>7</u>	<u>140</u>	<u>7.20</u>	<u>23.2</u>	<u>410</u>	
<u>1225</u>	<u>40</u>	<u>7</u>	<u>280</u>	<u>7.22</u>	<u>22.9</u>	<u>412</u>	
<u>1245</u>	<u>60</u>	<u>7</u>	<u>420</u>	<u>7.19</u>	<u>23.0</u>	<u>411</u>	
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point:

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TM-15</u>	<u>1245</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>PC</u>	<u>Y</u>

### 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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No: 287030 Client: Freeport Copper Queen Branch  
 Task No: \_\_\_\_\_ Date: 9-10-16  
 Well ID: TM-19A Weather: Cloudy  
 ADWR No: \_\_\_\_\_ Sampler: Christopher L. Slawson

WELL DATA		
Well Depth (ft bls): <u>709</u>	Casing Capacity	
Casing Diameter (in): <u>4"</u>	Nominal Size (inches)	Gallons per Linear Foot
Static Water Level (ft bmp): <u>206.48</u>	2	0.16
Casing Volume (gal): <u>321 x3 = 963</u>	4	0.65
Total Volume Purged (gal): <u>1000</u>	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
<u>1300</u>	<u>Pump On</u>						
<u>1315</u>	<u>15</u>	<u>25</u>	<u>375</u>	<u>7.29</u>	<u>24.1</u>	<u>504</u>	
<u>1325</u>	<u>25</u>	<u>25</u>	<u>625</u>	<u>7.30</u>	<u>24.0</u>	<u>503</u>	
<u>1340</u>	<u>40</u>	<u>25</u>	<u>1000</u>	<u>7.31</u>	<u>24.0</u>	<u>502</u>	
							<u>Pump Off</u>

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

SAMPLE INFORMATION							
Sample Collection Point:							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
<u>TM 19A</u>	<u>1340</u>	<u>PL</u>	<u>250</u>	<u>1</u>	<u>300</u>	<u>Ice</u>	<u>Y</u>

- 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 parameters stabilized.
  - Purged well until field parameters stabilized.
  - Other:

Additional Comments: 493.6

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	TVI 236	Weather:	Sunny, 80s
ADWR No:	802236	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	222			Casing Capacity	
		Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):	12			2	0.16
			4	0.65	
			5	1.02	
Static Water Level (ft bmp):	128.31			6	1.47
			8	2.61	
Casing Volume (gal):	550	x3 =	1651	10	4.08
Total Volume Purged (gal):	1500			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
12:30 AM	Pump On						
12:35 AM	5m	100	500	7.37	20.4	524.1	
12:40 AM	10m	100	1000	7.41	20.4	526.0	
12:45 AM	15m	100	1500	7.43	20.5	529.1	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot under green box							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TVI 236	12:51:33	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Hand-filter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	TVI 713	Weather:	Sunny, 80s
ADWR No:	567713	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	8	4	0.65
		5	1.02
Static Water Level (ft bmp):	132.71	6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 µS/cm

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: **WLO**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Jul 30, 2015
Well ID:	TVI 875	Weather:	Sunny, 80s
ADWR No:	568875	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	330	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):		5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):	4500	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
11:40 AM	Pump On						
11:43 AM	3m	500	1500	7.32	22.3	907.6	
11:46 AM	6m	500	3000	7.33	22.2	919.1	
11:49 AM	9m	500	4500	7.35	22.1	915.4	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot under green box

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TVI 875	11:53:45	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 4, 2015
Well ID:	Weed	Weather:	Partly Cloudy, 90s
ADWR No:	544535	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	320	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):		6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):	225	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
3:15 PM	Pump On						
3:20 PM	5m	15	75	7.80	23.1	384.4	
3:25 PM	10m	15	150	7.74	22.0	387.3	
3:30 PM	15m	15	225	7.72	22.0	386.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Yard spigot under fake rock					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Weed	15:32:09	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 4, 2015
Well ID:	Weiskopf 802	Weather:	Sunny, 90s
ADWR No:	641802	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
Casing Diameter (in):	6	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	150.72	4	0.65
		5	1.02
Casing Volume (gal):	72      x3 =      217	6	1.47
		8	2.61
Total Volume Purged (gal):	250	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
11:00 AM	Pump On						
11:10 AM	10m	5	50	7.22	29.1	1140	
11:20 AM	20m	5	100	7.30	26.0	1441	
11:30 AM	30m	5	150	7.19	25.1	1538	
11:40 AM	40m	5	200	7.10	24.7	1566	
11:50 AM	50m	5	250	7.07	24.5	1571	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot off garage, near wellhead

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Weiskopf 802	11:55:42	Poly	250mL	1	300.0	NA	Y
DUP20150804	1800	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 4, 2015
Well ID:	Weiskopf 897	Weather:	Sunny, 90s
ADWR No:	221897	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	1030	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	5	4	0.65
		5	1.02
Static Water Level (ft bmp):	150.31	6	1.47
		8	2.61
Casing Volume (gal):	897	10	4.08
	x3 = 2692		
Total Volume Purged (gal):	840	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
12:00 PM	Pump On						
12:15 PM	15m	14	210	7.92	24.7	386.1	
12:30 PM	30m	14	420	7.88	24.9	386.3	
12:45 PM	45m	14	630	7.94	25.1	385.5	
1:00 PM	60m	14	840	7.89	24.9	385.7	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure tanks in shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Weiskopf 897	13:05:15	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Purge 1 well volume, stable parameters

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Aug 3, 2015
Well ID:	Zander	Weather:	Sunny, 80s
ADWR No:	205126	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	280			Casing Capacity	
Casing Diameter (in):	6			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	150.65			4	0.65
				5	1.02
				6	1.47
Casing Volume (gal):	190	x3 =	570	8	2.61
				10	4.08
Total Volume Purged (gal):	585			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
10:00 AM	Pump On						
10:15 AM	15m	13	195	7.80	22.5	430.4	
10:30 AM	30m	13	390	7.58	22.4	431.2	
10:45 AM	45m	13	585	7.61	22.5	430.3	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Zander	10:50:18	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:

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**Q3**  
**Additional WLs**

<b>Well</b>	<b>Date</b>	<b>SWL</b>
BMO-2008-8B	9/15/2015	300.14
BMO-2008-10GL	9/14/2015	439.93
BMO-2008-10GU	9/14/2015	200.36
BMO-2008-13B	9/15/2015	212.37
BMO-2008-13M	9/15/2015	212.91
BMO-2010-2M	9/14/2015	260.92
TM-02A	9/14/2015	334.23
TM-06 MILLER	9/10/2015	162.94
TM-16	9/9/2015	60.06
TM-42	9/10/2015	219.31

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Anderson 396	Weather:	Sunny, 60s
ADWR No:	613396	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	285	Casing Capacity	
Casing Diameter (in):	8	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	152.39	4	0.65
		5	1.02
Casing Volume (gal):	x3 = 0	6	1.47
		8	2.61
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (µS/cm)

## SAMPLE INFORMATION

Sample Collection Point:	Spigot near pressure tanks in shed						
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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other: None

Additional Comments:	WLO



# ARIZONA WATER COMPANY

## PUMPING LEVEL

APRIL

Division: \_\_\_\_\_

COCHISE COUNTY - BISBEE

PWSID

02-001

OCTOBER

Year: \_\_\_\_\_

2015

WELL # AND NAME	STATIC WATER LEVEL (FT.) (PUMP OFF)	APPROX. LENGTH OF TIME PUMP "OFF" PRIOR TO RECORDING STATIC WATER LEVEL	DYNAMIC WATER LEVEL (FT.) (PUMP ON)	PUMP DISCHARGE (GPM)	APPROX. LENGTH OF TIME PUMP "ON" PRIOR TO RECORDING DYNAMIC WATER LEVEL
#2 - Naco DWR #55-616586	128'	24+ hr	192'	85	2 hr
#3 - Naco Power DWR #55-616585	115'	4	172'	900	1 1/2 hr
#4 - Naco Power Plant DWR #55-616584	129'	4 hr	147'	680	2 hr
#5 - Naco DWR #55-590620	116'	4+	241'	820	2 hr

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2010-3B	Weather:	Partly Cloudy, 70s
ADWR No:	219970	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	330	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	5	4	0.65
		5	1.02
Static Water Level (ft bmp):	118.06	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:	Spigot near pressure tanks in shed						
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: WLO

Additional Comments: WLO

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2010-3M	Weather:	Partly Cloudy, 70s
ADWR No:	219969	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	532	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	5	4	0.65
		5	1.02
Static Water Level (ft bmp):	119.44	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (S/cm)

### SAMPLE INFORMATION

Sample Collection Point: Spigot near pressure tanks in shed

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: WLO

Additional Comments: WLO



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	BMO-2014-1BL	Weather:	Sunny, 50s
ADWR No:	917394	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	366	Casing Capacity	
Casing Diameter (in):	5	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	123.58	4	0.65
		5	1.02
Casing Volume (gal):	247	6	1.47
		8	2.61
		10	4.08
Total Volume Purged (gal):	728	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
7:43 AM	Pump On						
7:56 AM	13m	14	182	7.56	21.5	690.8	
8:09 AM	26m	14	364	7.57	21.7	685.6	
8:22 AM	39m	14	546	7.56	21.4	686.5	
8:35 AM	52m	14	728	7.55	21.6	685.9	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-1BL	8:40:27	Poly	250mL	1	300.0	NA	Y
DUP20151007	1800	Poly	250mL	1	300.0	NA	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:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	BMO-2014-1BU	Weather:	Sunny, 60s
ADWR No:	917393	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	273			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
				4	0.65
				5	1.02
				6	1.47
Static Water Level (ft bmp):	123.97			8	2.61
Casing Volume (gal):	152	x3 =	456	10	4.08
	Total Volume Purged (gal): 420			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
8:45 AM	Pump On						
8:55 AM	10m	14	140	7.53	21.0	740.3	
9:05 AM	20m	14	280	7.54	21.0	734.9	
9:15 AM	30m	14	420	7.51	20.9	728.8	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-1BU	9:19:59	Poly	250mL	1	300.0	NA	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:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	BMO-2014-2BL	Weather:	Sunny, 70s
ADWR No:	917452	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	396	Casing Capacity	
Casing Diameter (in):	5	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	126.90	4	0.65
		5	1.02
Casing Volume (gal):	274	6	1.47
		8	2.61
		10	4.08
Total Volume Purged (gal):	840	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
9:55 AM	Pump On						
10:10 AM	15m	14	210	7.52	21.1	1200	
10:25 AM	30m	14	420	7.38	21.0	1192	
10:40 AM	45m	14	630	7.40	20.8	1190	
10:55 AM	60m	14	840	7.41	20.8	1180	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot in well shed					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BL	10:59:04	Poly	250mL	1	300.0	NA	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:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	BMO-2014-2BU	Weather:	Sunny
ADWR No:	917453	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	276			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	126.94			4	0.65
				5	1.02
				6	1.47
Casing Volume (gal):	152	x3 =	456	8	2.61
				10	4.08
Total Volume Purged (gal):	462			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
11:05 AM	Pump On						
11:16 AM	11m	14	154	7.71	20.3	538.3	
11:27 AM	22m	14	308	7.63	20.5	538.5	
11:38 AM	33m	14	462	7.74	20.6	541.1	
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-2BU	11:42:07	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Generator holds ~2.5 gal of fuel, or ~1.5 hours of use.

**BRING FUEL CAN ON TVI DAYS**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	BMO-2014-3BL	Weather:	Sunny, 70s
ADWR No:	917527	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	521			Casing Capacity	
Casing Diameter (in):	5		Nominal Size (inches)	Gallons per Linear Foot	
			2	0.16	
			4	0.65	
			5	1.02	
			6	1.47	
Static Water Level (ft bmp):	138.51			8	2.61
Casing Volume (gal):	390	x3 =	1170	10	4.08
Total Volume Purged (gal):	1200			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
2:10 PM	Pump On						
2:30 PM	20m	15	300	7.92	21.5	431.7	
2:50 PM	40m	15	600	7.71	21.7	425.0	
3:10 PM	60m	15	900	7.68	21.8	419.3	
3:22 PM	72m	15	1080	--	--	--	Generator Off
3:27 PM	--	--	--	--	--	--	Generator Off
3:35 PM	80m	15	1200	7.64	21.6	415.6	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot in well shed					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BL	15:37:18	Poly	250mL	1	300.0	NA	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: Keep 30W oil on hand for finnick generators

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	BMO-2014-3BU	Weather:	Sunny, 70s
ADWR No:	917494	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	288	Casing Capacity	
Casing Diameter (in):	5	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
		4	0.65
		5	1.02
		6	1.47
Static Water Level (ft bmp):	139.64	8	2.61
Casing Volume (gal):	151	10	4.08
	x3 =	454	
Total Volume Purged (gal):	462	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
1:30 PM	Pump On						
1:41 PM	11m	14	154	7.58	20.6	475.4	
1:52 PM	22m	14	308	7.65	20.4	469.8	
2:03 PM	33m	14	462	7.62	20.4	467.9	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-3BU	14:06:28	Poly	250mL	1	300.0	NA	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:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2014-4B	Weather:	70s, Partly Cloudy
ADWR No:	917620	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	258			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
				4	0.65
				5	1.02
				6	1.47
Static Water Level (ft bmp):	133.74			8	2.61
Casing Volume (gal):	127	x3 =	380	10	4.08
Total Volume Purged (gal):	420			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
8:10 AM	Pump On						
8:20 AM	10m	14	140	7.87	20.9	477.4	
8:30 AM	20m	14	280	7.71	20.7	478.9	
8:40 AM	30m	14	420	7.70	20.5	481.9	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot in well shed					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4B	8:45:31	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2014-4BL	Weather:	Overcast, 70s
ADWR No:	917619	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	261			Casing Capacity	
				Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5			2	0.16
				4	0.65
Static Water Level (ft bmp):	133.16			5	1.02
				6	1.47
Casing Volume (gal):	130	x3 =	391	8	2.61
				10	4.08
Total Volume Purged (gal):	390			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
8:56 AM	Pump On						
9:06 AM	10m	13	130	7.73	21.0	631.2	
9:16 AM	20m	13	260	7.70	21.0	656.7	
9:26 AM	30m	13	390	7.71	21.0	660.4	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2014-4BL	9:31:34	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2015-1B	Weather:	Partly Cloudy, 70s
ADWR No:	917622	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	244			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	129.02			4	0.65
				5	1.02
Casing Volume (gal):	117	x3 =	352	6	1.47
				8	2.61
				10	4.08
Total Volume Purged (gal):	351			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
10:02 AM	Pump On						
10:11 AM	9m	13	117	7.59	20.8	703.2	
10:20 AM	18m	13	234	7.71	20.6	693.2	
10:29 AM	27m	13	351	7.66	20.6	681.9	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed							
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1B	10:33:38	Poly	250mL	1	300.0	NA	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:

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2015-1BL	Weather:	Partly cloudy, 70s
ADWR No:	917621	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	241			Casing Capacity	
Casing Diameter (in):	5			Nominal Size (inches)	Gallons per Linear Foot
				2	0.16
Static Water Level (ft bmp):	130.30			4	0.65
				5	1.02
Casing Volume (gal):	113	x3 =	339	6	1.47
				8	2.61
				10	4.08
Total Volume Purged (gal):	351			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
10:42 AM	Pump On						
10:51 AM	9m	13	117	7.81	20.9	748.3	
11:00 AM	18m	13	234	7.70	20.9	747.4	
11:09 AM	27m	13	351	7.74	20.8	747.3	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot in well shed					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-1BL	11:15:41	Poly	250mL	1	300.0	NA	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:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2015-2B	Weather:	Pertly Cloudy, 70s
ADWR No:	917827	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	268	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5	2	0.16
		4	0.65
Static Water Level (ft bmp):	148.94	5	1.02
		6	1.47
Casing Volume (gal):	121	8	2.61
	x3 = 364	10	4.08
Total Volume Purged (gal):	390	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
12:12 PM	Pump On						
12:22 PM	10m	13	130	7.40	20.8	872.5	
12:32 PM	20m	13	260	7.51	20.6	848.3	
12:42 PM	30m	13	390	7.60	20.9	844.3	
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point: Spigot in well shed

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2B	12:46:56	Poly	250mL	1	300.0	NA	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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other:

Additional Comments:

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	BMO-2015-2BL	Weather:	Partly Cloudy, 70s
ADWR No:	917828	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	272			Casing Capacity	
				Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	5			2	0.16
				4	0.65
				5	1.02
				6	1.47
				8	2.61
Static Water Level (ft bmp):	147.56			10	4.08
Casing Volume (gal):	127	x3 =	381	Casing Volume = gallons/foot * water column (feet)	
Total Volume Purged (gal):	390				

## FIELD SAMPLING DATA

Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comments
12:54 PM	Pump On						
1:04 PM	10m	13	130	7.84	21.1	915.6	Strong sulphur odor
1:14 PM	20m	13	260	7.54	21.3	901.4	Odorless
1:24 PM	30m	13	390	7.54	21.2	890.3	Odorless
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point:		Spigot in well shed					
Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
BMO-2015-2BL	13:29:15	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: \_\_\_\_\_

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# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Oct 7, 2015
Well ID: COB MW-2	Weather: Clear, 50s
ADWR No: 903984	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	162	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	4	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	129.96	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 (µS/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: WLO, No Sample this quarter


# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	COB MW-3	Weather:	Clear, 50s
ADWR No:	903823	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	300	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	4	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	114.37	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 [ S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: WLO, No sample this quarter



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Howard NR	Weather:	Sunny, 60s
ADWR No:	NR	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	220	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):	157.36	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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: No Sample this quarter

Additional Comments: WLO, No Sample this quarter

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# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Oct 8, 2015
Well ID: Keefer	Weather: Sunny, 60s
ADWR No: 209744	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	245	Casing Capacity	
Casing Diameter (in):	6	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	140.21	4	0.65
		5	1.02
Casing Volume (gal):	x3 = 0	6	1.47
		8	2.61
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: No sample this quarter

Additional Comments: WLO, no sample this quarter

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	McConnell 265	Weather:	Sunny, 60s
ADWR No:	539265	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	216	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):	163.64	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (µS/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: WLO, No sample this quarter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Dec 21, 2015
Well ID:	NSD-02	Weather:	Sunny, 50s
ADWR No:	527587	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	120	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	12	4	0.65
		5	1.02
Static Water Level (ft bmp):	112.43	6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.

Purged well until field parameters stabilized.

Other: Pumped dry, stable parameters

Additional Comments: **WLO**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Dec 21, 2015
Well ID:	NSD-03	Weather:	Sunny, 50s
ADWR No:	527586	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	100	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	12	4	0.65
		5	1.02
Static Water Level (ft bmp):	90.97	6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: Pumped dry, stable parameters

Additional Comments: WLO

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Oct 6, 2015
Well ID: NWC-02	Weather: Partly cloudy, 70s
ADWR No: 562944	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	312	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	165.92	5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 µS/cm

## SAMPLE INFORMATION

Sample Collection Point: Hand-filter from wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: WLO, no sample this quarter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	NWC-03 CAP	Weather:	Partly Cloudy, 70s
ADWR No:	627684	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	179	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):		5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: **Unable to get SWL due to obstruction at ~126. Multiple attempts made**



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	NWC-04	Weather:	Windy
ADWR No:	551849	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	462	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	10	4	0.65
		5	1.02
Static Water Level (ft bmp):		6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):		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
4:18 PM	Pump On						
4:25 PM				7.70	22.9	849.2	
4:30 PM				7.52	23.0	852.4	
4:35 PM				7.54	23.2	866.8	
							Pump Off

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

## SAMPLE INFORMATION

Sample Collection Point: Hand-filter from wellhead spigot

Sample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC-04	16:40:03	Poly	250mL	1	300.0	NA	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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Hand-filter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 6, 2015
Well ID:	NWC-06	Weather:	70s, Partly cloudy
ADWR No:	575700	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	340	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	8	4	0.65
		5	1.02
Static Water Level (ft bmp):	160.48	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 [ S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Hand-filter from wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: WLO, no sample this quarter

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Oct 8, 2015
Well ID: Pionke 395	Weather: Sunny, 60s
ADWR No: 613395	Sampler: VNH

### WELL DATA

Well Depth (ft bls):	330	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	156.03	6	1.47
		8	2.61
Casing Volume (gal):	x3 =	10	4.08
Total Volume Purged (gal):	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 not working, no sample				
							Pump Off

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

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments: Pump not working, no sample  
WLO this quarter

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Oct 8, 2015
Well ID: Ramirez	Weather: Sunny, 60s
ADWR No: 216425	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	300	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Casing Diameter (in):	6	4	0.65
		5	1.02
Static Water Level (ft bmp):	164.72	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No Sample this quarter

Additional Comments: WLO, No sample this quarter

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# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Rogers, E	Weather:	Sunny, 60s
ADWR No:	216018	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	285	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	155.55	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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: No sample this quarter

Additional Comments: WLO, No sample this quarter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Schwartz	Weather:	Sunny, 60s
ADWR No:	210865	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	305	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
Static Water Level (ft bmp):	129.34	5	1.02
		6	1.47
Casing Volume (gal):	x3 = 0	8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

### SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: Sounder still gets a bit stuck at ~26 ft, keep trying,  
WLO, No Sample this Quarter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Thompson 151	Weather:	Sunny, 60s
ADWR No:	612151	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	210		Casing Capacity	
Casing Diameter (in):	7		Nominal Size (inches)	Gallons per Linear Foot
			2	0.16
Static Water Level (ft bmp):			4	0.65
			5	1.02
			6	1.47
			8	2.61
Casing Volume (gal):	x3 =	0	10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 (S/cm)

### SAMPLE INFORMATION

Sample Collection Point:

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other:

Additional Comments:	<b>Unable to get water level due to obstruction at 164 ft bmp. Multiple attempts made.</b>



# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 7, 2015
Well ID:	TVI 236	Weather:	Clear, 50s
ADWR No:	802236	Sampler:	VNH

### WELL DATA

Well Depth (ft bls):	222	Casing Capacity	
Casing Diameter (in):	12	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	127.26	4	0.65
		5	1.02
Casing Volume (gal):	x3 = 0	6	1.47
		8	2.61
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 (S/cm)

### SAMPLE INFORMATION

Sample Collection Point: Spigot under green box

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No Sample this quarter

Additional Comments: WLO, No sample this quarter

# Groundwater Sampling Form

Project No: 287030	Client: Freeport Copper Queen Branch
Task No: 1	Date: Oct 7, 2015
Well ID: TVI 713	Weather: Clear, 50s
ADWR No: 567713	Sampler: VNH

## WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	8	2	0.16
		4	0.65
Static Water Level (ft bmp):	132.00	5	1.02
		6	1.47
Casing Volume (gal):	x3 =	8	2.61
		10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 ( S/cm)

## SAMPLE INFORMATION

Sample Collection Point:

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**

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Weiskopf 802	Weather:	Sunny, 60s
ADWR No:	641802	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	200	Casing Capacity	
Casing Diameter (in):	6	Nominal Size (inches)	Gallons per Linear Foot
		2	0.16
Static Water Level (ft bmp):	150.47	4	0.65
		5	1.02
Casing Volume (gal):	x3 = 0	6	1.47
		8	2.61
		10	4.08
Total Volume Purged (gal):	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 0.3 su pH, 2 degrees C, and 100 (S/cm)

## SAMPLE INFORMATION

Sample Collection Point: Spigot off garage, near wellhead

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 parameters stabilized.
- Purged well until field parameters stabilized.
- Other: No sample this quarter

Additional Comments: WLO, No Sample this quarter

# Groundwater Sampling Form

Project No:	287030	Client:	Freeport Copper Queen Branch
Task No:	1	Date:	Oct 8, 2015
Well ID:	Zander	Weather:	Sunny, 60s
ADWR No:	205126	Sampler:	VNH

## WELL DATA

Well Depth (ft bls):	280	Casing Capacity	
		Nominal Size (inches)	Gallons per Linear Foot
Casing Diameter (in):	6	2	0.16
		4	0.65
		5	1.02
Static Water Level (ft bmp):	150.10	6	1.47
		8	2.61
Casing Volume (gal):	x3 = 0	10	4.08
Total Volume Purged (gal):		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 0.3 su pH, 2 degrees C, and 100 µS/cm

## SAMPLE INFORMATION

Sample Collection Point: Wellhead spigot

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 parameters stabilized.  
 Purged well until field parameters stabilized.  
 Other: No sample this quarter

Additional Comments: WLO, No Sample this quarter

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**Q4****Additional WLs for EGWM Map Area**

<b>Well</b>	<b>Date</b>	<b>SWL</b>
BMO-2008-3B	10/21/2015	145.39
BMO-2008-5B	10/21/2015	150.23
BMO-2008-6B	10/21/2015	195.37
COOPER C	10/21/2015	162.17
HOBAN	10/21/2015	170.58
LADD 635	12/15/2015	169.54
LADD 977	12/15/2015	86.81

**APPENDIX B**  
**ANALYTICAL REPORTS**



March 03, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15B0530  
Order Name: New Project 9-29-14

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 02/16/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director



**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0530  
**Date Received:** 02/16/2015

**Order:** New Project 9-29-14

**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15B0530-01	BMO-2014-3BL	Ground Water	02/13/2015 1416

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0530  
**Date Received:** 02/16/2015

**Case Narrative**

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H3 Sample was received and/or analysis requested past holding time.

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15B0530  
 Lab Sample ID: 15B0530-01

Client Sample ID: BMO-2014-3BL  
 Collection Date/Time: 02/13/2015 1416  
 Matrix: Ground Water  
 Order Name: New Project 9-29-14

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	47	4.0		mg/L	1	02/16/2015 1010	02/17/2015 1515	RAD
Magnesium	7.0	3.0		mg/L	1	02/16/2015 1010	02/17/2015 1515	RAD
Potassium	ND	5.0		mg/L	1	02/16/2015 1010	02/17/2015 1515	RAD
Sodium	21	5.0		mg/L	1	02/16/2015 1010	02/17/2015 1515	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.6	0.0	H5	-	1	02/16/2015 1015	02/16/2015 1025	EK
Temperature (°C)	18		H5	-	1	02/16/2015 1015	02/16/2015 1025	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	8.7	1.0		mg/L	1	02/16/2015 0938	02/16/2015 1259	AC
Fluoride	ND	0.50		mg/L	1	02/16/2015 0938	02/16/2015 1259	AC
Nitrogen, Nitrate (As N)	1.2	0.50	H3	mg/L	1	02/16/2015 0938	02/16/2015 1259	AC
Nitrogen, Nitrite (As N)	ND	0.10	H3	mg/L	1	02/16/2015 0938	02/16/2015 1259	AC
Sulfate	7.8	5.0		mg/L	1	02/16/2015 0938	02/16/2015 1259	AC
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO3)	190	2.0		mg/L	1	02/19/2015 1515	02/19/2015 1550	CC
Alkalinity, Carbonate (As CaCO3)	ND	2.0		mg/L	1	02/19/2015 1515	02/19/2015 1550	CC
Alkalinity, Hydroxide (As CaCO3)	ND	2.0		mg/L	1	02/19/2015 1515	02/19/2015 1550	CC
Alkalinity, Total (As CaCO3)	190	2.0		mg/L	1	02/19/2015 1515	02/19/2015 1550	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	410	0.10		µmhos/cm	1	02/25/2015 1020	02/25/2015 1028	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	260	20		mg/L	1	02/17/2015 0815	02/18/2015 1315	CC

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15B0530  
 Date Received: 02/16/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Qual
<b>Batch 1502162 - E 200.7</b>										
<b>Blank (1502162-BLK1)</b>				Prepared: 02/16/2015 Analyzed: 02/17/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1502162-BS1)</b>				Prepared: 02/16/2015 Analyzed: 02/17/2015						
Calcium	9.2	4.0	mg/L	10.00		92	85-115			
Magnesium	9.5	3.0	mg/L	10.00		95	85-115			
Potassium	9.5	5.0	mg/L	10.00		95	85-115			
Sodium	9.7	5.0	mg/L	10.00		97	85-115			
<b>LCS Dup (1502162-BSD1)</b>				Prepared: 02/16/2015 Analyzed: 02/17/2015						
Calcium	9.1	4.0	mg/L	10.00		91	85-115	1	20	
Magnesium	9.4	3.0	mg/L	10.00		94	85-115	0.6	20	
Potassium	9.3	5.0	mg/L	10.00		93	85-115	2	20	
Sodium	9.6	5.0	mg/L	10.00		96	85-115	0.8	20	
<b>Matrix Spike (1502162-MS1)</b>		<b>Source: 15B0530-01</b>		Prepared: 02/16/2015 Analyzed: 02/17/2015						
Calcium	55	4.0	mg/L	10.00	47	76	70-130			
Magnesium	16	3.0	mg/L	10.00	7.0	90	70-130			
Potassium	11	5.0	mg/L	10.00	1.6	91	70-130			
Sodium	30	5.0	mg/L	10.00	21	90	70-130			

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15B0530  
 Date Received: 02/16/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1502156 - E150.1</b>										
<b>Duplicate (1502156-DUP1)</b>		<b>Source: 15B0530-01</b>			Prepared & Analyzed: 02/16/2015					
pH (pH Units)	7.6	0.0	-		7.6			0.5	200	
Temperature (°C)	18		-		18			0.6	200	
<b>Batch 1502185 - SM2540 C</b>										
<b>Duplicate (1502185-DUP1)</b>		<b>Source: 15B0530-01</b>			Prepared: 02/17/2015 Analyzed: 02/18/2015					
Total Dissolved Solids (Residue, Filterable)	250	20	mg/L		260			2	5	
<b>Batch 1502203 - SM2320B</b>										
<b>LCS (1502203-BS1)</b>					Prepared & Analyzed: 02/19/2015					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		99	90-110			
<b>LCS Dup (1502203-BSD1)</b>					Prepared & Analyzed: 02/19/2015					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		98	90-110	0.8	10	
<b>Matrix Spike (1502203-MS1)</b>		<b>Source: 15B0606-01</b>			Prepared & Analyzed: 02/19/2015					
Alkalinity, Total (As CaCO3)	320	2.0	mg/L	250.0	84	94	85-115			
<b>Matrix Spike Dup (1502203-MSD1)</b>		<b>Source: 15B0606-01</b>			Prepared & Analyzed: 02/19/2015					
Alkalinity, Total (As CaCO3)	320	2.0	mg/L	250.0	84	94	85-115	0.6	10	
<b>Batch 1502257 - SM2510 B</b>										
<b>Duplicate (1502257-DUP1)</b>		<b>Source: 15B0530-01</b>			Prepared & Analyzed: 02/25/2015					
Conductivity	400	0.10	µmhos/cm		410			1	10	

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0530  
**Date Received:** 02/16/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1502146 - E300</b>										
<b>Blank (1502146-BLK1)</b>				Prepared & Analyzed: 02/16/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1502146-BS1)</b>				Prepared & Analyzed: 02/16/2015						
Chloride	12	1.0	mg/L	12.50		96	90-110			
Fluoride	2.0	0.50	mg/L	2.000		101	90-110			
Nitrogen, Nitrate (As N)	4.8	0.50	mg/L	5.000		97	90-110			
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500		98	90-110			
Sulfate	12	5.0	mg/L	12.50		99	90-110			
<b>LCS Dup (1502146-BSD1)</b>				Prepared & Analyzed: 02/16/2015						
Chloride	12	1.0	mg/L	12.50		96	90-110	0.05	10	
Fluoride	2.0	0.50	mg/L	2.000		100	90-110	0.8	10	
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		97	90-110	0.4	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		99	90-110	0.7	10	
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.02	10	
<b>Matrix Spike (1502146-MS1)</b>				<b>Source: 15B0530-01</b>		Prepared & Analyzed: 02/16/2015				
Chloride	21	1.0	mg/L	12.50	8.7	97	80-120			
Fluoride	2.1	0.50	mg/L	2.000	0.22	93	80-120			
Nitrogen, Nitrate (As N)	5.9	0.50	mg/L	5.000	1.2	94	80-120			
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500	ND	94	80-120			
Sulfate	20	5.0	mg/L	12.50	7.8	95	80-120			
<b>Matrix Spike Dup (1502146-MSD1)</b>				<b>Source: 15B0530-01</b>		Prepared & Analyzed: 02/16/2015				
Chloride	21	1.0	mg/L	12.50	8.7	97	80-120	0.2	10	
Fluoride	2.1	0.50	mg/L	2.000	0.22	93	80-120	0.5	10	
Nitrogen, Nitrate (As N)	5.9	0.50	mg/L	5.000	1.2	95	80-120	0.5	10	
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500	ND	95	80-120	1	10	
Sulfate	20	5.0	mg/L	12.50	7.8	95	80-120	0.05	10	

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com

TURNER WORK ORDER # WB0538 DATE 2/16/15 PAGE 1 OF 1

PROJECT NAME Exp. GW Monitoring # 287051  
 CONTACT NAME Ben Daigneau + Victoria Hermosilla  
 COMPANY NAME Clear Creek Associates  
 ADDRESS 221 N. Court Ave Ste 101, Tucson, AZ  
 ZIP 85701 PHONE 602-382-3822 EMAIL bdaigneau@clearcreekassociates.com  
 SAMPLER'S SIGNATURE David Pence

NUMBER OF CONTAINERS		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
Base Neutrals	<input type="checkbox"/>	625/8270	<input type="checkbox"/>
Volatile Organics	<input type="checkbox"/>	624	<input type="checkbox"/>
	<input type="checkbox"/>	5242	<input type="checkbox"/>
	<input type="checkbox"/>	8260	<input type="checkbox"/>
	<input type="checkbox"/>	HAAS	<input type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>	Sulfate	<input type="checkbox"/>
NO <sub>3</sub>	<input checked="" type="checkbox"/>	NO <sub>2</sub>	<input type="checkbox"/>
TKN	<input type="checkbox"/>	1664	<input type="checkbox"/>
TPH	<input type="checkbox"/>	Oil & Grease	<input type="checkbox"/>
VOA	<input type="checkbox"/>	TCP Analysis	<input type="checkbox"/>
Sem-VOA	<input type="checkbox"/>	Metals	<input type="checkbox"/>
TCIP	<input type="checkbox"/>	TCIP	<input type="checkbox"/>
Disolved	<input checked="" type="checkbox"/>	RCRA8	<input type="checkbox"/>
Total	<input type="checkbox"/>	Cyanide	<input type="checkbox"/>
Amen.	<input type="checkbox"/>	SDWA-ORGANICS	<input type="checkbox"/>
WAD	<input type="checkbox"/>	SECONDARY	<input type="checkbox"/>
MPN	<input type="checkbox"/>	Coliform	<input type="checkbox"/>
PH	<input type="checkbox"/>	q <sub>1</sub>	<input type="checkbox"/>
q <sub>2</sub>	<input type="checkbox"/>	q <sub>3</sub>	<input type="checkbox"/>
Fecal	<input type="checkbox"/>	Fecal	<input type="checkbox"/>
COD	<input type="checkbox"/>	BOD	<input type="checkbox"/>
TSS	<input type="checkbox"/>		

SAMPLE I.D.	LAB I.D.	DATE	TIME	SAMPLE MATRIX*
BMO-2014-3BL		2/13/15	14:16	GW
BMO-2014-3BL		2/13/15	14:16	GW
BMO-2014-3BL		2/13/15	14:16	GW

1. RELINQUISHED BY: David Pence  
 Signature: [Signature]  
 Printed Name: David Pence  
 Firm: Clear Creek  
 Date/Time: 2/13/15 17:45

2. RECEIVED BY: Ben Daigneau  
 Signature: [Signature]  
 Printed Name: Ben Daigneau  
 Firm: Clear Creek  
 Date/Time: 2/16/15 07:30

3. RELINQUISHED BY: [Signature]  
 Signature: [Signature]  
 Printed Name: Ben Daigneau  
 Firm: Clear Creek  
 Date/Time: 2/16/15 08:00

4. RECEIVED BY: [Signature]  
 Signature: [Signature]  
 Printed Name: Victoria Hermosilla  
 Firm: TURNER LABORATORIES, INC.  
 Date/Time: 2/16/15 08:00

TURNAROUND REQUIREMENTS:  
 Standard (approx. 10 days)\*  
 Next Day 2 Day 5 Day\*  
 Email Preliminary Results  
 \* Working Days

REPORT REQUIREMENTS:  
 I. Routine Report  
 II. Report (includes DUP, MS, MSD, as required, may be charged as samples)  
 III. Date Validation Report (includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:  
 Account Y N  
 P.O. #  
 Bill to:  
 Total Containers 3  
 Temperature 5.4  
 Wet Ice  
 Ambient  
 Blue Ice

SAMPLE RECEIPT:  
 Preservation Confirmation  
 Appropriate Head Space  
 Received Within Hold Time

Compliance Analysis:  Yes  No  
 ADEQ Forms:  Yes  No  
 Mail ADEQ Forms:  Yes  No

SPECIAL INSTRUCTIONS/COMMENTS:  
Please run out of hold time if necessary

# Project Information

## Clear Creek Associates

221 N. Court Ave., Suite 101  
Tucson, AZ 85701

Laboratory PM: Terri Garcia

## JEK ASSOCIATES

Phone:(520) 622-3222

2/16/2015

Fax:(520) 622-4040

---

<b>Project Name:</b>	Exp GW Monitoring	<b>Invoice To:</b>	Clear Creek Associates
<b>Project Number:</b>	New Project 9-29-14	<b>Invoice Bid:</b>	New Project 9-29-14
<b>Client PM:</b>	Ben Daigneau	<b>Invoice Manager:</b>	Tracy Hillman
<b>Comments:</b>	Temperature - NC. All Sulfates will be a 24 hr TAT. Everything else is a 10 day TAT.		

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Analysis	Comment
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Total Dissolved Solids	
Sulfate by Ion Chromatography	
pH	
Nitrite by Ion Chromatography	
Nitrate by Ion Chromatography	
Na by ICP, Dissolved	
Mg by ICP, Dissolved	
Metals Prep ICP	
K by ICP, Dissolved	
IC Prep	
Fluoride by Ion Chromatography	
Conductivity	
Chloride by Ion Chromatography	
Ca by ICP, Dissolved	
Alkalinity	

---





March 11, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15B0751  
Order Name: Exp GW Mon 287051

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 02/26/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0751  
**Date Received:** 02/26/2015

**Order:** Exp GW Mon 287051

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15B0751-01	BMO-2014-3BU	Ground Water	02/24/2015 1545

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0751  
**Date Received:** 02/26/2015

**Case Narrative**

---

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15B0751  
 Lab Sample ID: 15B0751-01

Client Sample ID: BMO-2014-3BU  
 Collection Date/Time: 02/24/2015 1545  
 Matrix: Ground Water  
 Order Name: Exp GW Mon 287051

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	57	4.0		mg/L	1	02/26/2015 1455	03/04/2015 1146	RAD
Magnesium	7.9	3.0		mg/L	1	02/26/2015 1455	03/04/2015 1146	RAD
Potassium	ND	5.0		mg/L	1	02/26/2015 1455	03/04/2015 1146	RAD
Sodium	22	5.0		mg/L	1	02/26/2015 1455	03/04/2015 1146	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.5	0.0	H5	-	1	02/26/2015 1210	02/26/2015 1212	EK
Temperature (°C)	21		H5	-	1	02/26/2015 1210	02/26/2015 1212	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	30	5.0		mg/L	5	02/26/2015 1100	02/27/2015 2156	AC
Fluoride	ND	0.50		mg/L	1	02/26/2015 1100	02/26/2015 1215	AC
Nitrogen, Nitrate (As N)	3.7	0.50		mg/L	1	02/26/2015 1100	02/26/2015 1215	AC
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	02/26/2015 1100	02/26/2015 1215	AC
Sulfate	8.2	5.0		mg/L	1	02/26/2015 1100	02/26/2015 1215	AC
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	180	2.0		mg/L	1	02/26/2015 1510	02/26/2015 1605	CC
Alkalinity, Carbonate (As CaCO <sub>3</sub> )	ND	2.0		mg/L	1	02/26/2015 1510	02/26/2015 1605	CC
Alkalinity, Hydroxide (As CaCO <sub>3</sub> )	ND	2.0		mg/L	1	02/26/2015 1510	02/26/2015 1605	CC
Alkalinity, Total (As CaCO <sub>3</sub> )	180	2.0		mg/L	1	02/26/2015 1510	02/26/2015 1605	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	490	0.10		µmhos/cm	1	03/02/2015 1320	03/02/2015 1322	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	270	20		mg/L	1	03/02/2015 0930	03/03/2015 1650	CC

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15B0751  
 Date Received: 02/26/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503032 - E 200.7</b>										
<b>Blank (1503032-BLK1)</b>				Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1503032-BS1)</b>				Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	9.5	4.0	mg/L	10.00		95	85-115			
Magnesium	9.7	3.0	mg/L	10.00		97	85-115			
Potassium	9.2	5.0	mg/L	10.00		92	85-115			
Sodium	10	5.0	mg/L	10.00		100	85-115			
<b>LCS Dup (1503032-BSD1)</b>				Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	9.4	4.0	mg/L	10.00		94	85-115	2	20	
Magnesium	9.6	3.0	mg/L	10.00		96	85-115	0.5	20	
Potassium	9.1	5.0	mg/L	10.00		91	85-115	2	20	
Sodium	10	5.0	mg/L	10.00		100	85-115	0.2	20	
<b>Matrix Spike (1503032-MS1)</b>		<b>Source: 15C0185-01</b>		Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	87	4.0	mg/L	10.00	78	88	70-130			
Magnesium	20	3.0	mg/L	10.00	11	92	70-130			
Potassium	12	5.0	mg/L	10.00	2.3	93	70-130			
Sodium	42	5.0	mg/L	10.00	33	88	70-130			

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0751  
**Date Received:** 02/26/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1502270 - SM2320B</b>										
<b>LCS (1502270-BS1)</b>				Prepared & Analyzed: 02/26/2015						
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		99	90-110			
<b>LCS Dup (1502270-BSD1)</b>				Prepared & Analyzed: 02/26/2015						
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		99	90-110	0	10	
<b>Matrix Spike (1502270-MS1)</b>				Source: 15B0760-01		Prepared & Analyzed: 02/26/2015				
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	120	100	85-115			
<b>Matrix Spike Dup (1502270-MSD1)</b>				Source: 15B0760-01		Prepared & Analyzed: 02/26/2015				
Alkalinity, Total (As CaCO3)	360	2.0	mg/L	250.0	120	98	85-115	1	10	
<b>Batch 1502275 - E150.1</b>										
<b>Duplicate (1502275-DUP1)</b>				Source: 15B0751-01		Prepared & Analyzed: 02/26/2015				
pH (pH Units)	7.5	0.0	-		7.5			0.5	200	
Temperature (°C)	21		-		21			2	200	
<b>Batch 1503025 - SM2510 B</b>										
<b>Duplicate (1503025-DUP1)</b>				Source: 15B0751-01		Prepared & Analyzed: 03/02/2015				
Conductivity	490	0.10	µmhos/cm		490			0.4	10	
<b>Batch 1503028 - SM2540 C</b>										
<b>Duplicate (1503028-DUP1)</b>				Source: 15B0698-01		Prepared & Analyzed: 03/02/2015				
Total Dissolved Solids (Residue, Filterable)	260	20	mg/L		260			0.8	5	

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15B0751  
**Date Received:** 02/26/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1502253 - E300</b>										
<b>Blank (1502253-BLK1)</b>				Prepared & Analyzed: 02/26/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1502253-BS1)</b>				Prepared & Analyzed: 02/26/2015						
Chloride	12	1.0	mg/L	12.50		95	90-110			
Fluoride	2.1	0.50	mg/L	2.000		104	90-110			
Nitrogen, Nitrate (As N)	4.8	0.50	mg/L	5.000		96	90-110			
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500		96	90-110			
Sulfate	13	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1502253-BSD1)</b>				Prepared & Analyzed: 02/26/2015						
Chloride	12	1.0	mg/L	12.50		95	90-110	0.2	10	
Fluoride	2.1	0.50	mg/L	2.000		103	90-110	0.9	10	
Nitrogen, Nitrate (As N)	4.8	0.50	mg/L	5.000		96	90-110	0.02	10	
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500		97	90-110	0.7	10	
Sulfate	12	5.0	mg/L	12.50		100	90-110	0.3	10	
<b>Matrix Spike (1502253-MS1)</b>				Source: 15B0751-01		Prepared & Analyzed: 02/26/2015				
Fluoride	2.3	0.50	mg/L	2.000	0.25	102	80-120			
Nitrogen, Nitrate (As N)	8.6	0.50	mg/L	5.000	3.7	97	80-120			
Nitrogen, Nitrite (As N)	2.1	0.10	mg/L	2.500	ND	86	80-120			
Sulfate	20	5.0	mg/L	12.50	8.2	96	80-120			
<b>Matrix Spike (1502253-MS2)</b>				Source: 15B0751-01		Prepared & Analyzed: 02/26/2015				
Chloride	18		mg/L	12.50	6.7	89	80-120			
<b>Matrix Spike Dup (1502253-MSD1)</b>				Source: 15B0751-01		Prepared & Analyzed: 02/26/2015				
Fluoride	2.3	0.50	mg/L	2.000	0.25	101	80-120	1	10	
Nitrogen, Nitrate (As N)	8.5	0.50	mg/L	5.000	3.7	96	80-120	0.9	10	
Nitrogen, Nitrite (As N)	2.1	0.10	mg/L	2.500	ND	85	80-120	1	10	
Sulfate	20	5.0	mg/L	12.50	8.2	93	80-120	1	10	
<b>Matrix Spike Dup (1502253-MSD2)</b>				Source: 15B0751-01		Prepared & Analyzed: 02/26/2015				
Chloride	18		mg/L	12.50	6.7	89	80-120	0.4	10	

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 15B0751 DATE \_\_\_\_\_ PAGE 1 OF 1

PROJECT NAME Exp GW Mon # 287051  
 CONTACT NAME Ben Daigneau + Victoria Hermosilla  
 COMPANY NAME Clear Creek Associates  
 ADDRESS 221 N. Court Ave. Ste. 101 Tucson, AZ  
 ZIP 85701 PHONE 622-3222 EMAIL bdaigneau@clearcreekassociates.com  
 SAMPLER'S SIGNATURE [Signature]

NUMBER OF CONTAINERS		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
Base Neutrals	<input type="checkbox"/>	625/8270	
Acids	<input type="checkbox"/>		
Volatile Organics	<input type="checkbox"/>	624	
	<input type="checkbox"/>	524.2	
	<input type="checkbox"/>	8260	
HAAS	<input type="checkbox"/>		
Chloride	<input checked="" type="checkbox"/>		
Sulfate	<input checked="" type="checkbox"/>		
NO <sub>3</sub>	<input checked="" type="checkbox"/>		
NO <sub>2</sub>	<input checked="" type="checkbox"/>		
TKN	<input type="checkbox"/>		
1664	<input type="checkbox"/>		
TPH	<input type="checkbox"/>		
Oil & Grease	<input type="checkbox"/>		
TCP Analysis	<input type="checkbox"/>		
Semi-VOA	<input type="checkbox"/>		
Pest.	<input type="checkbox"/>		
Metals	<input type="checkbox"/>		
Total	<input type="checkbox"/>		
RCRA8	<input checked="" type="checkbox"/>		
Cyanide	<input type="checkbox"/>		
Amen.	<input type="checkbox"/>		
SDWA-NORGANICS	<input type="checkbox"/>		
WAD	<input type="checkbox"/>		
SECONDARY	<input type="checkbox"/>		
Coliform	<input type="checkbox"/>		
PIA	<input type="checkbox"/>		
Fecal	<input type="checkbox"/>		
Turb	<input type="checkbox"/>		
BOD	<input type="checkbox"/>		
TSS	<input type="checkbox"/>		
COD	<input type="checkbox"/>		
pH	<input type="checkbox"/>		
C <sub>6</sub>	<input type="checkbox"/>		
C <sub>10</sub>	<input type="checkbox"/>		
F <sub>Ca, Mg, K, Na</sub>	<input checked="" type="checkbox"/>		
Total Alkalinity as CaCO <sub>3</sub>	<input checked="" type="checkbox"/>		
* See Quote	<input checked="" type="checkbox"/>		

1. RELINQUISHED BY:  
 Signature [Signature]  
 Printed Name Ryan Toomey  
 Firm Clear Creek  
 Date/Time 2/25/15 09:30

2. RECEIVED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

3. RELINQUISHED BY:  
 Signature [Signature]  
 Printed Name Ben Daigneau  
 Firm TURNER LABORATORIES, INC.  
 Date/Time 2/25/15 11:51

4. RECEIVED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

TURNAROUND REQUIREMENTS:  
 Standard (approx. 10 days)\*  
 Next Day 2 Day 5 Day\*  
 Email Preliminary Results  
 \* Working Days

REPORT REQUIREMENTS:  
 I. Routine Report  
 II. Report (includes DUP, MS, MSD, as required, may be charged as samples)  
 III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:  
 Account Y \_\_\_ N \_\_\_  
 P.O. # \_\_\_\_\_  
 Bill to: \_\_\_\_\_

SAMPLE RECEIPT:  
 Total Containers 3  
 Temperature 2.9  
 Wet Ice  
 Ambient  
 Blue Ice

\* LEGEND  
 SAMPLE MATRIX  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

Compliance Analysis:  Yes  No  
 ADEQ Forms:  Yes  No  
 Mail ADEQ Forms:  Yes  No

Custody Seals   
 Container Intact   
 COC / Labels Agree

Preservation Confirmation   
 Appropriate Head Space   
 Received Within Hold Time





March 13, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15C0185  
Order Name: 287051

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/03/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0185  
**Date Received:** 03/03/2015

**Order:** 287051

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15C0185-01	BMO-2014-4BL	Ground Water	03/01/2015 1520

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0185  
**Date Received:** 03/03/2015

**Case Narrative**

---

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15C0185  
 Lab Sample ID: 15C0185-01

Client Sample ID: BMO-2014-4BL  
 Collection Date/Time: 03/01/2015 1520  
 Matrix: Ground Water  
 Order Name: 287051

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	78	4.0		mg/L	1	03/03/2015 1145	03/04/2015 1150	RAD
Magnesium	11	3.0		mg/L	1	03/03/2015 1145	03/04/2015 1150	RAD
Potassium	ND	5.0		mg/L	1	03/03/2015 1145	03/04/2015 1150	RAD
Sodium	33	5.0		mg/L	1	03/03/2015 1145	03/04/2015 1150	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.5	0.0	H5	-	1	03/03/2015 1140	03/03/2015 1315	EK
Temperature (°C)	21		H5	-	1	03/03/2015 1140	03/03/2015 1315	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	19	1.0		mg/L	1	03/03/2015 1115	03/03/2015 1202	MR
Fluoride	ND	0.50		mg/L	1	03/03/2015 1115	03/03/2015 1202	MR
Nitrogen, Nitrate (As N)	2.4	0.50		mg/L	1	03/03/2015 1115	03/03/2015 1202	MR
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	03/03/2015 1115	03/03/2015 1202	MR
Sulfate	170	50		mg/L	10	03/06/2015 1130	03/06/2015 1213	MR
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	170	2.0		mg/L	1	03/05/2015 1520	03/05/2015 1610	CC
Alkalinity, Carbonate (As CaCO <sub>3</sub> )	ND	2.0		mg/L	1	03/05/2015 1520	03/05/2015 1610	CC
Alkalinity, Hydroxide (As CaCO <sub>3</sub> )	ND	2.0		mg/L	1	03/05/2015 1520	03/05/2015 1610	CC
Alkalinity, Total (As CaCO <sub>3</sub> )	170	2.0		mg/L	1	03/05/2015 1520	03/05/2015 1610	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	700	0.10		µmhos/cm	1	03/06/2015 1230	03/06/2015 1234	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	450	20		mg/L	1	03/05/2015 0830	03/06/2015 1220	CC

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0185  
**Date Received:** 03/03/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503032 - E 200.7</b>										
<b>Blank (1503032-BLK1)</b>				Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1503032-BS1)</b>				Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	9.5	4.0	mg/L	10.00		95	85-115			
Magnesium	9.7	3.0	mg/L	10.00		97	85-115			
Potassium	9.2	5.0	mg/L	10.00		92	85-115			
Sodium	10	5.0	mg/L	10.00		100	85-115			
<b>LCS Dup (1503032-BSD1)</b>				Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	9.4	4.0	mg/L	10.00		94	85-115	2	20	
Magnesium	9.6	3.0	mg/L	10.00		96	85-115	0.5	20	
Potassium	9.1	5.0	mg/L	10.00		91	85-115	2	20	
Sodium	10	5.0	mg/L	10.00		100	85-115	0.2	20	
<b>Matrix Spike (1503032-MS1)</b>		<b>Source: 15C0185-01</b>		Prepared: 03/03/2015 Analyzed: 03/04/2015						
Calcium	87	4.0	mg/L	10.00	78	88	70-130			
Magnesium	20	3.0	mg/L	10.00	11	92	70-130			
Potassium	12	5.0	mg/L	10.00	2.3	93	70-130			
Sodium	42	5.0	mg/L	10.00	33	88	70-130			

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15C0185  
 Date Received: 03/03/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503038 - E150.1</b>										
<b>Duplicate (1503038-DUP1)</b>		<b>Source: 15C0185-01</b>			<b>Prepared &amp; Analyzed: 03/03/2015</b>					
pH (pH Units)	7.6	0.0	-		7.5			0.4	200	
Temperature (°C)	21		-		21			1	200	
<b>Batch 1503058 - SM2320B</b>										
<b>LCS (1503058-BS1)</b>					<b>Prepared &amp; Analyzed: 03/05/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		99	90-110			
<b>LCS Dup (1503058-BSD1)</b>					<b>Prepared &amp; Analyzed: 03/05/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		98	90-110	0.8	10	
<b>Matrix Spike (1503058-MS1)</b>		<b>Source: 15C0284-02</b>			<b>Prepared &amp; Analyzed: 03/05/2015</b>					
Alkalinity, Total (As CaCO3)	330	2.0	mg/L	250.0	92	97	85-115			
<b>Matrix Spike Dup (1503058-MSD1)</b>		<b>Source: 15C0284-02</b>			<b>Prepared &amp; Analyzed: 03/05/2015</b>					
Alkalinity, Total (As CaCO3)	340	2.0	mg/L	250.0	92	98	85-115	1	10	
<b>Batch 1503059 - SM2540 C</b>										
<b>Duplicate (1503059-DUP1)</b>		<b>Source: 15C0267-01</b>			<b>Prepared: 03/05/2015 Analyzed: 03/06/2015</b>					
Total Dissolved Solids (Residue, Filterable)	91	20	mg/L		90			1	5	
<b>Batch 1503072 - SM2510 B</b>										
<b>Duplicate (1503072-DUP1)</b>		<b>Source: 15C0185-01</b>			<b>Prepared &amp; Analyzed: 03/06/2015</b>					
Conductivity	700	0.10	µmhos/cm		700			0.4	10	

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0185  
**Date Received:** 03/03/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503017 - E300</b>										
<b>Blank (1503017-BLK1)</b>				Prepared & Analyzed: 03/03/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
<b>LCS (1503017-BS1)</b>				Prepared & Analyzed: 03/03/2015						
Chloride	12	1.0	mg/L	12.50		96	90-110			
Fluoride	1.9	0.50	mg/L	2.000		94	90-110			
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		98	90-110			
Nitrogen, Nitrite (As N)	2.6	0.10	mg/L	2.500		104	90-110			
<b>LCS Dup (1503017-BSD1)</b>				Prepared & Analyzed: 03/03/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110	1	10	
Fluoride	1.9	0.50	mg/L	2.000		95	90-110	1	10	
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000		99	90-110	1	10	
Nitrogen, Nitrite (As N)	2.7	0.10	mg/L	2.500		106	90-110	2	10	
<b>Matrix Spike (1503017-MS1)</b>		<b>Source: 15C0015-01</b>		Prepared & Analyzed: 03/03/2015						
Fluoride	2.5	0.50	mg/L	2.000	0.39	106	80-120			
<b>Matrix Spike (1503017-MS3)</b>		<b>Source: 15C0015-01</b>		Prepared & Analyzed: 03/03/2015						
Chloride	14		mg/L	12.50	3.2	90	80-120			
Nitrogen, Nitrate (As N)	5.1		mg/L	5.000	0.14	100	80-120			
Nitrogen, Nitrite (As N)	2.5		mg/L	2.500	ND	101	80-120			
<b>Matrix Spike Dup (1503017-MSD1)</b>		<b>Source: 15C0015-01</b>		Prepared & Analyzed: 03/03/2015						
Fluoride	2.5	0.50	mg/L	2.000	0.39	107	80-120	0.9	10	
<b>Matrix Spike Dup (1503017-MSD3)</b>		<b>Source: 15C0015-01</b>		Prepared & Analyzed: 03/03/2015						
Chloride	15		mg/L	12.50	3.2	91	80-120	0.6	10	
Nitrogen, Nitrate (As N)	5.1		mg/L	5.000	0.14	100	80-120	0.3	10	
Nitrogen, Nitrite (As N)	2.6		mg/L	2.500	ND	102	80-120	1	10	
<b>Batch 1503061 - E300</b>										
<b>Blank (1503061-BLK1)</b>				Prepared & Analyzed: 03/06/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1503061-BS1)</b>				Prepared & Analyzed: 03/06/2015						
Sulfate	12	5.0	mg/L	12.50		95	90-110			
<b>LCS Dup (1503061-BSD1)</b>				Prepared & Analyzed: 03/06/2015						
Sulfate	12	5.0	mg/L	12.50		96	90-110	1	10	
<b>Matrix Spike (1503061-MS2)</b>		<b>Source: 15C0197-01</b>		Prepared & Analyzed: 03/06/2015						
Sulfate	22		mg/L	12.50	10	95	80-120			
<b>Matrix Spike (1503061-MS3)</b>		<b>Source: 15C0312-01RE1</b>		Prepared: 03/06/2015 Analyzed: 03/09/2015						
Sulfate	19		mg/L	12.50	6.5	98	80-120			
<b>Matrix Spike Dup (1503061-MSD2)</b>		<b>Source: 15C0197-01</b>		Prepared & Analyzed: 03/06/2015						
Sulfate	22		mg/L	12.50	10	96	80-120	0.3	10	

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0185  
**Date Received:** 03/03/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503061 - E300</b>										
<b>Matrix Spike Dup (1503061-MSD3)</b>		<b>Source: 15C0312-01RE1</b>			Prepared: 03/06/2015 Analyzed: 03/09/2015					
Sulfate	19		mg/L	12.50	6.5	98	80-120	0.2	10	



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com

TURNER WORK ORDER # 150185 DATE 3/3/15 PAGE 1 OF 1

PROJECT NAME Exp GW Monitoring # 287051  
 CONTACT NAME Ben Daigneau + Victoria Hermosilla  
 COMPANY NAME Clear Creek Associates  
 ADDRESS 221 N. Court Ave. Ste. 101 Tucson, AZ  
 ZIP 85701 PHONE 622-3222 EMAIL bdaigneau@clearcreekassociates.com  
 SAMPLER'S SIGNATURE \_\_\_\_\_

NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	
3	<input type="checkbox"/> Acids	<input type="checkbox"/> Volatile Organics
	<input type="checkbox"/> Base Neutrals	<input type="checkbox"/> 624
	<input type="checkbox"/> 625/8270	<input type="checkbox"/> 524.2
	<input type="checkbox"/> TTHMS	<input type="checkbox"/> 8260
	<input type="checkbox"/> HAAS	<input type="checkbox"/> Chloride
	<input type="checkbox"/> Sulfate	<input checked="" type="checkbox"/> NO <sub>3</sub>
	<input type="checkbox"/> Resistivity	<input checked="" type="checkbox"/> NO <sub>2</sub>
	<input type="checkbox"/> TKN	<input type="checkbox"/> TPH
	<input type="checkbox"/> 1664	<input type="checkbox"/> Oil & Grease
	<input type="checkbox"/> TCP Analysis	<input type="checkbox"/> YOA
	<input type="checkbox"/> Semi-VOA	<input type="checkbox"/> TCP
	<input type="checkbox"/> Metals	<input type="checkbox"/> Disolved
	<input type="checkbox"/> Total	<input type="checkbox"/> RCRAB
	<input type="checkbox"/> Crystallinity	<input type="checkbox"/> Amen.
	<input type="checkbox"/> WAD	<input type="checkbox"/> SDMA/NORGANICS
	<input type="checkbox"/> SECONDARY	<input type="checkbox"/> PRIMARY
	<input type="checkbox"/> Coliform	<input type="checkbox"/> MPN
	<input type="checkbox"/> FIA	<input type="checkbox"/> pH
	<input type="checkbox"/> Fecal	<input type="checkbox"/> Cl <sub>2</sub>
	<input type="checkbox"/> Turb	<input type="checkbox"/> COD
	<input type="checkbox"/> BOD	<input type="checkbox"/> TSS
		<input checked="" type="checkbox"/> * See Quote

1. RELINQUISHED BY:	2. RECEIVED BY:	3. RECEIVED BY:	TURNAROUND REQUIREMENTS:	REPORT REQUIREMENTS:	INVOICE INFORMATION:	SAMPLE RECEIPT:
Signature: _____ Printed Name: <u>Ryan Toomey</u> Firm: <u>Clear Creek</u> Date/Time: <u>3/2/15 11:15</u>	Signature: _____ Printed Name: _____ Firm: <u>Fetes</u> Date/Time: _____	Signature: _____ Printed Name: _____ Firm: <u>TURNER LABORATORIES, INC.</u> Date/Time: <u>3/2/15 10:57</u>	Standard (approx. 10 days)* Next Day 2 Day 5 Day* Email Preliminary Results * Working Days	i. Routine Report ii. Report (includes DUP, MS, MSD, as required, may be charged as samples) iii. Date Validation Report (Includes All Raw Data) Add 10% to invoice	Account Y N P.O. # _____ Bill to: _____ Temperature _____ <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ambient <input type="checkbox"/> Blue Ice	Total Containers <u>3</u> Temperature <u>4.4</u>

1. RELINQUISHED BY:	2. RECEIVED BY:	3. RECEIVED BY:	TURNAROUND REQUIREMENTS:	REPORT REQUIREMENTS:	INVOICE INFORMATION:	SAMPLE RECEIPT:
Signature: _____ Printed Name: <u>Fedex</u> Firm: _____ Date/Time: _____	Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	* LEGEND SAMPLE MATRIX DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER	Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seals <input type="checkbox"/> Container Intact <input checked="" type="checkbox"/> COC / Labels Agree <input checked="" type="checkbox"/>	Preservation Confirmation <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/>



March 20, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

RE: Exp GW Monitoring

Work Order No.: 15C0312  
Order Name: Exp GW Monitoring  
287051

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/06/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0312  
**Date Received:** 03/06/2015

**Order:** Exp GW Monitoring 287051

**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15C0312-01	BMO-2014-4B	Ground Water	03/04/2015 1512

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0312  
**Date Received:** 03/06/2015

**Case Narrative**

---

H3 Sample was received and/or analysis requested past holding time.

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

N4 The Minimum Reporting Limit (MRL) verification check did not meet laboratory acceptance limits.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0312  
**Lab Sample ID:** 15C0312-01

**Client Sample ID:** BMO-2014-4B  
**Collection Date/Time:** 03/04/2015 1512  
**Matrix:** Ground Water  
**Order Name:** Exp GW Monitoring 287051

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	59	4.0		mg/L	1	03/06/2015 1655	03/17/2015 0938	RAD
Magnesium	8.7	3.0		mg/L	1	03/06/2015 1655	03/17/2015 0939	RAD
Potassium	ND	5.0		mg/L	1	03/06/2015 1655	03/17/2015 0938	RAD
Sodium	29	5.0		mg/L	1	03/06/2015 1655	03/17/2015 0939	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.7	0.0	H5	-	1	03/06/2015 1600	03/06/2015 1607	EK
Temperature (°C)	23		H5	-	1	03/06/2015 1600	03/06/2015 1607	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	19	1.0		mg/L	1	03/06/2015 1130	03/06/2015 2203	MR
Fluoride	ND	0.50		mg/L	1	03/06/2015 1130	03/06/2015 2203	MR
Nitrogen, Nitrate (As N)	2.4	0.50	H3	mg/L	1	03/06/2015 1130	03/06/2015 2203	MR
Nitrogen, Nitrite (As N)	ND	0.10	H3, N4	mg/L	1	03/06/2015 1130	03/06/2015 2203	MR
Sulfate	65	25		mg/L	5	03/06/2015 1130	03/09/2015 1403	MR
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO3)	170	2.0		mg/L	1	03/13/2015 1435	03/13/2015 1515	CC
Alkalinity, Carbonate (As CaCO3)	ND	2.0		mg/L	1	03/13/2015 1435	03/13/2015 1515	CC
Alkalinity, Hydroxide (As CaCO3)	ND	2.0		mg/L	1	03/13/2015 1435	03/13/2015 1515	CC
Alkalinity, Total (As CaCO3)	170	2.0		mg/L	1	03/13/2015 1435	03/13/2015 1515	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	530	0.10		µmhos/cm	1	03/06/2015 1600	03/06/2015 1605	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	330	20		mg/L	1	03/11/2015 0810	03/12/2015 1230	CC

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0312  
**Date Received:** 03/06/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503163 - E 200.7</b>										
<b>Blank (1503163-BLK1)</b>				Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1503163-BS1)</b>				Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	9.7	4.0	mg/L	10.00		97	85-115			
Magnesium	9.9	3.0	mg/L	10.00		99	85-115			
Potassium	9.4	5.0	mg/L	10.00		94	85-115			
Sodium	10	5.0	mg/L	10.00		104	85-115			
<b>LCS Dup (1503163-BSD1)</b>				Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	9.8	4.0	mg/L	10.00		98	85-115	1	20	
Magnesium	10	3.0	mg/L	10.00		100	85-115	0.1	20	
Potassium	9.4	5.0	mg/L	10.00		94	85-115	0.1	20	
Sodium	10	5.0	mg/L	10.00		102	85-115	2	20	
<b>Matrix Spike (1503163-MS1)</b>		<b>Source: 15C0514-01</b>		Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	96	4.0	mg/L	10.00	91	45	70-130			M3
Magnesium	22	3.0	mg/L	10.00	13	90	70-130			
Potassium	12	5.0	mg/L	10.00	2.4	95	70-130			
Sodium	44	5.0	mg/L	10.00	37	75	70-130			

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0312  
**Date Received:** 03/06/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503072 - SM2510 B</b>										
<b>Duplicate (1503072-DUP1)</b>		<b>Source: 15C0185-01</b>			Prepared & Analyzed: 03/06/2015					
Conductivity	700	0.10	µmhos/cm		700			0.4	10	
<b>Batch 1503080 - E150.1</b>										
<b>Duplicate (1503080-DUP1)</b>		<b>Source: 15C0312-01</b>			Prepared & Analyzed: 03/06/2015					
pH (pH Units)	7.7	0.0	-		7.7			0.3	200	
Temperature (°C)	24		-		23			8	200	
<b>Batch 1503114 - SM2540 C</b>										
<b>Duplicate (1503114-DUP1)</b>		<b>Source: 15C0284-01</b>			Prepared: 03/11/2015 Analyzed: 03/12/2015					
Total Dissolved Solids (Residue, Filterable)	89	20	mg/L		91			2	5	
<b>Batch 1503154 - SM2320B</b>										
<b>LCS (1503154-BS1)</b>					Prepared & Analyzed: 03/13/2015					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L		250.0		100	90-110		
<b>LCS Dup (1503154-BSD1)</b>					Prepared & Analyzed: 03/13/2015					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L		250.0		101	90-110	0.8	10
<b>Matrix Spike (1503154-MS1)</b>		<b>Source: 15C0386-01</b>			Prepared & Analyzed: 03/13/2015					
Alkalinity, Total (As CaCO3)	350	2.0	mg/L		250.0	110	96	85-115		
<b>Matrix Spike Dup (1503154-MSD1)</b>		<b>Source: 15C0386-01</b>			Prepared & Analyzed: 03/13/2015					
Alkalinity, Total (As CaCO3)	350	2.0	mg/L		250.0	110	95	85-115	0.6	10

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0312  
**Date Received:** 03/06/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503061 - E300</b>										
<b>Blank (1503061-BLK1)</b>										
Prepared & Analyzed: 03/06/2015										
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1503061-BS1)</b>										
Prepared & Analyzed: 03/06/2015										
Chloride	12	1.0	mg/L	12.50		94	90-110			
Fluoride	1.9	0.50	mg/L	2.000		97	90-110			
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000		95	90-110			
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		98	90-110			
Sulfate	12	5.0	mg/L	12.50		95	90-110			
<b>LCS Dup (1503061-BSD1)</b>										
Prepared & Analyzed: 03/06/2015										
Chloride	12	1.0	mg/L	12.50		94	90-110	0.6	10	
Fluoride	2.0	0.50	mg/L	2.000		98	90-110	0.7	10	
Nitrogen, Nitrate (As N)	4.8	0.50	mg/L	5.000		95	90-110	0.7	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		100	90-110	1	10	
Sulfate	12	5.0	mg/L	12.50		96	90-110	1	10	
<b>Matrix Spike (1503061-MS1)</b>										
Source: 15C0312-01 Prepared & Analyzed: 03/06/2015										
Fluoride	2.1	0.50	mg/L	2.000	0.28	91	80-120			
Nitrogen, Nitrate (As N)	7.0	0.50	mg/L	5.000	2.4	90	80-120			
Nitrogen, Nitrite (As N)	2.2	0.10	mg/L	2.500	ND	88	80-120			
<b>Matrix Spike (1503061-MS2)</b>										
Source: 15C0197-01 Prepared & Analyzed: 03/06/2015										
Chloride	12		mg/L	12.50	0.39	91	80-120			
Sulfate	22		mg/L	12.50	10	95	80-120			
<b>Matrix Spike (1503061-MS3)</b>										
Source: 15C0312-01RE1 Prepared: 03/06/2015 Analyzed: 03/09/2015										
Sulfate	19		mg/L	12.50	6.5	98	80-120			
<b>Matrix Spike Dup (1503061-MSD1)</b>										
Source: 15C0312-01 Prepared & Analyzed: 03/06/2015										
Fluoride	2.2	0.50	mg/L	2.000	0.28	94	80-120	3	10	
Nitrogen, Nitrate (As N)	7.1	0.50	mg/L	5.000	2.4	94	80-120	2	10	
Nitrogen, Nitrite (As N)	2.3	0.10	mg/L	2.500	ND	92	80-120	5	10	
<b>Matrix Spike Dup (1503061-MSD2)</b>										
Source: 15C0197-01 Prepared & Analyzed: 03/06/2015										
Chloride	12		mg/L	12.50	0.39	92	80-120	0.7	10	
Sulfate	22		mg/L	12.50	10	96	80-120	0.3	10	
<b>Matrix Spike Dup (1503061-MSD3)</b>										
Source: 15C0312-01RE1 Prepared: 03/06/2015 Analyzed: 03/09/2015										
Sulfate	19		mg/L	12.50	6.5	98	80-120	0.2	10	



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1560 312 DATE 3/16/15 PAGE 1 OF 1

PROJECT NAME <u>Exp GW Monitoring # 287051</u> CONTACT NAME <u>Ben Daigneau + Victoria Hermosillo</u> COMPANY NAME <u>Clear Creek Associates</u> ADDRESS <u>221 N. Court Ave, Suite # 101 Tucson, AZ</u> ZIP <u>85701</u> PHONE <u>622-3222</u> EMAIL <u>bdaigneau@clearcreekassociates.com</u> SAMPLER'S SIGNATURE				NUMBER OF CONTAINERS <u>3</u> SAMPLE MATRIX* <u>GW</u>	
CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX					
<input type="checkbox"/> Acids	<input type="checkbox"/> Base Neutrals	<input type="checkbox"/> 625/8270	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> 624	<input type="checkbox"/> TTHMS
<input type="checkbox"/> HAAS	<input type="checkbox"/> 5242	<input type="checkbox"/> 8260	<input type="checkbox"/> Chloride	<input type="checkbox"/> NO <sub>2</sub>	<input type="checkbox"/> NO <sub>3</sub>
<input type="checkbox"/> Sulfate	<input type="checkbox"/> Resistivity	<input type="checkbox"/> TKN	<input type="checkbox"/> TPH	<input type="checkbox"/> TPN	<input type="checkbox"/> 1664
<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> TCP Analysis	<input type="checkbox"/> Pestic	<input type="checkbox"/> TCP	<input type="checkbox"/> Metals	<input type="checkbox"/> Total
<input type="checkbox"/> RCRAB	<input type="checkbox"/> Dissolved	<input type="checkbox"/> Cyanide	<input type="checkbox"/> SDWA-INORGANICS	<input type="checkbox"/> WAD	<input type="checkbox"/> SDWA-INORGANICS
<input type="checkbox"/> Amen	<input type="checkbox"/> Total	<input type="checkbox"/> MPN	<input type="checkbox"/> Coliform	<input type="checkbox"/> PHA	<input type="checkbox"/> PH
<input type="checkbox"/> Fecal	<input type="checkbox"/> Turb	<input type="checkbox"/> COD	<input type="checkbox"/> TSS	<input type="checkbox"/> BOD	<input type="checkbox"/> F, Ca, Mg, K, Na
<input type="checkbox"/> Total Alkalinity as CaCO <sub>3</sub>	<input checked="" type="checkbox"/> * See Quote				

1. RELINQUISHED BY: Signature Printed Name <u>Ryan Toomey</u> Firm <u>Clear Creek</u> Date/Time <u>3/5/15 09:30</u>		2. RECEIVED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____	
3. RELINQUISHED BY: Signature _____ Printed Name <u>Feder</u> Firm _____ Date/Time <u>3/16/15 15:30</u>		4. RECEIVED BY: Signature Printed Name _____ Firm <u>TURNER LABORATORIES, INC.</u> Date/Time <u>3/16/15 15:30</u>	

REPORT REQUIREMENTS: I. Routine Report II. Report (includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (Includes All Raw Data) Add 10% to invoice		INVOICE INFORMATION: Account Y N P.O. # Bill to:	
TURNAROUND REQUIREMENTS: Standard (approx. 10 days)* Next Day 2 Day 5 Day Email Preliminary Results * Working Days		SAMPLE RECEIPT: Total Containers <u>3</u> Temperature <u>1.1</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ambient <input type="checkbox"/> Blue Ice	

Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seals: <input type="checkbox"/>	Preservation Confirmation: <input checked="" type="checkbox"/>
ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	Container Intact: <input checked="" type="checkbox"/>	Appropriate Head Space: <input checked="" type="checkbox"/>
Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No	COC / Labels Agree: <input checked="" type="checkbox"/>	Received Within Hold Time: <input checked="" type="checkbox"/>

SPECIAL INSTRUCTIONS/COMMENTS:  
Received NO<sub>2</sub>/NO<sub>3</sub> out of hold time  
contacted client - Lab 3/6/15



April 01, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15C0514  
Order Name: New Project 9-29-14

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/16/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0514  
**Date Received:** 03/16/2015

**Order:** New Project 9-29-14

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15C0514-01	BMO-2015-1BL	Ground Water	03/12/2015 1535

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0514  
**Date Received:** 03/16/2015

**Case Narrative**

---

H3 Sample was received and/or analysis requested past holding time.

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0514  
**Lab Sample ID:** 15C0514-01

**Client Sample ID:** BMO-2015-1BL  
**Collection Date/Time:** 03/12/2015 1535  
**Matrix:** Ground Water  
**Order Name:** New Project 9-29-14

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	91	4.0		mg/L	1	03/16/2015 1225	03/17/2015 0950	RAD
Magnesium	13	3.0		mg/L	1	03/16/2015 1225	03/17/2015 0950	RAD
Potassium	ND	5.0		mg/L	1	03/16/2015 1225	03/17/2015 0950	RAD
Sodium	37	5.0		mg/L	1	03/16/2015 1225	03/17/2015 0950	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.5	0.0	H5	-	1	03/16/2015 1210	03/16/2015 1230	EK
Temperature (°C)	19		H5	-	1	03/16/2015 1210	03/16/2015 1230	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	19	1.0		mg/L	1	03/16/2015 1600	03/16/2015 2056	MR
Fluoride	ND	0.50		mg/L	1	03/16/2015 1600	03/16/2015 2056	MR
Nitrogen, Nitrate (As N)	2.3	0.50	H3	mg/L	1	03/16/2015 1600	03/16/2015 2056	MR
Nitrogen, Nitrite (As N)	ND	0.10	H3	mg/L	1	03/16/2015 1600	03/16/2015 2056	MR
Sulfate	220	130		mg/L	25	03/16/2015 1600	03/17/2015 1124	MR
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO3)	150	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
Alkalinity, Carbonate (As CaCO3)	ND	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
Alkalinity, Hydroxide (As CaCO3)	ND	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
Alkalinity, Total (As CaCO3)	150	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	750	0.10		µmhos/cm	1	03/18/2015 1205	03/18/2015 1225	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	510	20		mg/L	1	03/18/2015 0825	03/19/2015 1300	CC

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0514  
**Date Received:** 03/16/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503163 - E 200.7</b>										
<b>Blank (1503163-BLK1)</b>				Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1503163-BS1)</b>				Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	9.7	4.0	mg/L	10.00		97	85-115			
Magnesium	9.9	3.0	mg/L	10.00		99	85-115			
Potassium	9.4	5.0	mg/L	10.00		94	85-115			
Sodium	10	5.0	mg/L	10.00		104	85-115			
<b>LCS Dup (1503163-BSD1)</b>				Prepared: 03/16/2015 Analyzed: 03/17/2015						
Calcium	9.8	4.0	mg/L	10.00		98	85-115	1	20	
Magnesium	10	3.0	mg/L	10.00		100	85-115	0.1	20	
Potassium	9.4	5.0	mg/L	10.00		94	85-115	0.1	20	
Sodium	10	5.0	mg/L	10.00		102	85-115	2	20	
<b>Matrix Spike (1503163-MS1)</b>				Source: 15C0514-01		Prepared: 03/16/2015 Analyzed: 03/17/2015				
Calcium	96	4.0	mg/L	10.00	91	45	70-130			M3
Magnesium	22	3.0	mg/L	10.00	13	90	70-130			
Potassium	12	5.0	mg/L	10.00	2.4	95	70-130			
Sodium	44	5.0	mg/L	10.00	37	75	70-130			

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0514  
**Date Received:** 03/16/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503174 - E150.1</b>										
<b>Duplicate (1503174-DUP1)</b>		<b>Source: 15C0514-01</b>			<b>Prepared &amp; Analyzed: 03/16/2015</b>					
pH (pH Units)	7.5	0.0	-		7.5			0.9	200	
Temperature (°C)	19		-		19			0.5	200	
<b>Batch 1503193 - SM2540 C</b>										
<b>Duplicate (1503193-DUP1)</b>		<b>Source: 15C0484-01</b>			<b>Prepared: 03/18/2015 Analyzed: 03/19/2015</b>					
Total Dissolved Solids (Residue, Filterable)	240	20	mg/L		240			2	5	
<b>Batch 1503194 - SM2510 B</b>										
<b>Duplicate (1503194-DUP1)</b>		<b>Source: 15C0514-01</b>			<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Conductivity	750	0.10	µmhos/cm		750			0.5	10	
<b>Batch 1503197 - SM2320B</b>										
<b>LCS (1503197-BS1)</b>					<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L		250.0		98	90-110		
<b>LCS Dup (1503197-BSD1)</b>					<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L		250.0		100	90-110	2	10
<b>Matrix Spike (1503197-MS1)</b>		<b>Source: 15C0509-01</b>			<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	370	2.0	mg/L		250.0	120	99	85-115		
<b>Matrix Spike Dup (1503197-MSD1)</b>		<b>Source: 15C0509-01</b>			<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	380	2.0	mg/L		250.0	120	101	85-115	1	10

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0514  
**Date Received:** 03/16/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503156 - E300</b>										
<b>Blank (1503156-BLK1)</b>				Prepared & Analyzed: 03/16/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1503156-BS1)</b>				Prepared & Analyzed: 03/16/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110			
Fluoride	2.0	0.50	mg/L	2.000		102	90-110			
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		98	90-110			
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		99	90-110			
Sulfate	12	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1503156-BSD1)</b>				Prepared & Analyzed: 03/16/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110	0.008	10	
Fluoride	2.0	0.50	mg/L	2.000		101	90-110	0.9	10	
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		98	90-110	0.1	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		101	90-110	1	10	
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.4	10	
<b>Matrix Spike (1503156-MS1)</b>				<b>Source: 15C0518-01</b>		Prepared & Analyzed: 03/16/2015				
Chloride	23	1.0	mg/L	12.50	12	93	80-120			
Fluoride	2.1	0.50	mg/L	2.000	ND	104	80-120			
Nitrogen, Nitrate (As N)	6.1	0.50	mg/L	5.000	1.1	100	80-120			
Nitrogen, Nitrite (As N)	2.1	0.10	mg/L	2.500	ND	83	80-120			
<b>Matrix Spike (1503156-MS2)</b>				<b>Source: 15C0518-01RE1</b>		Prepared: 03/16/2015 Analyzed: 03/17/2015				
Sulfate	20		mg/L	12.50	8.3	93	80-120			
<b>Matrix Spike Dup (1503156-MSD1)</b>				<b>Source: 15C0518-01</b>		Prepared & Analyzed: 03/16/2015				
Chloride	23	1.0	mg/L	12.50	12	93	80-120	0.1	10	
Fluoride	2.1	0.50	mg/L	2.000	ND	104	80-120	0.05	10	
Nitrogen, Nitrate (As N)	6.1	0.50	mg/L	5.000	1.1	100	80-120	0.3	10	
Nitrogen, Nitrite (As N)	2.1	0.10	mg/L	2.500	ND	84	80-120	1	10	
<b>Matrix Spike Dup (1503156-MSD2)</b>				<b>Source: 15C0518-01RE1</b>		Prepared: 03/16/2015 Analyzed: 03/17/2015				
Sulfate	20		mg/L	12.50	8.3	97	80-120	3	10	







April 06, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15C0539  
Order Name: 287051

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/17/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0539  
**Date Received:** 03/17/2015

**Order:** 287051

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15C0539-01	BMO-2015-1B	Ground Water	03/15/2015 1520

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0539  
**Date Received:** 03/17/2015

**Case Narrative**

---

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0539  
**Lab Sample ID:** 15C0539-01

**Client Sample ID:** BMO-2015-1B  
**Collection Date/Time:** 03/15/2015 1520  
**Matrix:** Ground Water  
**Order Name:** 287051

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	77	4.0		mg/L	1	03/20/2015 1025	03/25/2015 0944	RAD
Magnesium	11	3.0		mg/L	1	03/20/2015 1025	03/25/2015 0944	RAD
Potassium	ND	5.0		mg/L	1	03/20/2015 1025	03/25/2015 0944	RAD
Sodium	34	5.0		mg/L	1	03/20/2015 1025	03/25/2015 0944	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.5	0.0	H5	-	1	03/17/2015 1200	03/17/2015 1217	EK
Temperature (°C)	19		H5	-	1	03/17/2015 1200	03/17/2015 1217	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	20	1.0		mg/L	1	03/17/2015 1000	03/17/2015 1105	MR
Fluoride	ND	0.50		mg/L	1	03/17/2015 1000	03/17/2015 1105	MR
Nitrogen, Nitrate (As N)	2.3	0.50		mg/L	1	03/17/2015 1000	03/17/2015 1105	MR
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	03/17/2015 1000	03/17/2015 1105	MR
Sulfate	170	50		mg/L	10	03/17/2015 1000	03/17/2015 1410	MR
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO3)	160	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
Alkalinity, Carbonate (As CaCO3)	ND	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
Alkalinity, Hydroxide (As CaCO3)	ND	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
Alkalinity, Total (As CaCO3)	160	2.0		mg/L	1	03/18/2015 1330	03/18/2015 1405	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	680	0.10		µmhos/cm	1	03/18/2015 1205	03/18/2015 1229	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	450	20		mg/L	1	03/18/2015 0825	03/19/2015 1300	CC

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15C0539  
 Date Received: 03/17/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503253 - E 200.7</b>										
<b>Blank (1503253-BLK1)</b>				Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1503253-BS1)</b>				Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	9.8	4.0	mg/L	10.00		98	85-115			
Magnesium	9.8	3.0	mg/L	10.00		98	85-115			
Potassium	9.7	5.0	mg/L	10.00		97	85-115			
Sodium	10	5.0	mg/L	10.00		102	85-115			
<b>LCS Dup (1503253-BSD1)</b>				Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	9.8	4.0	mg/L	10.00		98	85-115	0.2	20	
Magnesium	9.6	3.0	mg/L	10.00		96	85-115	2	20	
Potassium	9.6	5.0	mg/L	10.00		96	85-115	0.6	20	
Sodium	11	5.0	mg/L	10.00		105	85-115	3	20	
<b>Matrix Spike (1503253-MS1)</b>		<b>Source: 15C0610-01</b>		Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	110	4.0	mg/L	10.00	100	52	70-130			M3
Magnesium	25	3.0	mg/L	10.00	16	90	70-130			
Potassium	12	5.0	mg/L	10.00	3.0	89	70-130			
Sodium	42	5.0	mg/L	10.00	34	80	70-130			

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0539  
**Date Received:** 03/17/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503191 - E150.1</b>										
<b>Duplicate (1503191-DUP1)</b>		<b>Source: 15C0539-01</b>			<b>Prepared &amp; Analyzed: 03/17/2015</b>					
pH (pH Units)	7.6	0.0	-		7.5			0.5	200	
Temperature (°C)	19		-		19			0.5	200	
<b>Batch 1503193 - SM2540 C</b>										
<b>Duplicate (1503193-DUP1)</b>		<b>Source: 15C0484-01</b>			<b>Prepared: 03/18/2015 Analyzed: 03/19/2015</b>					
Total Dissolved Solids (Residue, Filterable)	240	20	mg/L		240			2	5	
<b>Batch 1503194 - SM2510 B</b>										
<b>Duplicate (1503194-DUP1)</b>		<b>Source: 15C0514-01</b>			<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Conductivity	750	0.10	µmhos/cm		750			0.5	10	
<b>Batch 1503197 - SM2320B</b>										
<b>LCS (1503197-BS1)</b>					<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L		250.0		98	90-110		
<b>LCS Dup (1503197-BSD1)</b>					<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L		250.0		100	90-110	2	10
<b>Matrix Spike (1503197-MS1)</b>		<b>Source: 15C0509-01</b>			<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	370	2.0	mg/L		250.0	120	99	85-115		
<b>Matrix Spike Dup (1503197-MSD1)</b>		<b>Source: 15C0509-01</b>			<b>Prepared &amp; Analyzed: 03/18/2015</b>					
Alkalinity, Total (As CaCO3)	380	2.0	mg/L		250.0	120	101	85-115	1	10

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0539  
**Date Received:** 03/17/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503168 - E300</b>										
<b>Blank (1503168-BLK1)</b>				Prepared & Analyzed: 03/17/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1503168-BS1)</b>				Prepared & Analyzed: 03/17/2015						
Chloride	12	1.0	mg/L	12.50		98	90-110			
Fluoride	2.1	0.50	mg/L	2.000		104	90-110			
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000		100	90-110			
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		100	90-110			
Sulfate	13	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1503168-BSD1)</b>				Prepared & Analyzed: 03/17/2015						
Chloride	12	1.0	mg/L	12.50		98	90-110	0.1	10	
Fluoride	2.1	0.50	mg/L	2.000		104	90-110	0.2	10	
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000		100	90-110	0.1	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		101	90-110	1	10	
Sulfate	12	5.0	mg/L	12.50		100	90-110	0.3	10	
<b>Matrix Spike (1503168-MS1)</b>				Source: 15C0544-01		Prepared & Analyzed: 03/17/2015				
Fluoride	2.1	0.50	mg/L	2.000	ND	106	80-120			
Nitrogen, Nitrate (As N)	6.1	0.50	mg/L	5.000	1.3	97	80-120			
Nitrogen, Nitrite (As N)	2.3	0.10	mg/L	2.500	ND	91	80-120			
<b>Matrix Spike (1503168-MS2)</b>				Source: 15C0544-01		Prepared & Analyzed: 03/17/2015				
Chloride	14		mg/L	12.50	1.8	96	80-120			
Sulfate	18		mg/L	12.50	6.1	94	80-120			
<b>Matrix Spike (1503168-MS3)</b>				Source: 15C0545-01		Prepared & Analyzed: 03/17/2015				
Nitrogen, Nitrate (As N)	6.1	0.50	mg/L	5.000	1.2	97	80-120			
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500	ND	98	80-120			
<b>Matrix Spike Dup (1503168-MSD1)</b>				Source: 15C0544-01		Prepared & Analyzed: 03/17/2015				
Fluoride	2.1	0.50	mg/L	2.000	ND	107	80-120	0.7	10	
Nitrogen, Nitrate (As N)	6.2	0.50	mg/L	5.000	1.3	98	80-120	0.7	10	
Nitrogen, Nitrite (As N)	2.3	0.10	mg/L	2.500	ND	93	80-120	2	10	
<b>Matrix Spike Dup (1503168-MSD2)</b>				Source: 15C0544-01		Prepared & Analyzed: 03/17/2015				
Chloride	14		mg/L	12.50	1.8	96	80-120	0.3	10	
Sulfate	18		mg/L	12.50	6.1	95	80-120	0.4	10	
<b>Matrix Spike Dup (1503168-MSD3)</b>				Source: 15C0545-01		Prepared & Analyzed: 03/17/2015				
Nitrogen, Nitrate (As N)	6.0	0.50	mg/L	5.000	1.2	96	80-120	1	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500	ND	98	80-120	0.4	10	





2445 N. Coyote Drive, Suite 104  
Tucson, Arizona 85745  
(520) 882-5880  
Fax: (520) 882-9788  
www.turnerlabs.com

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1560539 DATE 3/17/15 PAGE 1 OF 1

<p>PROJECT NAME <u>Exp. GW Monitoring # 287051</u>          CONTACT NAME <u>Ben Daiguean + Victoria Hermosilla</u>          COMPANY NAME <u>Clear Creek Associates</u>          ADDRESS <u>221 N. Court Ave, Ste. 101 Tucson, AZ</u>          ZIP <u>85701</u> PHONE <u>822-3222</u> EMAIL <u>bdaiguean@clearcreekassociates.com</u>          SAMPLER'S SIGNATURE <u>[Signature]</u></p>	<p>NUMBER OF CONTAINERS <u>3</u></p>	<p>SAMPLE I.D. <u>BMD-2015-1B</u> LAB I.D. _____          DATE <u>3/15/15</u> TIME <u>15:20</u> SAMPLE MATRIX* <u>GW</u></p>	<p>625/8270 Base Neutrals <input type="checkbox"/>          Volatile Organics <input type="checkbox"/>          624 <input type="checkbox"/>          524.2 <input type="checkbox"/>          THMS <input type="checkbox"/>          HAAS <input type="checkbox"/>          8260 <input type="checkbox"/>          NO<sub>3</sub> <input checked="" type="checkbox"/>          Chloride <input checked="" type="checkbox"/>          NO<sub>2</sub> <input checked="" type="checkbox"/>          TKN <input type="checkbox"/>          1664 <input type="checkbox"/>          TPH <input type="checkbox"/>          Oil &amp; Grease <input type="checkbox"/>          TCP Analysis <input type="checkbox"/>          Semi-VOA <input type="checkbox"/>          Pest. <input type="checkbox"/>          Metals <input type="checkbox"/>          Total <input type="checkbox"/>          RCRAB <input type="checkbox"/>          Cyanide <input type="checkbox"/>          Amen. <input type="checkbox"/>          WAD <input type="checkbox"/>          SDWA-ORGANICS PRIMARY <input type="checkbox"/>          SECONDARY <input type="checkbox"/>          Coliform <input type="checkbox"/>          MPN <input type="checkbox"/>          Fecal <input type="checkbox"/>          pH <input type="checkbox"/>          q<sub>2</sub> <input type="checkbox"/>          q<sub>3</sub> <input type="checkbox"/>          BOD <input type="checkbox"/>          TSS <input type="checkbox"/>          COD <input type="checkbox"/>          Tub <input type="checkbox"/></p>
<p>1. RELINQUISHED BY:          Signature <u>[Signature]</u>          Printed Name <u>Ryan Toomey</u>          Firm <u>Clear Creek</u>          Date/Time <u>3/16/15 09:30</u></p>	<p>2. RECEIVED BY:          Signature _____          Printed Name _____          Firm _____          Date/Time _____</p>	<p>3. RELINQUISHED BY:          Signature _____          Printed Name <u>Federx</u>          Firm _____          Date/Time _____</p>	<p>4. RECEIVED BY:          Signature <u>[Signature]</u>          Printed Name _____          Firm <u>TURNER LABORATORIES, INC.</u>          Date/Time <u>3/18/15 0940</u></p>
<p>REPORT REQUIREMENTS:          I. Routine Report _____          II. Report (includes DUP, MS, MSD, as required, may be charged as samples) _____          III. Date Validation Report (includes All Raw Data) Add 10% to invoice _____</p>		<p>TURNAROUND REQUIREMENTS:          Standard (approx. 10 days)* _____          Next Day 2 Day 5 Day* _____          Email Preliminary Results _____          * Working Days</p> <p>* LEGEND          SAMPLE MATRIX          DW = DRINKING WATER          GW = GROUNDWATER          SD = SOLID          SG = SLUDGE          SL = SOIL          ST = STORMWATER          WW = WASTEWATER</p>	
<p>INVOICE INFORMATION:          Account Y ___ N          P.O. # _____          Bill to: _____</p>		<p>SPECIAL INSTRUCTIONS/COMMENTS:          Compliance Analysis: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          ADEQ Forms: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          Mail ADEQ Forms: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	
<p>REPORT RECEIPT:          Total Containers <u>3</u>          Temperature <u>21</u>  <input checked="" type="checkbox"/> Wet Ice  <input type="checkbox"/> Ambient  <input type="checkbox"/> Blue Ice</p>		<p>CUSTOMER CONFIRMATION:  <input checked="" type="checkbox"/> Preservation Confirmation  <input checked="" type="checkbox"/> Appropriate Head Space  <input checked="" type="checkbox"/> Received Within Hold Time</p>	



April 06, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15C0610  
Order Name: New Project 9-29-14

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/20/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0610  
**Date Received:** 03/20/2015

**Order:** New Project 9-29-14

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15C0610-01	BMO-2015-2B	Ground Water	03/19/2015 1523

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0610  
**Date Received:** 03/20/2015

**Case Narrative**

---

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

M2 Matrix spike recovery was low; the associated LCS/LCSD was acceptable.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

N4 The Minimum Reporting Limit (MRL) verification check did not meet laboratory acceptance limits.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0610  
**Lab Sample ID:** 15C0610-01

**Client Sample ID:** BMO-2015-2B  
**Collection Date/Time:** 03/19/2015 1523  
**Matrix:** Ground Water  
**Order Name:** New Project 9-29-14

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	100	4.0		mg/L	1	03/20/2015 1025	03/25/2015 0948	RAD
Magnesium	16	3.0		mg/L	1	03/20/2015 1025	03/25/2015 0948	RAD
Potassium	ND	5.0		mg/L	1	03/20/2015 1025	03/25/2015 0948	RAD
Sodium	34	5.0		mg/L	1	03/20/2015 1025	03/25/2015 0948	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.5	0.0	H5	-	1	03/20/2015 1015	03/20/2015 1055	EK
Temperature (°C)	22		H5	-	1	03/20/2015 1015	03/20/2015 1055	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	19	1.0		mg/L	1	03/20/2015 1030	03/20/2015 1054	MR
Fluoride	ND	0.50		mg/L	1	03/20/2015 1030	03/20/2015 1054	MR
Nitrogen, Nitrate (As N)	2.0	0.50		mg/L	1	03/20/2015 1030	03/20/2015 1054	MR
Nitrogen, Nitrite (As N)	ND	0.10	N4	mg/L	1	03/20/2015 1030	03/20/2015 1054	MR
Sulfate	290	130		mg/L	25	03/20/2015 1100	03/20/2015 1131	MR
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO3)	170	2.0		mg/L	1	03/27/2015 1545	03/27/2015 1630	CC
Alkalinity, Carbonate (As CaCO3)	ND	2.0		mg/L	1	03/27/2015 1545	03/27/2015 1630	CC
Alkalinity, Hydroxide (As CaCO3)	ND	2.0		mg/L	1	03/27/2015 1545	03/27/2015 1630	CC
Alkalinity, Total (As CaCO3)	170	2.0		mg/L	1	03/27/2015 1545	03/27/2015 1630	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	830	0.10		µmhos/cm	1	03/30/2015 1210	03/30/2015 1218	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	560	20		mg/L	1	03/24/2015 0830	03/25/2015 1300	CC

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0610  
**Date Received:** 03/20/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503253 - E 200.7</b>										
<b>Blank (1503253-BLK1)</b>				Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1503253-BS1)</b>				Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	9.8	4.0	mg/L	10.00		98	85-115			
Magnesium	9.8	3.0	mg/L	10.00		98	85-115			
Potassium	9.7	5.0	mg/L	10.00		97	85-115			
Sodium	10	5.0	mg/L	10.00		102	85-115			
<b>LCS Dup (1503253-BSD1)</b>				Prepared: 03/20/2015 Analyzed: 03/25/2015						
Calcium	9.8	4.0	mg/L	10.00		98	85-115	0.2	20	
Magnesium	9.6	3.0	mg/L	10.00		96	85-115	2	20	
Potassium	9.6	5.0	mg/L	10.00		96	85-115	0.6	20	
Sodium	11	5.0	mg/L	10.00		105	85-115	3	20	
<b>Matrix Spike (1503253-MS1)</b>				<b>Source: 15C0610-01</b>		Prepared: 03/20/2015 Analyzed: 03/25/2015				
Calcium	110	4.0	mg/L	10.00	100	52	70-130			M3
Magnesium	25	3.0	mg/L	10.00	16	90	70-130			
Potassium	12	5.0	mg/L	10.00	3.0	89	70-130			
Sodium	42	5.0	mg/L	10.00	34	80	70-130			

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15C0610  
 Date Received: 03/20/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503230 - E150.1</b>										
<b>Duplicate (1503230-DUP1)</b>		<b>Source: 15C0610-01</b>			Prepared & Analyzed: 03/20/2015					
pH (pH Units)	7.5	0.0	-		7.5			0.1	200	
Temperature (°C)	23		-		22			4	200	
<b>Batch 1503264 - SM2540 C</b>										
<b>Duplicate (1503264-DUP1)</b>		<b>Source: 15C0583-01</b>			Prepared: 03/24/2015 Analyzed: 03/25/2015					
Total Dissolved Solids (Residue, Filterable)	560	20	mg/L		550			1	5	
<b>Batch 1503291 - SM2320B</b>										
<b>LCS (1503291-BS1)</b>					Prepared & Analyzed: 03/27/2015					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		99	90-110			
<b>LCS Dup (1503291-BSD1)</b>					Prepared & Analyzed: 03/27/2015					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		101	90-110	2	10	
<b>Matrix Spike (1503291-MS1)</b>		<b>Source: 15C0583-01</b>			Prepared & Analyzed: 03/27/2015					
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	120	98	85-115			
<b>Matrix Spike Dup (1503291-MSD1)</b>		<b>Source: 15C0583-01</b>			Prepared & Analyzed: 03/27/2015					
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	120	99	85-115	1	10	
<b>Batch 1503298 - SM2510 B</b>										
<b>Duplicate (1503298-DUP1)</b>		<b>Source: 15C0699-01</b>			Prepared & Analyzed: 03/30/2015					
Conductivity	910	0.10	µmhos/cm		910			0.1	10	

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0610  
**Date Received:** 03/20/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503219 - E300</b>										
<b>Blank (1503219-BLK1)</b>				Prepared & Analyzed: 03/20/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1503219-BS1)</b>				Prepared & Analyzed: 03/20/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110			
Fluoride	2.1	0.50	mg/L	2.000		105	90-110			
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000		100	90-110			
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		101	90-110			
Sulfate	13	5.0	mg/L	12.50		102	90-110			
<b>LCS Dup (1503219-BSD1)</b>				Prepared & Analyzed: 03/20/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110	0.05	10	
Fluoride	2.1	0.50	mg/L	2.000		105	90-110	0.7	10	
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000		100	90-110	0.04	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		101	90-110	0.5	10	
Sulfate	13	5.0	mg/L	12.50		101	90-110	1	10	
<b>Matrix Spike (1503219-MS1)</b>				Source: 15C0612-01		Prepared & Analyzed: 03/20/2015				
Fluoride	2.7	0.50	mg/L	2.000	0.71	99	80-120			
<b>Matrix Spike (1503219-MS2)</b>				Source: 15C0612-01		Prepared & Analyzed: 03/20/2015				
Chloride	17		mg/L	12.50	6.9	81	80-120			
Fluoride	2.1		mg/L	2.000	0.028	102	80-120			
Nitrogen, Nitrate (As N)	5.3		mg/L	5.000	0.37	99	80-120			
Nitrogen, Nitrite (As N)	2.4		mg/L	2.500	ND	98	80-120			
Sulfate	20		mg/L	12.50	10	82	80-120			
<b>Matrix Spike Dup (1503219-MSD1)</b>				Source: 15C0612-01		Prepared & Analyzed: 03/20/2015				
Fluoride	2.7	0.50	mg/L	2.000	0.71	99	80-120	0.6	10	
<b>Matrix Spike Dup (1503219-MSD2)</b>				Source: 15C0612-01		Prepared & Analyzed: 03/20/2015				
Chloride	17		mg/L	12.50	6.9	78	80-120	2	10	M2
Fluoride	2.1		mg/L	2.000	0.028	103	80-120	0.7	10	
Nitrogen, Nitrate (As N)	5.4		mg/L	5.000	0.37	100	80-120	0.9	10	
Nitrogen, Nitrite (As N)	2.4		mg/L	2.500	ND	95	80-120	3	10	
Sulfate	20		mg/L	12.50	10	81	80-120	0.4	10	



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1506010 DATE \_\_\_\_\_ PAGE \_\_\_\_\_ OF \_\_\_\_\_

PROJECT NAME Exp GW Monitoring # 287051  
 CONTACT NAME Ben Daignean + Victoria Hermosilla  
 COMPANY NAME Clear Creek Associates  
 ADDRESS 221 N. Court Ave. Suite #  
 ZIP 85701 PHONE 622-3222 EMAIL bdaignean@clearcreekassociates.com  
 SAMPLER'S SIGNATURE [Signature]

NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX
3	Base Neutrals <input type="checkbox"/> 625/8270 Volatile Organics <input type="checkbox"/> 624 TTHMS <input type="checkbox"/> 524.2 <input type="checkbox"/> 8260 HAAS <input type="checkbox"/> Acids <input type="checkbox"/> NO <sub>3</sub> Chloride <input checked="" type="checkbox"/> NO <sub>2</sub> <input checked="" type="checkbox"/> NO <sub>2</sub> Sulfate <input type="checkbox"/> Resistivity <input type="checkbox"/> TKN <input type="checkbox"/> 1664 TPH <input type="checkbox"/> Oil & Grease <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> Semi-VOA <input type="checkbox"/> Pestic <input type="checkbox"/> Metals <input type="checkbox"/> Total <input type="checkbox"/> RCRA8 <input type="checkbox"/> Cyanide <input type="checkbox"/> Amen <input type="checkbox"/> WAD <input type="checkbox"/> SDWA-INORGANICS <input type="checkbox"/> PRIMARY <input type="checkbox"/> SECONDARY <input type="checkbox"/> Coliform <input type="checkbox"/> PHA <input type="checkbox"/> Fecal <input type="checkbox"/> Turb <input type="checkbox"/> COD <input type="checkbox"/> TSS <input type="checkbox"/> BOD <input type="checkbox"/> F, Ca, Mg, K, Na <input checked="" type="checkbox"/> Total Alkalinity as CaCO <sub>3</sub> <input checked="" type="checkbox"/> * See Quete <input checked="" type="checkbox"/>

SAMPLE ID. BMO-2015-2B LAB I.D. \_\_\_\_\_  
 DATE 3/19/15 TIME 15:23 SAMPLE MATRIX\* GW

1. RELINQUISHED BY: [Signature] Ryan Torney  
 Printed Name Clear Creek  
 Firm Clear Creek  
 Date/Time 3/19/15 20:50

2. RECEIVED BY: [Signature] Vish Sagar  
 Printed Name Clear Creek  
 Firm Clear Creek  
 Date/Time 3/19/15 20:50

3. RELINQUISHED BY: [Signature] Vish Sagar  
 Printed Name Clear Creek  
 Firm Clear Creek  
 Date/Time 3/20/15 9:51

4. RECEIVED BY: [Signature] Vish Sagar  
 Printed Name Clear Creek  
 Firm Clear Creek  
 Date/Time 3/20/15 9:51

TURNAROUND REQUIREMENTS:  
 Standard (approx. 10 days)\*  
 Next Day 2 Day 5 Day\*  
 Email Preliminary Results  
 \* Working Days

\* LEGEND  
 SAMPLE MATRIX  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

REPORT REQUIREMENTS:  
 I. Routine Report  
 II. Report (includes DUP, MS, MSD, as required, may be changed as samples)  
 III. Date Validation Report (includes All Raw Data)  
 Add 10% to invoice

INVOICE INFORMATION:  
 Account Y N  
 P.O. # \_\_\_\_\_  
 Bill to: \_\_\_\_\_  
 Total Containers 3  
 Temperature 5.4  
 Wet Ice  
 Ambient  
 Blue Ice

SAMPLE RECEIPT:  
 Preservation Confirmation  
 Appropriate Head Space  
 Received Within Hold Time

COMPLIANCE ANALYSIS:  Yes  No  
 ADEQ FORMS:  Yes  No  
 MAIL ADEQ FORMS:  Yes  No

SPECIAL INSTRUCTIONS/COMMENTS:



April 14, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15C0699  
Order Name: 287051

RE: Exp GW Monitoring

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 03/30/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0699  
**Date Received:** 03/30/2015

**Order:** 287051

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15C0699-01	BMO-2015-2BL	Ground Water	03/26/2015 1510

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0699  
**Date Received:** 03/30/2015

**Case Narrative**

---

H3 Sample was received and/or analysis requested past holding time.

H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

Client: Clear Creek Associates  
 Project: Exp GW Monitoring  
 Work Order: 15C0699  
 Lab Sample ID: 15C0699-01

Client Sample ID: BMO-2015-2BL  
 Collection Date/Time: 03/26/2015 1510  
 Matrix: Ground Water  
 Order Name: 287051

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>ICP Dissolved Metals-E 200.7</b>								
Calcium	120	4.0		mg/L	1	03/31/2015 1100	04/03/2015 1059	RAD
Magnesium	17	3.0		mg/L	1	03/31/2015 1100	04/03/2015 1059	RAD
Potassium	ND	5.0		mg/L	1	03/31/2015 1100	04/03/2015 1059	RAD
Sodium	34	5.0		mg/L	1	03/31/2015 1100	04/03/2015 1059	RAD
<b>pH-E150.1</b>								
pH (pH Units)	7.4	0.0	H5	-	1	03/30/2015 1145	03/30/2015 1156	EK
Temperature (°C)	19		H5	-	1	03/30/2015 1145	03/30/2015 1156	EK
<b>Anions by Ion Chromatography-E300</b>								
Chloride	18	2.0		mg/L	2	03/30/2015 1500	03/30/2015 1717	MR
Fluoride	ND	0.50		mg/L	1	03/30/2015 1400	03/30/2015 1621	MR
Nitrogen, Nitrate (As N)	1.9	0.50	H3	mg/L	1	03/30/2015 1400	03/30/2015 1621	MR
Nitrogen, Nitrite (As N)	ND	0.10	H3	mg/L	1	03/30/2015 1400	03/30/2015 1621	MR
Sulfate	280	130		mg/L	25	03/30/2015 1500	03/30/2015 1735	MR
<b>Alkalinity-SM2320B</b>								
Alkalinity, Bicarbonate (As CaCO3)	160	2.0		mg/L	1	03/31/2015 1000	03/31/2015 1020	CC
Alkalinity, Carbonate (As CaCO3)	ND	2.0		mg/L	1	03/31/2015 1000	03/31/2015 1020	CC
Alkalinity, Hydroxide (As CaCO3)	ND	2.0		mg/L	1	03/31/2015 1000	03/31/2015 1020	CC
Alkalinity, Total (As CaCO3)	160	2.0		mg/L	1	03/31/2015 1000	03/31/2015 1020	CC
<b>Specific Conductance-SM2510 B</b>								
Conductivity	910	0.10		µmhos/cm	1	03/30/2015 1210	03/30/2015 1216	EK
<b>Total Dissolved Solids (Residue, Filterable)-SM2540 C</b>								
Total Dissolved Solids (Residue, Filterable)	620	20		mg/L	1	04/01/2015 0930	04/02/2015 1215	CC

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0699  
**Date Received:** 03/30/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1504027 - E 200.7</b>										
<b>Blank (1504027-BLK1)</b>				Prepared: 04/02/2015 Analyzed: 04/03/2015						
Calcium	ND	4.0	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
<b>LCS (1504027-BS1)</b>				Prepared: 04/02/2015 Analyzed: 04/03/2015						
Calcium	9.1	4.0	mg/L	10.00		91	85-115			
Magnesium	9.3	3.0	mg/L	10.00		93	85-115			
Potassium	9.5	5.0	mg/L	10.00		95	85-115			
Sodium	10	5.0	mg/L	10.00		100	85-115			
<b>LCS Dup (1504027-BSD1)</b>				Prepared: 04/02/2015 Analyzed: 04/03/2015						
Calcium	9.1	4.0	mg/L	10.00		91	85-115	0.7	20	
Magnesium	9.3	3.0	mg/L	10.00		93	85-115	0.2	20	
Potassium	9.6	5.0	mg/L	10.00		96	85-115	0.06	20	
Sodium	9.8	5.0	mg/L	10.00		98	85-115	3	20	
<b>Matrix Spike (1504027-MS1)</b>		<b>Source: 15C0699-01</b>		Prepared: 04/02/2015 Analyzed: 04/03/2015						
Calcium	120	4.0	mg/L	10.00	120	52	70-130			M3
Magnesium	25	3.0	mg/L	10.00	17	84	70-130			
Potassium	12	5.0	mg/L	10.00	3.3	89	70-130			
Sodium	42	5.0	mg/L	10.00	34	79	70-130			

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0699  
**Date Received:** 03/30/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503298 - SM2510 B</b>										
<b>Duplicate (1503298-DUP1)</b>		<b>Source: 15C0699-01</b>			<b>Prepared &amp; Analyzed: 03/30/2015</b>					
Conductivity	910	0.10	µmhos/cm		910			0.1	10	
<b>Batch 1503304 - SM2320B</b>										
<b>LCS (1503304-BS1)</b>					<b>Prepared &amp; Analyzed: 03/31/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		102	90-110			
<b>LCS Dup (1503304-BSD1)</b>					<b>Prepared &amp; Analyzed: 03/31/2015</b>					
Alkalinity, Total (As CaCO3)	250	2.0	mg/L	250.0		100	90-110	2	10	
<b>Matrix Spike (1503304-MS1)</b>		<b>Source: 15C0699-01</b>			<b>Prepared &amp; Analyzed: 03/31/2015</b>					
Alkalinity, Total (As CaCO3)	410	2.0	mg/L	250.0	160	98	85-115			
<b>Matrix Spike Dup (1503304-MSD1)</b>		<b>Source: 15C0699-01</b>			<b>Prepared &amp; Analyzed: 03/31/2015</b>					
Alkalinity, Total (As CaCO3)	410	2.0	mg/L	250.0	160	99	85-115	0.5	10	
<b>Batch 1503308 - E150.1</b>										
<b>Duplicate (1503308-DUP1)</b>		<b>Source: 15C0699-01</b>			<b>Prepared &amp; Analyzed: 03/30/2015</b>					
pH (pH Units)	7.4	0.0	-		7.4			0.4	200	
Temperature (°C)	19		-		19			3	200	
<b>Batch 1504005 - SM2540 C</b>										
<b>Duplicate (1504005-DUP1)</b>		<b>Source: 15C0720-06</b>			<b>Prepared: 04/01/2015 Analyzed: 04/02/2015</b>					
Total Dissolved Solids (Residue, Filterable)	890	20	mg/L		880			0.6	5	

**Client:** Clear Creek Associates  
**Project:** Exp GW Monitoring  
**Work Order:** 15C0699  
**Date Received:** 03/30/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1503296 - E300</b>										
<b>Blank (1503296-BLK1)</b>				Prepared & Analyzed: 03/30/2015						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
<b>LCS (1503296-BS1)</b>				Prepared & Analyzed: 03/30/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110			
Fluoride	1.9	0.50	mg/L	2.000		96	90-110			
Nitrogen, Nitrate (As N)	4.8	0.50	mg/L	5.000		97	90-110			
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		99	90-110			
Sulfate	12	5.0	mg/L	12.50		97	90-110			
<b>LCS Dup (1503296-BSD1)</b>				Prepared & Analyzed: 03/30/2015						
Chloride	12	1.0	mg/L	12.50		97	90-110	0.1	10	
Fluoride	1.9	0.50	mg/L	2.000		97	90-110	0.2	10	
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		97	90-110	0.2	10	
Nitrogen, Nitrite (As N)	2.5	0.10	mg/L	2.500		100	90-110	0.8	10	
Sulfate	12	5.0	mg/L	12.50		98	90-110	0.8	10	
<b>Matrix Spike (1503296-MS1)</b>				<b>Source: 15C0702-01</b>		Prepared & Analyzed: 03/30/2015				
Fluoride	2.6	0.50	mg/L	2.000	0.74	93	80-120			
Nitrogen, Nitrate (As N)	8.8	0.50	mg/L	5.000	3.8	100	80-120			
<b>Matrix Spike (1503296-MS2)</b>				<b>Source: 15C0702-01</b>		Prepared: 03/30/2015 Analyzed: 03/31/2015				
Nitrogen, Nitrite (As N)	2.2		mg/L	2.500	ND	86	80-120			
Sulfate	18		mg/L	12.50	7.1	91	80-120			
<b>Matrix Spike (1503296-MS3)</b>				<b>Source: 15C0702-01</b>		Prepared: 03/30/2015 Analyzed: 03/31/2015				
Chloride	14		mg/L	12.50	3.0	86	80-120			
<b>Matrix Spike Dup (1503296-MSD1)</b>				<b>Source: 15C0702-01</b>		Prepared & Analyzed: 03/30/2015				
Fluoride	2.6	0.50	mg/L	2.000	0.74	93	80-120	0.3	10	
Nitrogen, Nitrate (As N)	8.8	0.50	mg/L	5.000	3.8	99	80-120	0.1	10	
<b>Matrix Spike Dup (1503296-MSD2)</b>				<b>Source: 15C0702-01</b>		Prepared: 03/30/2015 Analyzed: 03/31/2015				
Nitrogen, Nitrite (As N)	2.2		mg/L	2.500	ND	87	80-120	0.09	10	
Sulfate	18		mg/L	12.50	7.1	90	80-120	0.8	10	
<b>Matrix Spike Dup (1503296-MSD3)</b>				<b>Source: 15C0702-01</b>		Prepared: 03/30/2015 Analyzed: 03/31/2015				
Chloride	14		mg/L	12.50	3.0	87	80-120	1	10	



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com



TURNER WORK ORDER # 150699 DATE 3/30/15 PAGE 1 OF 1

PROJECT NAME Exp. GW Monitoring # 287051  
 CONTACT NAME Ben Deignaux + Victoria Hermosilla  
 COMPANY NAME Clear Creek Associates  
 ADDRESS 221 N. Court Ave. Ste 101 Tucson, AZ  
 ZIP 85701 PHONE 622-3222 EMAIL ben@clearcreekassociates.com  
 SAMPLER'S SIGNATURE [Signature]

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX		NUMBER OF CONTAINERS
Base Neutrals <input type="checkbox"/>	625/8270 <input type="checkbox"/>	3
Acids <input type="checkbox"/>	Volatile Organics <input type="checkbox"/>	
HAAS <input type="checkbox"/>	5242 <input type="checkbox"/>	
Resistivity <input type="checkbox"/>	TKN <input type="checkbox"/>	
Chloride <input checked="" type="checkbox"/>	NO <sub>3</sub> <input checked="" type="checkbox"/>	
Sulfate <input checked="" type="checkbox"/>	NO <sub>2</sub> <input checked="" type="checkbox"/>	
1664 TPH <input type="checkbox"/>	Oil & Grease <input type="checkbox"/>	
TCP Analysis <input type="checkbox"/>	Sem-VOA <input type="checkbox"/>	
Metals <input type="checkbox"/>	Total <input type="checkbox"/>	
TCRP <input type="checkbox"/>	RCRA <input type="checkbox"/>	
Dissolved <input checked="" type="checkbox"/>	Cyanide <input type="checkbox"/>	
SDWA-INORGANICS <input type="checkbox"/>	Amen. <input type="checkbox"/>	
WAD <input type="checkbox"/>	WAD <input type="checkbox"/>	
SDWA-INORGANICS PRIMARY <input type="checkbox"/>	Total <input type="checkbox"/>	
SECONDARY <input type="checkbox"/>	MPN <input type="checkbox"/>	
Coliform <input type="checkbox"/>	PH <input type="checkbox"/>	
Fecal <input type="checkbox"/>	C <sub>2</sub> <input type="checkbox"/>	
Turb <input type="checkbox"/>	C <sub>1</sub> <input type="checkbox"/>	
BOD <input type="checkbox"/>	TSS <input type="checkbox"/>	
	COD <input type="checkbox"/>	
	FCA/Mg, K, Na <input checked="" type="checkbox"/>	
	Total Alkalinity as CaCO <sub>3</sub> <input checked="" type="checkbox"/>	
	* See Decade <input checked="" type="checkbox"/>	

<p>1. RELINQUISHED BY:</p> <p>Signature: <u>[Signature]</u>                  Printed Name: <u>Ryan Toomey</u>                  Firm: <u>Clear Creek</u>                  Date/Time: <u>3/27/15 12:20</u></p>	<p>2. RECEIVED BY:</p> <p>Signature: <u>[Signature]</u>                  Printed Name: <u>Fedea</u>                  Firm: <u>Fedea</u>                  Date/Time: <u>3/30/15 15:10</u></p>	<p>3. RELINQUISHED BY:</p> <p>Signature: <u>[Signature]</u>                  Printed Name: <u>Fedea</u>                  Firm: <u>Fedea</u>                  Date/Time: <u>3/30/15 0950</u></p>	<p>4. RECEIVED BY:</p> <p>Signature: <u>[Signature]</u>                  Printed Name: <u>Kevin Brown</u>                  Firm: <u>TURNER LABORATORIES, INC.</u>                  Date/Time: <u>3/30/15 0950</u></p>
<p>TURNAROUND REQUIREMENTS:</p> <p>Standard (approx. 10 days)* <input type="checkbox"/></p> <p>Next Day 2 Day 5 Day* <input checked="" type="checkbox"/></p> <p>Email Preliminary Results <input checked="" type="checkbox"/></p> <p><i>One day turnaround for sulfate please.</i></p>		<p>* LEGEND</p> <p>SAMPLE MATRIX</p> <p>DW = DRINKING WATER                  GW = GROUNDWATER                  SD = SOLID                  SG = SLUDGE                  SL = SOIL                  ST = STORMWATER                  WW = WASTEWATER</p>	
<p>REPORT REQUIREMENTS:</p> <p>I. Routine Report <input type="checkbox"/></p> <p>II. Report (includes DUP, MS, MSD, as required, may be charged as samples) <input type="checkbox"/></p> <p>III. Date Validation Report (includes All Raw Data) Add 10% to invoice <input type="checkbox"/></p>		<p>INVOICE INFORMATION:</p> <p>Account <u>Y</u> <u>N</u></p> <p>P.O. # _____ Bill to: _____</p>	
<p>SAMPLE RECEIPT:</p> <p>Total Containers <u>3</u></p> <p>Temperature <u>4.1</u></p> <p>Wet Ice <input checked="" type="checkbox"/> Ambient <input type="checkbox"/> Blue Ice <input type="checkbox"/></p>		<p>COMPLIANCE ANALYSIS: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>ADEQ FORMS: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>MAIL ADEQ FORMS: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>SPECIAL INSTRUCTIONS/COMMENTS:</p>	
<p>INVOICE INFORMATION:</p> <p>Account <u>Y</u> <u>N</u></p> <p>P.O. # _____ Bill to: _____</p>		<p>CUSTOMER RECEIPT:</p> <p>Custody Seals <input type="checkbox"/></p> <p>Container Intact <input checked="" type="checkbox"/></p> <p>COC / Labels Agree <input checked="" type="checkbox"/></p> <p>Preservation Confirmation <input checked="" type="checkbox"/></p> <p>Appropriate Head Space <input checked="" type="checkbox"/></p> <p>Received Within Hold Time <input checked="" type="checkbox"/></p>	



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
DUP20150126	W5B0019-01	Ground Water	26-Jan-15 12:00	DP	03-Feb-2015	
DODSON	W5B0019-02	Ground Water	26-Jan-15 13:51	DP	03-Feb-2015	
PANAGAKOS	W5B0019-03	Ground Water	26-Jan-15 15:51	DP	03-Feb-2015	
EQB20150126	W5B0019-04	Ground Water	26-Jan-15 15:28	DP	03-Feb-2015	
COOPER	W5B0019-05	Ground Water	27-Jan-15 08:51	DP	03-Feb-2015	
FB20150127	W5B0019-06	Ground Water	27-Jan-15 08:55	DP	03-Feb-2015	
POWER639	W5B0019-07	Ground Water	27-Jan-15 11:06	DP	03-Feb-2015	
RUIZ	W5B0019-08	Ground Water	27-Jan-15 12:37	DP	03-Feb-2015	
BMO-2010-3B	W5B0019-09	Ground Water	28-Jan-15 10:31	DP	03-Feb-2015	
BMO-2010-3M	W5B0019-10	Ground Water	28-Jan-15 13:59	DP	03-Feb-2015	
TM-10 USBP	W5B0019-11	Ground Water	28-Jan-15 15:21	DP	03-Feb-2015	
BMO-2014-1BU	W5B0019-12	Ground Water	28-Jan-15 17:04	DP	03-Feb-2015	
AWC-05	W5B0019-13	Ground Water	29-Jan-15 10:04	DP	03-Feb-2015	
AWC-03	W5B0019-14	Ground Water	29-Jan-15 10:43	DP	03-Feb-2015	
AWC-04	W5B0019-15	Ground Water	29-Jan-15 11:19	DP	03-Feb-2015	
AWC-02	W5B0019-16	Ground Water	29-Jan-15 13:37	DP	03-Feb-2015	
BMO-2014-1BL	W5B0019-17	Ground Water	29-Jan-15 15:19	DP	03-Feb-2015	
BMO-2014-2BL	W5B0019-18	Ground Water	29-Jan-15 16:52	DP	03-Feb-2015	
BMO-2014-2BU	W5B0019-19	Ground Water	30-Jan-15 09:06	DP	03-Feb-2015	
WEED	W5B0019-20	Ground Water	30-Jan-15 10:41	DP	03-Feb-2015	

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.

Case Narrative

-2/26/2015mab: Report reissued. Client requested reanalysis for SO4 Dissolved on sample -18.

Reanalysis (analyzed in duplicate) confirmed the original result.

Reanalysis and original results are reported.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **DUP20150126**

SVL Sample ID: **W5B0019-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 26-Jan-15 12:00

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	59.9	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 10:22	D2,M3
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **DODSON**

SVL Sample ID: **W5B0019-02 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 26-Jan-15 13:51  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	59.5	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 11:00	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **PANAGAKOS**

SVL Sample ID: **W5B0019-03 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 26-Jan-15 15:51

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	428	mg/L	3.00	0.50	10	W507127	JMW	02/11/15 18:17	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **EQB20150126**

SVL Sample ID: **W5B0019-04 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 26-Jan-15 15:28

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W507095	JMW	02/10/15 17:15	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **COOPER**

SVL Sample ID: **W5B0019-05 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 27-Jan-15 08:51

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	29.8	mg/L	0.30	0.05		W507127	JMW	02/11/15 18:30	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **FB20150127**

SVL Sample ID: **W5B0019-06 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 27-Jan-15 08:55  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W507095	JMW	02/10/15 17:25	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **POWER639**

SVL Sample ID: **W5B0019-07 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 27-Jan-15 11:06  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	291	mg/L	3.00	0.50	10	W507039	JMW	02/09/15 16:19	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **RUIZ**

SVL Sample ID: **W5B0019-08 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 27-Jan-15 12:37

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	215	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 11:13	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **BMO-2010-3B**

SVL Sample ID: **W5B0019-09 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 28-Jan-15 10:31

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	19.2	mg/L	0.30	0.05		W507127	JMW	02/11/15 18:56	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **BMO-2010-3M**

SVL Sample ID: **W5B0019-10 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 28-Jan-15 13:59  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	10.6	mg/L	0.30	0.05		W507127	JMW	02/11/15 19:34	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **TM-10 USBP**

SVL Sample ID: **W5B0019-11 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 28-Jan-15 15:21  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	3.96	mg/L	0.30	0.05		W507127	JMW	02/11/15 19:47	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **BMO-2014-1BU**

SVL Sample ID: **W5B0019-12 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 28-Jan-15 17:04

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	170	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 11:26	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **AWC-05**

SVL Sample ID: **W5B0019-13 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 29-Jan-15 10:04  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	18.0	mg/L	0.30	0.05		W507127	JMW	02/11/15 20:13	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **AWC-03**

SVL Sample ID: **W5B0019-14 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 29-Jan-15 10:43  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	77.1	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 11:38	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **AWC-04**

SVL Sample ID: **W5B0019-15 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 29-Jan-15 11:19  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	22.9	mg/L	0.30	0.05		W507127	JMW	02/11/15 20:39	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **AWC-02**

SVL Sample ID: **W5B0019-16 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 29-Jan-15 13:37

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	20.5	mg/L	0.30	0.05		W507127	JMW	02/11/15 20:51	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **BMO-2014-1BL**

SVL Sample ID: **W5B0019-17 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 29-Jan-15 15:19  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	167	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 11:51	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **BMO-2014-2BL**

SVL Sample ID: **W5B0019-18 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 29-Jan-15 16:52  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	463	mg/L	3.00	0.50	10	W507127	JMW	02/11/15 21:17	D2
EPA 300.0	Sulfate as SO4	448	mg/L	3.00	0.50	10	W507127	JMW	02/25/15 18:51	D2,N10
EPA 300.0	Sulfate as SO4	436	mg/L	3.00	0.50	10	W507127	JMW	02/25/15 19:00	D2,N10

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

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

Client Sample ID: **BMO-2014-2BU**

SVL Sample ID: **W5B0019-19 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 30-Jan-15 09:06

Received: 03-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	63.8	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 12:04	D2,M3
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

Client Sample ID: **WEED**

SVL Sample ID: **W5B0019-20 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 30-Jan-15 10:41  
Received: 03-Feb-15  
Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	14.2	mg/L	3.00	0.50	10	W507127	JMW	02/12/15 13:23	D1
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0019**  
Reported: 26-Feb-15 11:24

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W507095	10-Feb-15	
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W507039	09-Feb-15	
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W507127	11-Feb-15	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W507095	10-Feb-15	
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W507039	09-Feb-15	
EPA 300.0	Sulfate as SO4	mg/L	10.5	10.0	105	90 - 110	W507127	11-Feb-15	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	40.4	28.7	10.0	118	90 - 110	W507095	10-Feb-15	M1
EPA 300.0	Sulfate as SO4	mg/L	169	160	10.0	95.8	90 - 110	W507095	10-Feb-15	D2,M3

**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	585	577	10.0	R > 4S	90 - 110	W507039	09-Feb-15	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	69.9	59.9	10.0	100	90 - 110	W507127	12-Feb-15	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	75.4	63.8	10.0	R > 4S	90 - 110	W507127	12-Feb-15	D2,M3

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	40.2	40.4	10.0	116	0.5	20	W507095	10-Feb-15	M1
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	584	585	10.0	R > 4S	0.2	20	W507039	09-Feb-15	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	69.6	69.9	10.0	97.1	0.5	20	W507127	12-Feb-15	D2,M3



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0019**

Reported: 26-Feb-15 11:24

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### 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.
N10	After reanalysis original results are confirmed.
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: **WSB0105**  
Reported: 18-Feb-15 15:44

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
EQB20150203	W5B0105-01	Distilled Water	03-Feb-15 09:11	DP	06-Feb-2015	
FB20150203	W5B0105-02	Distilled Water	03-Feb-15 09:11	DP	06-Feb-2015	
SCHWARTZ	W5B0105-03	Ground Water	03-Feb-15 09:49	DP	06-Feb-2015	
DUP20150203	W5B0105-04	Ground Water	03-Feb-15 12:00	DP	06-Feb-2015	
COB MW-2	W5B0105-05	Ground Water	04-Feb-15 10:38	DP	06-Feb-2015	
COB WL	W5B0105-06	Ground Water	04-Feb-15 13:41	DP	06-Feb-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

Client Sample ID: **EQB20150203**

SVL Sample ID: **W5B0105-01 (Distilled Water)**

**Sample Report Page 1 of 1**

Sampled: 03-Feb-15 09:11

Received: 06-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W507224	JMW	02/16/15 13:55	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

Client Sample ID: **FB20150203**

SVL Sample ID: **W5B0105-02 (Distilled Water)**

**Sample Report Page 1 of 1**

Sampled: 03-Feb-15 09:11

Received: 06-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W507224	JMW	02/16/15 14:08	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

Client Sample ID: **SCHWARTZ**

SVL Sample ID: **W5B0105-03 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 03-Feb-15 09:49

Received: 06-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	125	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 20:34	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

Client Sample ID: **DUP20150203**

SVL Sample ID: **W5B0105-04 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 03-Feb-15 12:00

Received: 06-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	126	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 21:02	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

Client Sample ID: **COB MW-2**

SVL Sample ID: **W5B0105-05 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 04-Feb-15 10:38

Received: 06-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	40.5	mg/L	1.50	0.25	5	W507266	JMW	02/13/15 21:12	D1
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

Client Sample ID: **COB WL**

SVL Sample ID: **W5B0105-06 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 04-Feb-15 13:41

Received: 06-Feb-15

Sampled By: DP

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	73.7	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 21:21	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **WSB0105**  
 Reported: 18-Feb-15 15:44

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W507224	12-Feb-15	
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W507266	13-Feb-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.6	10.0	106	90 - 110	W507224	12-Feb-15	
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W507266	13-Feb-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	98.0	88.1	10.0	99.1	90 - 110	W507224	13-Feb-15	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	11.4	<0.30	10.0	114	90 - 110	W507224	13-Feb-15	M1

**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	34.9	24.1	10.0	107	90 - 110	W507266	13-Feb-15	
EPA 300.0	Sulfate as SO4	mg/L	96.1	87.3	10.0	R > 4S	90 - 110	W507266	13-Feb-15	D2,M3

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	11.7	11.4	10.0	117	2.5	20	W507224	13-Feb-15	M1
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	35.0	34.9	10.0	109	0.4	20	W507266	13-Feb-15	
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Freeport McMoRan - Bisbee  
36 West Hwy 92  
Bisbee, AZ 85603

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0105**

Reported: 18-Feb-15 15:44

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### 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 - Bisbee  
36 West Hwy 92  
Bisbee, AZ 85603

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-6M	W5B0149-01	Ground Water	03-Feb-15 08:30	CLS	10-Feb-2015	
BMO-2008-6B	W5B0149-02	Ground Water	03-Feb-15 09:40	CLS	10-Feb-2015	
BMO-2008-5M	W5B0149-03	Ground Water	03-Feb-15 13:25	CLS	10-Feb-2015	
BMO-2008-5B	W5B0149-04	Ground Water	03-Feb-15 14:00	CLS	10-Feb-2015	
BMO-2012-1M	W5B0149-05	Ground Water	04-Feb-15 09:05	CLS	10-Feb-2015	
BMO-2008-1G	W5B0149-06	Ground Water	04-Feb-15 10:50	CLS	10-Feb-2015	
TM-7	W5B0149-07	Ground Water	04-Feb-15 12:38	CLS	10-Feb-2015	
BMO-2008-11G	W5B0149-08	Ground Water	05-Feb-15 10:00	CLS	10-Feb-2015	
BMO-2008-3B	W5B0149-09	Ground Water	05-Feb-15 15:10	CLS	10-Feb-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-6M**

SVL Sample ID: **W5B0149-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 03-Feb-15 08:30  
Received: 10-Feb-15  
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	216	mg/L	7.50	1.25	25	W507266	JMW	02/13/15 21:30	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-6B**

SVL Sample ID: **W5B0149-02 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 03-Feb-15 09:40  
Received: 10-Feb-15  
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	12.1	mg/L	0.30	0.05		W507266	JMW	02/13/15 21:40	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-5M**

SVL Sample ID: **W5B0149-03 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 03-Feb-15 13:25  
Received: 10-Feb-15  
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	143	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 21:49	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**

Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-5B**

SVL Sample ID: **W5B0149-04 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 03-Feb-15 14:00

Received: 10-Feb-15

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	227	mg/L	7.50	1.25	25	W507266	JMW	02/13/15 21:59	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2012-1M**

SVL Sample ID: **W5B0149-05 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 04-Feb-15 09:05  
Received: 10-Feb-15  
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	214	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 22:08	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-1G**

SVL Sample ID: **W5B0149-06 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 04-Feb-15 10:50  
Received: 10-Feb-15  
Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	116	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 22:18	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**

Reported: 18-Feb-15 11:15

Client Sample ID: **TM-7**

SVL Sample ID: **W5B0149-07 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 04-Feb-15 12:38

Received: 10-Feb-15

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	102	mg/L	1.50	0.25	5	W507266	JMW	02/13/15 22:27	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**

Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-11G**

SVL Sample ID: **W5B0149-08 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 05-Feb-15 10:00

Received: 10-Feb-15

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	12.5	mg/L	0.30	0.05		W507266	JMW	02/13/15 22:55	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0149**

Reported: 18-Feb-15 11:15

Client Sample ID: **BMO-2008-3B**

SVL Sample ID: **W5B0149-09 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 05-Feb-15 15:10

Received: 10-Feb-15

Sampled By: CLS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	145	mg/L	3.00	0.50	10	W507266	JMW	02/13/15 23:05	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSB0149**  
Reported: 18-Feb-15 11:15

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W507266	13-Feb-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	W507266	13-Feb-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	34.9	24.1	10.0	107	90 - 110	W507266	13-Feb-15	
EPA 300.0	Sulfate as SO4	mg/L	96.1	87.3	10.0	R > 4S	90 - 110	W507266	13-Feb-15	D2,M3

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Dissolved Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	35.0	34.9	10.0	109	0.4	20	W507266	13-Feb-15	
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**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



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0341**

Reported: 04-Mar-15 11:50

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
NWC-06	W5B0341-01	Ground Water	12-Feb-15 09:07	RT	19-Feb-2015	
FB20150212	W5B0341-02	Distilled water	12-Feb-15 10:30	RT	19-Feb-2015	
EQB20150212	W5B0341-03	Distilled water	12-Feb-15 10:30	RT	19-Feb-2015	
NWC-02	W5B0341-04	Ground Water	12-Feb-15 11:18	RT	19-Feb-2015	
DUP20150212	W5B0341-05	Ground Water	12-Feb-15 12:00	RT	19-Feb-2015	
NWC-04	W5B0341-06	Ground Water	12-Feb-15 14:40	RT	19-Feb-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5B0341**

Reported: 04-Mar-15 11:50

Client Sample ID: **NWC-06**

SVL Sample ID: **W5B0341-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 12-Feb-15 09:07

Received: 19-Feb-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	8.12	mg/L	0.30	0.05		W509086	JMW	02/23/15 23:31	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5B0341**

Reported: 04-Mar-15 11:50

Client Sample ID: **FB20150212**

SVL Sample ID: **W5B0341-02 (Distilled water)**

**Sample Report Page 1 of 1**

Sampled: 12-Feb-15 10:30

Received: 19-Feb-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W509183	JMW	02/26/15 21:42	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0341**

Reported: 04-Mar-15 11:50

Client Sample ID: **EQB20150212**

SVL Sample ID: **W5B0341-03 (Distilled water)**

**Sample Report Page 1 of 1**

Sampled: 12-Feb-15 10:30

Received: 19-Feb-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W509183	JMW	02/26/15 21:52	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5B0341**

Reported: 04-Mar-15 11:50

Client Sample ID: **NWC-02**

SVL Sample ID: **W5B0341-04 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 12-Feb-15 11:18

Received: 19-Feb-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	7.11	mg/L	0.30	0.05		W509086	JMW	02/23/15 23:41	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0341**

Reported: 04-Mar-15 11:50

Client Sample ID: **DUP20150212**

SVL Sample ID: **W5B0341-05 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 12-Feb-15 12:00

Received: 19-Feb-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	8.09	mg/L	0.30	0.05		W509086	JMW	02/23/15 23:50	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **WSB0341**

Reported: 04-Mar-15 11:50

Client Sample ID: **NWC-04**

SVL Sample ID: **W5B0341-06 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 12-Feb-15 14:40

Received: 19-Feb-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	177	mg/L	3.00	0.50	10	W509086	JMW	02/24/15 00:00	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **WSB0341**  
 Reported: 04-Mar-15 11:50

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W509183	26-Feb-15	
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W509086	23-Feb-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W509183	26-Feb-15	
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.0	10.0	100	90 - 110	W509086	23-Feb-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	27.4	16.4	10.0	111	90 - 110	W509183	26-Feb-15	M1
EPA 300.0	Sulfate as SO4	mg/L	280	280	10.0	R > 4S	90 - 110	W509183	26-Feb-15	D2,M3

**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	25.2	14.1	10.0	111	90 - 110	W509086	23-Feb-15	M1
EPA 300.0	Sulfate as SO4	mg/L	11.2	0.47	10.0	107	90 - 110	W509086	23-Feb-15	

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	27.6	27.4	10.0	112	0.6	20	W509183	26-Feb-15	M1
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	11.2	11.2	10.0	107	0.0	20	W509086	23-Feb-15	
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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: **WSB0341**

Reported: 04-Mar-15 11:50

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### Notes and Definitions

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: **W5C0184**

Reported: 18-Mar-15 14:13

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
POWER 639	W5C0184-01	Ground Water	10-Mar-15 14:10	RT	11-Mar-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W5C0184**  
Reported: 18-Mar-15 14:13

Client Sample ID: **POWER 639**

SVL Sample ID: **W5C0184-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 10-Mar-15 14:10  
Received: 11-Mar-15  
Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	265	mg/L	3.00	0.50	10	W512083	JMW	03/17/15 16:01	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **W5C0184**  
 Reported: 18-Mar-15 14:13

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W512083	17-Mar-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.2	10.0	102	90 - 110	W512083	17-Mar-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	35.8	24.7	10.0	112	90 - 110	W512083	17-Mar-15	M1
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**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	35.7	35.8	10.0	110	0.4	20	W512083	17-Mar-15	
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**Notes and Definitions**

- 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





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W5D0588**  
Reported: 05-May-15 15:06

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
POWER 639	W5D0588-01	Ground Water	28-Apr-15 17:35	RT	30-Apr-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0588**

Reported: 05-May-15 15:06

Client Sample ID: **POWER 639**

SVL Sample ID: **W5D0588-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 28-Apr-15 17:35

Received: 30-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	305	mg/L	3.00	0.50	10	W519062	MCE	05/05/15 04:12	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **WSD0588**  
 Reported: 05-May-15 15:06

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W519062	05-May-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.1	10.0	101	90 - 110	W519062	05-May-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.6	0.37	10.0	102	90 - 110	W519062	05-May-15	
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**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.7	10.6	10.0	103	1.5	20	W519062	05-May-15	
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**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



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W5D0349**  
Reported: 24-Apr-15 12:58

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2015-2BL	W5D0349-01	Ground Water	14-Apr-15 09:48	RT	17-Apr-2015	
BMO-2015-2B	W5D0349-02	Ground Water	14-Apr-15 10:45	RT	17-Apr-2015	
BMO-2015-1BL	W5D0349-03	Ground Water	14-Apr-15 11:47	RT	17-Apr-2015	
BMO-2015-1B	W5D0349-04	Ground Water	14-Apr-15 12:33	RT	17-Apr-2015	
BMO-2014-4B	W5D0349-05	Ground Water	14-Apr-15 13:39	RT	17-Apr-2015	
BMO-2014-4BL	W5D0349-06	Ground Water	14-Apr-15 14:31	RT	17-Apr-2015	
BMO-2014-3BL	W5D0349-07	Ground Water	15-Apr-15 10:25	RT	17-Apr-2015	
BMO-2014-3BU	W5D0349-08	Ground Water	15-Apr-15 11:19	RT	17-Apr-2015	
BMO-2014-2BL	W5D0349-09	Ground Water	15-Apr-15 13:00	RT	17-Apr-2015	
BMO-2014-2BU	W5D0349-10	Ground Water	15-Apr-15 13:50	RT	17-Apr-2015	
BMO-2014-1BL	W5D0349-11	Ground Water	15-Apr-15 15:00	RT	17-Apr-2015	
BMO-2014-1BU	W5D0349-12	Ground Water	15-Apr-15 15:43	RT	17-Apr-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2015-2BL**

SVL Sample ID: **W5D0349-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Apr-15 09:48

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	305	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 20:08	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**  
Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2015-2B**

SVL Sample ID: **W5D0349-02 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Apr-15 10:45  
Received: 17-Apr-15  
Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	271	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 20:19	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2015-1BL**

SVL Sample ID: **W5D0349-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 14-Apr-15 11:47

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	239	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 20:31	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2015-1B**

SVL Sample ID: **W5D0349-04 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Apr-15 12:33

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	187	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 20:42	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-4B**

SVL Sample ID: **W5D0349-05 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Apr-15 13:39

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	61.7	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 20:54	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-4BL**

SVL Sample ID: **W5D0349-06 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Apr-15 14:31

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	184	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 21:05	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-3BL**

SVL Sample ID: **W5D0349-07 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Apr-15 10:25

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	8.73	mg/L	0.33	0.06		W517232	MCE	04/24/15 10:09	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-3BU**

SVL Sample ID: **W5D0349-08 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Apr-15 11:19

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	8.71	mg/L	0.33	0.06		W517232	MCE	04/24/15 10:20	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W5D0349**  
Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-2BL**

SVL Sample ID: **W5D0349-09 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Apr-15 13:00  
Received: 17-Apr-15  
Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	463	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 21:39	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-2BU**

SVL Sample ID: **W5D0349-10 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Apr-15 13:50

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	64.8	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 21:51	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**  
Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-1BL**

SVL Sample ID: **W5D0349-11 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Apr-15 15:00  
Received: 17-Apr-15  
Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	167	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 22:25	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0349**

Reported: 24-Apr-15 12:58

Client Sample ID: **BMO-2014-1BU**

SVL Sample ID: **W5D0349-12 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Apr-15 15:43

Received: 17-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	189	mg/L	16.5	2.75	50	W517232	MCE	04/23/15 22:36	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **WSD0349**  
 Reported: 24-Apr-15 12:58

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W517232	23-Apr-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.0	10.0	100	90 - 110	W517232	23-Apr-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	30.8	21.9	10.0	88.6	90 - 110	W517232	23-Apr-15	M2
EPA 300.0	Sulfate as SO4	mg/L	26.4	17.1	10.0	93.0	90 - 110	W517232	23-Apr-15	

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	26.4	26.4	10.0	92.3	0.3	20	W517232	23-Apr-15	
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**Notes and Definitions**

- D2 Sample required dilution due to high concentration of target analyte.
- M2 Matrix spike recovery was low, 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



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **WSD0246**  
Reported: 30-Apr-15 12:37

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
NWC-04	W5D0246-01	Ground Water	09-Apr-15 12:18	RT	14-Apr-2015	

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.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W5D0246**

Reported: 30-Apr-15 12:37

Client Sample ID: **NWC-04**

SVL Sample ID: **W5D0246-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 09-Apr-15 12:18

Received: 14-Apr-15

Sampled By: RT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	182	mg/L	3.00	0.50	10	W518166	MCE	04/29/15 21:06	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **WSD0246**  
 Reported: 30-Apr-15 12:37

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W518166	29-Apr-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	9.94	10.0	99.4	90 - 110	W518166	29-Apr-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	42.3	32.3	10.0	101	90 - 110	W518166	29-Apr-15	
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**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	42.7	42.3	10.0	104	0.9	20	W518166	29-Apr-15	
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**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



June 18, 2015

William Hart  
Freeport McMoran - Copper Queen Branch  
36 W Highway 92  
Bisbee, AZ 85603-1047

TEL (520) 432-6206  
FAX

Work Order No.: 15F0520

RE: CQB

Dear William Hart,

Turner Laboratories, Inc. received 1 sample(s) on 06/11/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15F0520  
**Date Received:** 06/11/2015

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15F0520-01	Power 639	Non-Potable Water	06/11/2015 1400

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15F0520  
**Date Received:** 06/11/2015

**Case Narrative**

---

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15F0520  
**Lab Sample ID:** 15F0520-01

**Client Sample ID:** Power 639  
**Collection Date/Time:** 06/11/2015 1400  
**Matrix:** Non-Potable Water

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	310	130		mg/L	25	06/12/2015 0900	06/15/2015 1404	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15F0520  
**Date Received:** 06/11/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1506123 - E300</b>										
<b>Blank (1506123-BLK1)</b>				Prepared & Analyzed: 06/12/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1506123-BS1)</b>				Prepared & Analyzed: 06/12/2015						
Sulfate	12	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1506123-BSD1)</b>				Prepared & Analyzed: 06/12/2015						
Sulfate	13	5.0	mg/L	12.50		101	90-110	2	10	
<b>Matrix Spike (1506123-MS1)</b>				Source: 15F0504-01			Prepared & Analyzed: 06/12/2015			
Sulfate	17	5.0	mg/L	12.50	4.2	100	80-120			
<b>Matrix Spike Dup (1506123-MSD1)</b>				Source: 15F0504-01			Prepared & Analyzed: 06/12/2015			
Sulfate	17	5.0	mg/L	12.50	4.2	100	80-120	0.4	10	





May 22, 2015

Ben Daigneau  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15E0504

RE: Mitigation Order Sampling

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 05/15/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Mitigation Order Sampling  
**Work Order:** 15E0504  
**Date Received:** 05/15/2015

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15E0504-01	Power 639	Ground Water	05/14/2015 1555

**Client:** Clear Creek Associates  
**Project:** Mitigation Order Sampling  
**Work Order:** 15E0504  
**Date Received:** 05/15/2015

**Case Narrative**

---

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Clear Creek Associates  
**Project:** Mitigation Order Sampling  
**Work Order:** 15E0504  
**Lab Sample ID:** 15E0504-01

**Client Sample ID:** Power 639  
**Collection Date/Time:** 05/14/2015 1555  
**Matrix:** Ground Water

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	270	130		mg/L	25	05/15/2015 1300	05/15/2015 1520	MR

**Client:** Clear Creek Associates  
**Project:** Mitigation Order Sampling  
**Work Order:** 15E0504  
**Date Received:** 05/15/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1505150 - E300</b>										
<b>Blank (1505150-BLK1)</b>				Prepared & Analyzed: 05/15/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1505150-BS1)</b>				Prepared & Analyzed: 05/15/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110			
<b>LCS Dup (1505150-BSD1)</b>				Prepared & Analyzed: 05/15/2015						
Sulfate	12	5.0	mg/L	12.50		100	90-110	0.3	10	
<b>Matrix Spike (1505150-MS2)</b>				Source: 15E0502-01			Prepared & Analyzed: 05/15/2015			
Sulfate	24		mg/L	12.50	12	95	80-120			
<b>Matrix Spike Dup (1505150-MSD2)</b>				Source: 15E0502-01			Prepared & Analyzed: 05/15/2015			
Sulfate	24		mg/L	12.50	12	95	80-120	0.1	10	





2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 15E0504 DATE 5/15/15 PAGE 1 OF 1

PROJECT NAME \_\_\_\_\_ # \_\_\_\_\_  
 CONTACT NAME Ben Daigneau + Ryan Toomey  
 COMPANY NAME Clear Creek Associates  
 ADDRESS 221 N. Court Ave. Ste 101 Tucson, AZ  
 ZIP 85701 PHONE 622-3222 EMAIL bdaigneau@clearcreekassociates.com  
 SAMPLER'S SIGNATURE [Signature]

NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX
1	<input type="checkbox"/> BOD <input type="checkbox"/> TSS <input type="checkbox"/> COD <input type="checkbox"/> pH <input type="checkbox"/> Fecal <input type="checkbox"/> Coliform <input type="checkbox"/> MPN <input type="checkbox"/> SDWA-NONORGANICS <input type="checkbox"/> PRIMARY <input type="checkbox"/> SECONDARY <input type="checkbox"/> WAD <input type="checkbox"/> Cyanide <input type="checkbox"/> Amen. <input type="checkbox"/> Total <input type="checkbox"/> Dissolved <input type="checkbox"/> RCR48 <input type="checkbox"/> Total <input type="checkbox"/> Metals <input type="checkbox"/> TCLP <input type="checkbox"/> VOA <input type="checkbox"/> Sem-VOA <input type="checkbox"/> Pestic <input type="checkbox"/> TCLP Analysis <input type="checkbox"/> Oil & Grease <input type="checkbox"/> 1664 <input type="checkbox"/> TPH <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> Chloride <input type="checkbox"/> Sulfate <input type="checkbox"/> Resistivity <input type="checkbox"/> HAAS <input type="checkbox"/> 8260 <input type="checkbox"/> TTHMS <input type="checkbox"/> 624 <input type="checkbox"/> Volatile Organics <input type="checkbox"/> 5242 <input type="checkbox"/> Acids <input type="checkbox"/> 8270 <input type="checkbox"/> Base Neutrals

1. RELINQUISHED BY:  
 Signature [Signature]  
 Printed Name Ryan Toomey  
 Firm Clear Creek  
 Date/Time 5-15-15 12:25

2. RECEIVED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

3. RELINQUISHED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

4. RECEIVED BY:  
 Signature [Signature]  
 Printed Name TURNER LABORATORIES, INC.  
 Firm Turner Laboratories  
 Date/Time 5/15/15 12:25

TURNAROUND REQUIREMENTS:  
 Standard (approx. 10 days)\*  
 Next Day 2 Day  5 Day\*  
 Email Preliminary Results

\* Working Days

\* LEGEND  
 SAMPLE MATRIX  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

REPORT REQUIREMENTS:  
 I. Routine Report  
 II. Report (includes DUP, MS, MSD, as required, may be charged as samples)  
 III. Date Validation Report (Includes All Raw Data) Add 10% to invoice

INVOICE INFORMATION:  
 Account \_\_\_\_\_ Y \_\_\_\_\_ N  
 P.O. # \_\_\_\_\_  
 Bill to: \_\_\_\_\_

SAMPLE RECEIPT:  
 Total Containers 1  
 Temperature 1.9  
 Wet Ice  
 Ambient  
 Blue Ice

Compliance Analysis:  Yes  No  
 ADEQ Forms:  Yes  No  
 Mail ADEQ Forms:  Yes  No

SPECIAL INSTRUCTIONS/COMMENTS:

Custody Seals   
 Container Intact   
 COC/Labels Agree   
 Preservation Confirmation   
 Appropriate Head Space   
 Received Within Hold Time





August 26, 2015

Melanie Lindsey  
Clear Creek Associates  
221 N. Court Ave., Suite 101  
Tucson, AZ 85701

TEL (520) 622-3222  
FAX (520) 622-4040

Work Order No.: 15G0785  
Order Name: 287052

RE: Water Supply Study

Dear Melanie Lindsey,

Turner Laboratories, Inc. received 2 sample(s) on 07/23/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Clear Creek Associates  
**Project:** Water Supply Study  
**Work Order:** 15G0785  
**Date Received:** 07/23/2015

**Order:** 287052

**Work Order Sample Summary**

---

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15G0785-01	55-224635	Ground Water	07/22/2015 1320
15G0785-02	Trip Blank	Trip Blank	07/22/2015 0000

**Client:** Clear Creek Associates  
**Project:** Water Supply Study  
**Work Order:** 15G0785  
**Date Received:** 07/23/2015

**Case Narrative**

The asbestos analysis was performed by Fiberquant in Phoenix, AZ.

The radiochemistry analysis was performed by Radiation Safety Engineering, Inc. in Chandler, AZ.

Several synthetic organic compound analyses were performed by Eurofins Eaton Analytical in South Bend, IN.

- C4 Confirmatory analysis was past holding time
- H5 This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
- N4 The Minimum Reporting Limit (MRL) verification check did not meet laboratory acceptance limits.
- R6 LCS/LCSD RPD exceeded the method acceptance limit. Recovery met the acceptance criteria.
- S4 Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

- ND Not Detected at or above the PQL
- PQL Practical Quantitation Limit
- DF Dilution Factor

Client: Clear Creek Associates  
 Project: Water Supply Study  
 Work Order: 15G0785  
 Lab Sample ID: 15G0785-01

Client Sample ID: 55-224635  
 Collection Date/Time: 07/22/2015 1320  
 Matrix: Ground Water  
 Order Name: 287052

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>Langelier Index-Calculation</b>								
Langelier Index	0.20	-8.0		LI	1	07/24/2015 1131	08/19/2015 0955	DW
<b>Hardness, Ca-Calculation</b>								
Hardness, Calcium (As CaCO3)	120			mg/L	1	07/29/2015 1015	08/03/2015 1545	RAD
<b>Coliform by Colitag-Colitag Mod.</b>								
Total Coliform	Absent					07/23/2015 1040	07/24/2015 0845	CC
<b>pH-E150.1</b>								
pH (pH Units)	7.8	0.0	H5	-	1	07/23/2015 1035	07/23/2015 1050	MR
Temperature (°C)	20		H5	-	1	07/23/2015 1035	07/23/2015 1050	MR
<b>ICP Total Metals-E200.7</b>								
Barium	0.30	0.050		mg/L	1	07/29/2015 1015	08/03/2015 1546	RAD
Beryllium	ND	0.0020		mg/L	1	07/29/2015 1015	08/03/2015 1546	RAD
Cadmium	ND	0.0020		mg/L	1	07/29/2015 1015	08/03/2015 1546	RAD
Calcium	46	4.0		mg/L	1	07/29/2015 1015	08/03/2015 1545	RAD
Chromium	ND	0.030		mg/L	1	07/29/2015 1015	08/03/2015 1546	RAD
Copper	ND	0.020		mg/L	1	07/29/2015 1015	08/03/2015 1546	RAD
Iron	ND	0.30		mg/L	1	07/29/2015 1015	08/03/2015 1545	RAD
Magnesium	7.3	3.0		mg/L	1	07/29/2015 1015	08/03/2015 1545	RAD
Nickel	ND	0.050		mg/L	1	07/29/2015 1015	08/03/2015 1546	RAD
Sodium	16	5.0		mg/L	1	07/29/2015 1015	08/03/2015 1545	RAD
<b>ICP/MS Total Metals-E200.8</b>								
Antimony	ND	0.00050		mg/L	1	07/27/2015 1100	07/29/2015 1326	RAD
Arsenic	0.0019	0.00050		mg/L	1	07/27/2015 1100	07/29/2015 1326	RAD
Lead	ND	0.00050		mg/L	1	07/27/2015 1100	07/29/2015 1326	RAD
Selenium	ND	0.0025		mg/L	1	07/27/2015 1100	07/29/2015 1326	RAD
Thallium	ND	0.00050		mg/L	1	07/27/2015 1100	07/29/2015 1326	RAD
<b>CVAA Total Mercury-E245.1</b>								
Mercury	ND	0.0010		mg/L	1	07/27/2015 1010	07/27/2015 1546	RAD
<b>Anions by Ion Chromatography-E300</b>								
Chloride	7.5	1.0		mg/L	1	07/23/2015 1130	07/23/2015 1158	MR
Fluoride	ND	0.50		mg/L	1	07/23/2015 1130	07/23/2015 1158	MR
Nitrogen, Nitrate (As N)	1.2	0.50		mg/L	1	07/23/2015 1130	07/23/2015 1158	MR
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	07/23/2015 1130	07/23/2015 1158	MR
Sulfate	6.2	5.0		mg/L	1	07/23/2015 1130	07/23/2015 1158	MR



August 15, 2015

Linda Ambriz  
Freeport McMoran - Copper Queen Branch  
36 W Highway 92  
Bisbee, AZ 85603-1047

TEL (520) 432-6206  
FAX

Work Order No.: 15G0817  
Order Name: CQB Quarterly

RE: CQB

Dear Linda Ambriz,

Turner Laboratories, Inc. received 36 sample(s) on 07/27/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Date Received:** 07/27/2015

**Order:** CQB Quarterly

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
15G0817-01	Palmer	Ground Water	07/20/2015 1134
15G0817-02	Ness	Ground Water	07/20/2015 1525
15G0817-03	Swan	Ground Water	07/20/2015 1625
15G0817-04	AWC-105	Ground Water	07/21/2015 0920
15G0817-05	AWC-03	Ground Water	07/21/2015 0955
15G0817-06	AWC-04	Ground Water	07/21/2015 1020
15G0817-07	AWC-02	Ground Water	07/21/2015 1230
15G0817-08	Keefer	Ground Water	07/21/2015 1358
15G0817-09	Ramirez	Ground Water	07/21/2015 1542
15G0817-10	Chambers	Ground Water	07/21/2015 1627
15G0817-11	BMO-2010-3B	Ground Water	07/22/2015 0909
15G0817-12	BMO-2010-3M	Ground Water	07/22/2015 1207
15G0817-13	Anderson 458	Ground Water	07/22/2015 1500
15G0817-14	Pionke 517	Ground Water	07/22/2015 1700
15G0817-15	BMO-2014-4B	Ground Water	07/23/2015 0828
15G0817-16	BMO-2014-4BL	Ground Water	07/23/2015 0913
15G0817-17	BMO-2015-1B	Ground Water	07/23/2015 1040
15G0817-18	BMO-2015-1BL	Ground Water	07/23/2015 1133
15G0817-19	BMO-2015-2B	Ground Water	07/23/2015 1240
15G0817-20	BMO-2015-2BL	Ground Water	07/23/2015 1325
15G0817-21	Bima	Ground Water	07/23/2015 1417
15G0817-22	Noteman	Ground Water	07/23/2015 1524
15G0817-23	Dodson	Ground Water	07/23/2015 1635
15G0817-24	Eppele 641	Ground Water	07/24/2015 0929
15G0817-25	East	Ground Water	07/24/2015 1059
15G0817-26	Banks 986	Ground Water	07/24/2015 1325
15G0817-27	TM-10	Ground Water	07/24/2015 1455
15G0817-28	FB20150723	Ground Water	07/23/2015 0925
15G0817-29	EQB201523	Ground Water	07/23/2015 0928
15G0817-30	DUP20150723	Ground Water	07/23/2015 1800
15G0817-31	EQB20150722	Ground Water	07/22/2015 1219
15G0817-32	DUP20150722	Ground Water	07/22/2015 1800

15G0817-33	FB20150722	Ground Water	07/22/2015 1217
15G0817-34	DUP20150720	Ground Water	07/20/2015 1800
15G0817-35	FB20150720	Ground Water	07/20/2015 1629
15G0817-36	EQB20150720	Ground Water	07/20/2015 1630

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Date Received:** 07/27/2015

**Case Narrative**

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All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-01

**Client Sample ID:** Palmer  
**Collection Date/Time:** 07/20/2015 1134  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	18	5.0		mg/L	1	07/28/2015 1200	07/29/2015 1424	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-02

**Client Sample ID:** Ness  
**Collection Date/Time:** 07/20/2015 1525  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	54	25		mg/L	5	07/31/2015 1541	08/03/2015 1749	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-03

**Client Sample ID:** Swan  
**Collection Date/Time:** 07/20/2015 1625  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	19	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0407	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-04

**Client Sample ID:** AWC-105  
**Collection Date/Time:** 07/21/2015 0920  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	17	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0425	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-05

**Client Sample ID:** AWC-03  
**Collection Date/Time:** 07/21/2015 0955  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	56	25		mg/L	5	07/31/2015 1541	08/03/2015 1807	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-06

**Client Sample ID:** AWC-04  
**Collection Date/Time:** 07/21/2015 1020  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	23	10		mg/L	2	07/31/2015 1541	08/03/2015 1826	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-07

**Client Sample ID:** AWC-02  
**Collection Date/Time:** 07/21/2015 1230  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	20	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0616	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-08

**Client Sample ID:** Keefer  
**Collection Date/Time:** 07/21/2015 1358  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	6.1	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0634	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-09

**Client Sample ID:** Ramirez  
**Collection Date/Time:** 07/21/2015 1542  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	8.5	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0653	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-10

**Client Sample ID:** Chambers  
**Collection Date/Time:** 07/21/2015 1627  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	11	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0711	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-11

**Client Sample ID:** BMO-2010-3B  
**Collection Date/Time:** 07/22/2015 0909  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	21	5.0		mg/L	1	07/31/2015 1541	08/01/2015 0730	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-12

**Client Sample ID:** BMO-2010-3M  
**Collection Date/Time:** 07/22/2015 1207  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	8.6	5.0		mg/L	1	08/03/2015 1155	08/03/2015 1921	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-13

**Client Sample ID:** Anderson 458  
**Collection Date/Time:** 07/22/2015 1500  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	25	10		mg/L	2	08/03/2015 1155	08/04/2015 2308	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-14

**Client Sample ID:** Pionke 517  
**Collection Date/Time:** 07/22/2015 1700  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	14	5.0		mg/L	1	08/03/2015 1155	08/03/2015 1958	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-15

**Client Sample ID:** BMO-2014-4B  
**Collection Date/Time:** 07/23/2015 0828  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	57	25		mg/L	5	08/03/2015 1155	08/04/2015 2326	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-16

**Client Sample ID:** BMO-2014-4BL  
**Collection Date/Time:** 07/23/2015 0913  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	190	50		mg/L	10	08/03/2015 1155	08/05/2015 1946	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-17

**Client Sample ID:** BMO-2015-1B  
**Collection Date/Time:** 07/23/2015 1040  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	200	50		mg/L	10	08/03/2015 1155	08/05/2015 2005	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-18

**Client Sample ID:** BMO-2015-1BL  
**Collection Date/Time:** 07/23/2015 1133  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	260	130		mg/L	25	08/03/2015 1155	08/05/2015 2023	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-19

**Client Sample ID:** BMO-2015-2B  
**Collection Date/Time:** 07/23/2015 1240  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	290	130		mg/L	25	08/03/2015 1155	08/07/2015 0546	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-20

**Client Sample ID:** BMO-2015-2BL  
**Collection Date/Time:** 07/23/2015 1325  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	320	130		mg/L	25	08/03/2015 1155	08/07/2015 0604	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-21

**Client Sample ID:** Bima  
**Collection Date/Time:** 07/23/2015 1417  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	270	130		mg/L	25	08/03/2015 1155	08/07/2015 0623	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-22

**Client Sample ID:** Noteman  
**Collection Date/Time:** 07/23/2015 1524  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	290	130		mg/L	25	08/03/2015 1155	08/07/2015 2125	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-23

**Client Sample ID:** Dodson  
**Collection Date/Time:** 07/23/2015 1635  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	61	25		mg/L	5	08/03/2015 1155	08/07/2015 2143	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-24

**Client Sample ID:** Epele 641  
**Collection Date/Time:** 07/24/2015 0929  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	23	5.0		mg/L	1	08/03/2015 1155	08/03/2015 2358	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-25

**Client Sample ID:** East  
**Collection Date/Time:** 07/24/2015 1059  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	13	5.0		mg/L	1	08/03/2015 1155	08/04/2015 0053	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-26

**Client Sample ID:** Banks 986  
**Collection Date/Time:** 07/24/2015 1325  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	76	25		mg/L	5	08/03/2015 1155	08/07/2015 2202	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-27

**Client Sample ID:** TM-10  
**Collection Date/Time:** 07/24/2015 1455  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/03/2015 1155	08/04/2015 0130	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-28

**Client Sample ID:** FB20150723  
**Collection Date/Time:** 07/23/2015 0925  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/03/2015 1155	08/04/2015 0148	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-29

**Client Sample ID:** EQB201523  
**Collection Date/Time:** 07/23/2015 0928  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1050	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-30

**Client Sample ID:** DUP20150723  
**Collection Date/Time:** 07/23/2015 1800  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	170	50		mg/L	10	08/04/2015 1045	08/07/2015 2220	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-31

**Client Sample ID:** EQB20150722  
**Collection Date/Time:** 07/22/2015 1219  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1127	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-32

**Client Sample ID:** DUP20150722  
**Collection Date/Time:** 07/22/2015 1800  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	9.3	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1146	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-33

**Client Sample ID:** FB20150722  
**Collection Date/Time:** 07/22/2015 1217  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1204	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-34

**Client Sample ID:** DUP20150720  
**Collection Date/Time:** 07/20/2015 1800  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	19	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1222	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-35

**Client Sample ID:** FB20150720  
**Collection Date/Time:** 07/20/2015 1629  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1241	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15G0817  
**Lab Sample ID:** 15G0817-36

**Client Sample ID:** EQB20150720  
**Collection Date/Time:** 07/20/2015 1630  
**Matrix:** Ground Water  
**Order Name:** CQB Quarterly

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/04/2015 1045	08/04/2015 1259	MR

Client: Freeport McMoran - Copper Queen Branch  
 Project: CQB  
 Work Order: 15G0817  
 Date Received: 07/27/2015

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1507308 - E300</b>										
<b>Blank (1507308-BLK1)</b>				Prepared & Analyzed: 07/29/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1507308-BS1)</b>				Prepared & Analyzed: 07/29/2015						
Sulfate	13	5.0	mg/L	12.50		102	90-110			
<b>LCS Dup (1507308-BSD1)</b>				Prepared & Analyzed: 07/29/2015						
Sulfate	13	5.0	mg/L	12.50		103	90-110	0.5	10	
<b>Matrix Spike (1507308-MS2)</b>				Source: 15G0880-01RE1		Prepared: 07/29/2015 Analyzed: 07/30/2015				
Sulfate	18		mg/L	12.50	4.8	103	80-120			
<b>Matrix Spike Dup (1507308-MSD2)</b>				Source: 15G0880-01RE1		Prepared: 07/29/2015 Analyzed: 07/30/2015				
Sulfate	18		mg/L	12.50	4.8	103	80-120	0.3	10	
<b>Batch 1507338 - E300</b>										
<b>Blank (1507338-BLK1)</b>				Prepared & Analyzed: 07/31/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1507338-BS1)</b>				Prepared & Analyzed: 07/31/2015						
Sulfate	13	5.0	mg/L	12.50		105	90-110			
<b>LCS Dup (1507338-BSD1)</b>				Prepared & Analyzed: 07/31/2015						
Sulfate	13	5.0	mg/L	12.50		105	90-110	0.5	10	
<b>Matrix Spike (1507338-MS2)</b>				Source: 15G0817-11		Prepared: 07/31/2015 Analyzed: 08/03/2015				
Sulfate	22		mg/L	12.50	10	96	80-120			
<b>Matrix Spike Dup (1507338-MSD2)</b>				Source: 15G0817-11		Prepared: 07/31/2015 Analyzed: 08/03/2015				
Sulfate	22		mg/L	12.50	10	97	80-120	0.5	10	
<b>Batch 1508002 - E300</b>										
<b>Blank (1508002-BLK1)</b>				Prepared & Analyzed: 08/03/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508002-BS1)</b>				Prepared & Analyzed: 08/03/2015						
Sulfate	12	5.0	mg/L	12.50		98	90-110			
<b>LCS Dup (1508002-BSD1)</b>				Prepared & Analyzed: 08/03/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.7	10	
<b>Matrix Spike (1508002-MS1)</b>				Source: 15H0118-01		Prepared & Analyzed: 08/03/2015				
Sulfate	14	5.0	mg/L	12.50	0.77	104	80-120			
<b>Matrix Spike (1508002-MS3)</b>				Source: 15G0817-24		Prepared: 08/03/2015 Analyzed: 08/04/2015				
Sulfate	24		mg/L	12.50	11	102	80-120			
<b>Matrix Spike Dup (1508002-MSD1)</b>				Source: 15H0118-01		Prepared & Analyzed: 08/03/2015				
Sulfate	14	5.0	mg/L	12.50	0.77	105	80-120	0.8	10	
<b>Matrix Spike Dup (1508002-MSD3)</b>				Source: 15G0817-24		Prepared: 08/03/2015 Analyzed: 08/05/2015				
Sulfate	24		mg/L	12.50	11	102	80-120	0.4	10	

Client: Freeport McMoran - Copper Queen Branch  
 Project: CQB  
 Work Order: 15G0817  
 Date Received: 07/27/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1508015 - E300</b>										
<b>Blank (1508015-BLK1)</b>				Prepared & Analyzed: 08/04/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508015-BS1)</b>				Prepared & Analyzed: 08/04/2015						
Sulfate	13	5.0	mg/L	12.50		101	90-110			
<b>LCS Dup (1508015-BSD1)</b>				Prepared & Analyzed: 08/04/2015						
Sulfate	13	5.0	mg/L	12.50		103	90-110	1	10	
<b>Matrix Spike (1508015-MS2)</b>				Source: 15H0215-09			Prepared & Analyzed: 08/04/2015			
Sulfate	13	5.0	mg/L	12.50	ND	103	80-120			
<b>Matrix Spike (1508015-MS5)</b>				Source: 15H0234-01RE1			Prepared: 08/04/2015 Analyzed: 08/07/2015			
Sulfate	18		mg/L	12.50	5.3	101	80-120			
<b>Matrix Spike Dup (1508015-MSD2)</b>				Source: 15H0215-09			Prepared & Analyzed: 08/04/2015			
Sulfate	13	5.0	mg/L	12.50	ND	105	80-120	2	10	
<b>Matrix Spike Dup (1508015-MSD5)</b>				Source: 15H0234-01RE1			Prepared: 08/04/2015 Analyzed: 08/07/2015			
Sulfate	18		mg/L	12.50	5.3	102	80-120	0.8	10	

2445 N. Coyote Drive, Suite 104  
Tucson, Arizona 85745  
(520) 882-5880  
Fax: (520) 882-9788  
www.turnerlabs.com



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1560817 DATE 7/27/15 PAGE 1 OF 4

PROJECT NAME CQB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freepoint McMoran CQB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE [Signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																	
					NUMBER OF CONTAINERS																	
*Palmer	7/20/15	1134		GW	1																	
*Ness	7/20/15	1525		GW	1																	
*Swan	7/20/15	1625		GW	1																	
*AWC-05	7/21/15	0920		GW	1																	
*AWC-03	7/21/15	0955		GW	1																	
*AWC-04	7/21/15	1020		GW	1																	
*AWC-02	7/21/15	1230		GW	1																	
*Keeper	7/21/15	1358		GW	1																	
*Ramirez	7/21/15	1542		GW	1																	
*Chambers	7/21/15	1627		GW	1																	
*BMO-2010-35	7/22/15	0909		GW	1																	

Unfiltered  
504 - 300.0

1. RELINQUISHED BY: [Signature]  
 Signature Victoria Hernandez  
 Printed Name Clear Creek Associates  
 Firm 7/27/15 1700  
 Date/Time

2. RECEIVED BY: [Signature]  
 Signature Ryan Toomy  
 Printed Name Clear Creek  
 Firm 7/27/15 0840  
 Date/Time

3. RELINQUISHED BY: [Signature]  
 Signature Ryan Toomy  
 Printed Name Clear Creek  
 Firm 7/27/15 0910  
 Date/Time

4. RECEIVED BY: [Signature]  
 Signature N/A  
 Printed Name TURNER LABORATORIES, INC.  
 Firm 7/27/15 0910  
 Date/Time

REPORT REQUIREMENTS:  
 I. Routine Report   
 II. Report (Includes DUP, MS, MSD, as required, may be charged as samples)   
 III. Date Validation Report (Includes All Raw Data)   
 Add 10% to invoice

INVOICE INFORMATION:  
 Account  Y  N  
 P.O. # \_\_\_\_\_  
 Bill to: CQB

SAMPLE RECEIPT:  
 Total Containers 36  
 Temperature 7.7  
 Wet Ice  Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No  Custody Seals   
 ADEQ Forms:  Yes  No  Container Intact   
 Mail ADEQ Forms:  Yes  No  COC/Labels Agree   
 Preservation Confirmation  No  
 Appropriate Head Space  7  
 Received Within Hold Time  7  
All samples filtered with a 0.45µm filter, unless noted.  
Copy Results to Ben Daigneau + Bill Hart.





CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1560817 DATE 7/27/15 PAGE 2 OF 4

PROJECT NAME <u>CAB Quarterly # 287030</u> CONTACT NAME: <u>Chris Sherman</u> COMPANY NAME: <u>Freeport McMoran CAB</u> ADDRESS: <u>36 Highway 9a</u> CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u> PHONE <u>520 508 7063</u> FAX <u>520 432 1395</u> SAMPLER'S SIGNATURE _____	NUMBER OF CONTAINERS <div style="text-align: center; border: 1px solid black; padding: 5px;"> <u>Unfiltered</u>  <u>504 - 300.0</u> </div>	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																																																										
SAMPLE I.D. TIME DATE LAB I.D. SAMPLE MATRIX*	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>BMO-2010-3M</td><td>1207</td><td>7/22/15</td><td></td><td>GW</td></tr> <tr><td>Anderson 458</td><td>1500</td><td>7/22/15</td><td></td><td>GW</td></tr> <tr><td>Pioneer 517</td><td>1700</td><td>7/22/15</td><td></td><td>GW</td></tr> <tr><td>BMO-2014-4B</td><td>0828</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>BMO-2014-4BL</td><td>0913</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>BMO-2015-1B</td><td>1040</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>BMO-2015-1BL</td><td>1133</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>BMO-2015-2B</td><td>1240</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>BMO-2015-2BL</td><td>1325</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>Bina</td><td>1417</td><td>7/23/15</td><td></td><td>GW</td></tr> <tr><td>Noteman</td><td>1524</td><td>7/23/15</td><td></td><td>GW</td></tr> </table>	BMO-2010-3M	1207	7/22/15		GW	Anderson 458	1500	7/22/15		GW	Pioneer 517	1700	7/22/15		GW	BMO-2014-4B	0828	7/23/15		GW	BMO-2014-4BL	0913	7/23/15		GW	BMO-2015-1B	1040	7/23/15		GW	BMO-2015-1BL	1133	7/23/15		GW	BMO-2015-2B	1240	7/23/15		GW	BMO-2015-2BL	1325	7/23/15		GW	Bina	1417	7/23/15		GW	Noteman	1524	7/23/15		GW	TURNAROUND REQUIREMENTS: Standard (approx. 10 days)* Next day <input type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day* Email Preliminary Results To: _____ Working Days	REPORT REQUIREMENTS: <input type="checkbox"/> I. Routine Report <input checked="" type="checkbox"/> II. Report (includes DUP, MS, MSD, as required, may be charged as samples) <input type="checkbox"/> III. Date Validation Report (includes All Raw Data) Add 10% to invoice	INVOICE INFORMATION: Account <input checked="" type="checkbox"/> Y <input type="checkbox"/> N P.O. # _____ Bill to: <u>CAB</u>	SAMPLE RECEIPT: Total Containers <u>36</u> Temperature <u>7.7</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice
BMO-2010-3M	1207	7/22/15		GW																																																								
Anderson 458	1500	7/22/15		GW																																																								
Pioneer 517	1700	7/22/15		GW																																																								
BMO-2014-4B	0828	7/23/15		GW																																																								
BMO-2014-4BL	0913	7/23/15		GW																																																								
BMO-2015-1B	1040	7/23/15		GW																																																								
BMO-2015-1BL	1133	7/23/15		GW																																																								
BMO-2015-2B	1240	7/23/15		GW																																																								
BMO-2015-2BL	1325	7/23/15		GW																																																								
Bina	1417	7/23/15		GW																																																								
Noteman	1524	7/23/15		GW																																																								
SPECIAL INSTRUCTIONS/COMMENTS: Compliance Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seals <input type="checkbox"/> Preservation Confirmation <input checked="" type="checkbox"/> ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No Container Intact <input checked="" type="checkbox"/> Appropriate Head Space <input checked="" type="checkbox"/> Mail ADEQ Forms: <input type="checkbox"/> Yes <input type="checkbox"/> No COC/Labels Agree <input checked="" type="checkbox"/> Received Within Hold Time <input checked="" type="checkbox"/> <u>All samples filtered with a 0.45um filter, unless noted.</u> <u>Copy Results to Ben Daigneau + Bill Hart.</u>																																																												
2. RECEIVED BY: Signature: <u>[Signature]</u> Printed Name: <u>Ryan Toomey</u> Firm: <u>Clear Creek</u> Date/Time: <u>7/27/15 08:10</u>																																																												
3. RELINQUISHED BY: Signature: <u>[Signature]</u> Printed Name: <u>Victoria Teronillo</u> Firm: <u>Clear Creek Associates</u> Date/Time: <u>7/27/15 1700</u>																																																												
4. RECEIVED BY: Signature: <u>[Signature]</u> Printed Name: <u>K-K</u> Firm: <u>TURNER LABORATORIES, INC.</u> Date/Time: <u>7/27/15 0910</u>																																																												
* LEGEND DW = DRINKING WATER GW = GROUNDWATER SD = SOLID SG = SLUDGE SL = SOIL ST = STORMWATER WW = WASTEWATER																																																												





2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1560817 DATE 7/25/15 PAGE 3 OF 4

PROJECT NAME COB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freeport McMoran COB  
 ADDRESS: 36 Highway 9A  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE \_\_\_\_\_

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX *	NUMBER OF CONTAINERS	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																			
						1	2	3	4	5	6	7	8	9	10	11	12								
Dodson	7/23/15	1635		GW																					
Epperle 641	7/24/15	0929		GW																					
East	7/24/15	1059		GW																					
Banks 986	7/24/15	1325		GW																					
TM-10	7/24/15	1455		GW																					
Franco 150723	7/23/15	0925		DW																					
EQ 13201523	7/23/15	0928		DW																					
DP 20150723	7/23/15	1300		GW																					
COB 20150722	7/22/15	1219		DW																					
DP 20150722	7/22/15	1800		GW																					
FB 20150722	7/22/15	1217		DW																					

REPORT REQUIREMENTS:  
 I. Routine Report   
 II. Report (Includes DUP, MS, MSD, as required, may be charged as samples)   
 III. Date Validation Report (Includes All Raw Data)   
 Add 10% to invoice

INVOICE INFORMATION:  
 Account  Y  N  
 P.O. # \_\_\_\_\_  
 Bill to: COB

SAMPLE RECEIPT:  
 Total Containers 36  
 Temperature 7.7  
 Wet Ice  Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No Custody Seals  Preservation Confirmation   
 ADEQ Forms:  Yes  No Container Intact  Appropriate Head Space   
 Mail ADEQ Forms:  Yes  No COC/Labels Agree  Received Within Hold Time   
All samples filtered with a 0.45µm filter, unless noted. Copy Results to Ben Daigneau + Bill Hart.

\*LEGEND  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

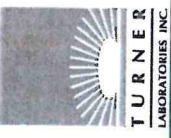
1. RELINQUISHED BY: Christina  
 Signature: Christina  
 Printed Name: Christina Sherman  
 Firm: Clear Creek Associates  
 Date/Time: 7/25/15 1700

2. RECEIVED BY: Ryan Toomey  
 Signature: Ryan Toomey  
 Printed Name: Ryan Toomey  
 Firm: Clear Creek  
 Date/Time: 7/27/15 0840

3. RELINQUISHED BY: Ryan Toomey  
 Signature: Ryan Toomey  
 Printed Name: Ryan Toomey  
 Firm: Clear Creek  
 Date/Time: 7/27/15 0910

4. RECEIVED BY: K.K.  
 Signature: K.K.  
 Printed Name: K.K.  
 Firm: TURNER LABORATORIES, INC.  
 Date/Time: 7/27/15 0910





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# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1560817 DATE 7/27/15 PAGE 4 OF 4

PROJECT NAME CAB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freeport McMoran COB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE \_\_\_\_\_

NUMBER OF CONTAINERS			CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																	
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*																
DUP20150720	7/20/15	1800		GW																
FR20150720	7/20/15	1629		GW																
FR1500150720	7/20/15	1630		GW																

Unfiltered  
 504 - 300.0

1. RELINQUISHED BY:  
 Signature [Signature]  
 Printed Name Victoria Hernandez  
 Firm Clear Creek Associates  
 Date/Time 7/27/15 1700

2. RECEIVED BY:  
 Signature [Signature]  
 Printed Name Ryan Torrey  
 Firm Clear Creek  
 Date/Time 7/27/15 0840

3. RELINQUISHED BY:  
 Signature [Signature]  
 Printed Name Ryan Torrey  
 Firm Clear Creek  
 Date/Time 7/27/15 0910

TURNAROUND REQUIREMENTS:  
 Standard (approx. 10 days)\*  
 Next day  2 Day  5 Day\*  
 Email Preliminary Results To: \_\_\_\_\_  
 \* Working Days

REPORT REQUIREMENTS:  
 I. Routine Report  
 II. Report (includes DUP, MS, MSD, as required, may be charged as samples)  
 III. Date Validation Report (Includes All Raw Data)  
 Add 10% to invoice

INVOICE INFORMATION:  
 Account  Y  N  
 P.O. # \_\_\_\_\_  
 Bill to: COB

SAMPLE RECEIPT:  
 Total Containers 36  
 Temperature 7.7  
 Wet Ice  Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No Custody Seals  No  
 ADEQ Forms:  Yes  No Container Intact   
 Mail ADEQ Forms:  Yes  No COC/Labels Agree   
 Received Within Hold Time   
 Preservation Confirmation  No  
 Appropriate Head Space   
 Received Within Hold Time   
 All samples filtered with a 0.45µm filter, unless noted.  
 Copy Results to Ben Daigneau + Bill Hart.

\* LEGEND  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER



August 25, 2015

Chris Sherman  
Freeport McMoran - Copper Queen Branch  
36 W Highway 92  
Bisbee, AZ 85603-1047

TEL (520) 432-6206  
FAX

Work Order No.: 15H0322  
Order Name: 287030

RE: CQB

Dear Chris Sherman,

Turner Laboratories, Inc. received 42 sample(s) on 08/05/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Date Received:** 08/05/2015

**Order: 287030**

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
15H0322-01	COB MW-3	Ground Water	07/27/2015 0800
15H0322-02	COB MW-2	Ground Water	07/27/2015 0845
15H0322-03	COB MW-1	Ground Water	07/27/2015 1155
15H0322-04	COB WL	Ground Water	07/27/2015 1347
15H0322-05	Panagakos	Ground Water	07/27/2015 1527
15H0322-06	Franco 383	Ground Water	07/27/2015 1648
15H0322-07	BMO-2014-1BL	Ground Water	07/29/2015 0848
15H0322-08	BMO-2014-1BU	Ground Water	07/29/2015 0929
15H0322-09	BMO-2014-2BL	Ground Water	07/29/2015 1202
15H0322-10	BMO-2014-2BU	Ground Water	07/29/2015 1246
15H0322-11	BMO-2014-3BU	Ground Water	07/29/2015 1418
15H0322-12	BMO-2014-3BL	Ground Water	07/29/2015 1548
15H0322-13	NWC-06	Ground Water	07/30/2015 0824
15H0322-14	NWC-02	Ground Water	07/30/2015 0852
15H0322-15	NWC-04	Ground Water	07/30/2015 1005
15H0322-16	TVI 875	Ground Water	07/30/2015 1153
15H0322-17	TVI 236	Ground Water	07/30/2015 1251
15H0322-18	Rogers E	Ground Water	07/30/2015 1417
15H0322-19	Ruiz	Ground Water	07/30/2015 1519
15H0322-20	Power 639	Ground Water	07/30/2015 1704
15H0322-21	M. Connell 265	Ground Water	07/31/2015 0914
15H0322-22	M. Connell 459	Ground Water	07/31/2015 1022
15H0322-23	Howard NR	Ground Water	07/31/2015 1132
15H0322-24	Howard 312	Ground Water	07/31/2015 1322
15H0322-25	Zander	Ground Water	08/03/2015 1050
15H0322-26	Thompson 341	Ground Water	08/03/2015 1145
15H0322-27	Moore	Ground Water	08/03/2015 1301
15H0322-28	Echave	Ground Water	08/03/2015 1357
15H0322-29	Burke	Ground Water	08/03/2015 1536
15H0322-30	Parra	Ground Water	08/03/2015 1624
15H0322-31	Cooper	Ground Water	08/03/2015 1712
15H0322-32	Ray	Ground Water	08/04/2015 0933

15H0322-33	Weiskopf 802	Ground Water	08/04/2015 1155
15H0322-34	Weiskopf 897	Ground Water	08/04/2015 1305
15H0322-35	Schwartz	Ground Water	08/04/2015 1458
15H0322-36	Weed	Ground Water	08/04/2015 1532
15H0322-37	Dup20150727	Ground Water	07/27/2015 1800
15H0322-38	FB20150727	Drinking Water	07/27/2015 0859
15H0322-39	EQB20150727	Drinking Water	07/27/2015 0902
15H0322-40	DUP20150804	Ground Water	08/04/2015 1800
15H0322-41	EB20150804	Drinking Water	08/04/2015 1236
15H0322-42	EQB20150804	Drinking Water	08/04/2015 1244

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Date Received:** 08/05/2015

**Case Narrative**

---

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-01

**Client Sample ID:** COB MW-3  
**Collection Date/Time:** 07/27/2015 0800  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	100	50		mg/L	10	08/07/2015 0924	08/10/2015 2201	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-02

**Client Sample ID:** COB MW-2  
**Collection Date/Time:** 07/27/2015 0845  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	40	25		mg/L	5	08/07/2015 0924	08/10/2015 2220	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-03

**Client Sample ID:** COB MW-1  
**Collection Date/Time:** 07/27/2015 1155  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	900	500		mg/L	100	08/07/2015 0924	08/10/2015 2238	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-04

**Client Sample ID:** COB WL  
**Collection Date/Time:** 07/27/2015 1347  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	70	25		mg/L	5	08/07/2015 0924	08/10/2015 2257	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-05

**Client Sample ID:** Panagakos  
**Collection Date/Time:** 07/27/2015 1527  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	470	250		mg/L	50	08/07/2015 0924	08/10/2015 2315	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-06

**Client Sample ID:** Franco 383  
**Collection Date/Time:** 07/27/2015 1648  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	320	130		mg/L	25	08/10/2015 1030	08/11/2015 1812	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-07

**Client Sample ID:** BMO-2014-1BL  
**Collection Date/Time:** 07/29/2015 0848  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	150	50		mg/L	10	08/10/2015 1030	08/11/2015 1830	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-08

**Client Sample ID:** BMO-2014-1BU  
**Collection Date/Time:** 07/29/2015 0929  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	170	50		mg/L	10	08/10/2015 1030	08/11/2015 1849	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-09

**Client Sample ID:** BMO-2014-2BL  
**Collection Date/Time:** 07/29/2015 1202  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	450	130		mg/L	25	08/11/2015 1033	08/12/2015 2307	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-10

**Client Sample ID:** BMO-2014-2BU  
**Collection Date/Time:** 07/29/2015 1246  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	58	25		mg/L	5	08/11/2015 1033	08/11/2015 1258	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-11

**Client Sample ID:** BMO-2014-3BU  
**Collection Date/Time:** 07/29/2015 1418  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	7.5	5.0		mg/L	1	08/11/2015 1033	08/12/2015 2326	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-12

**Client Sample ID:** BMO-2014-3BL  
**Collection Date/Time:** 07/29/2015 1548  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	7.9	5.0		mg/L	1	08/11/2015 1033	08/12/2015 2344	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-13

**Client Sample ID:** NWC-06  
**Collection Date/Time:** 07/30/2015 0824  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	8.2	5.0		mg/L	1	08/11/2015 1033	08/13/2015 0003	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-14

**Client Sample ID:** NWC-02  
**Collection Date/Time:** 07/30/2015 0852  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	6.3	5.0		mg/L	1	08/11/2015 1033	08/11/2015 1412	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-15

**Client Sample ID:** NWC-04  
**Collection Date/Time:** 07/30/2015 1005  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	200	50		mg/L	10	08/11/2015 1033	08/13/2015 0021	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-16

**Client Sample ID:** TVI 875  
**Collection Date/Time:** 07/30/2015 1153  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	280	130		mg/L	25	08/12/2015 1215	08/13/2015 1936	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-17

**Client Sample ID:** TVI 236  
**Collection Date/Time:** 07/30/2015 1251  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	16	5.0		mg/L	1	08/12/2015 1215	08/12/2015 1335	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-18

**Client Sample ID:** Rogers E  
**Collection Date/Time:** 07/30/2015 1417  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	5.9	5.0		mg/L	1	08/12/2015 1215	08/12/2015 1354	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-19

**Client Sample ID:** Ruiz  
**Collection Date/Time:** 07/30/2015 1519  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	190	50		mg/L	10	08/12/2015 1215	08/13/2015 2050	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-20

**Client Sample ID:** Power 639  
**Collection Date/Time:** 07/30/2015 1704  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	290	130		mg/L	25	08/12/2015 1215	08/13/2015 2108	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-21

**Client Sample ID:** M. Connell 265  
**Collection Date/Time:** 07/31/2015 0914  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	950	500		mg/L	100	08/12/2015 1215	08/13/2015 2127	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-22

**Client Sample ID:** M. Connell 459  
**Collection Date/Time:** 07/31/2015 1022  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	29	10		mg/L	2	08/12/2015 1215	08/13/2015 2145	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-23

**Client Sample ID:** Howard NR  
**Collection Date/Time:** 07/31/2015 1132  
**Matrix:** Ground Water  
**Order Name:** 287030

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	480	250		mg/L	50	08/13/2015 0838	08/14/2015 2340	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-24

**Client Sample ID:** Howard 312  
**Collection Date/Time:** 07/31/2015 1322  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	68	25		mg/L	5	08/13/2015 0838	08/14/2015 2358	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-25

**Client Sample ID:** Zander  
**Collection Date/Time:** 08/03/2015 1050  
**Matrix:** Ground Water  
**Order Name:** 287030

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	6.5	5.0		mg/L	1	08/13/2015 0838	08/13/2015 1229	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-26

**Client Sample ID:** Thompson 341  
**Collection Date/Time:** 08/03/2015 1145  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	7.5	5.0		mg/L	1	08/13/2015 0838	08/13/2015 1247	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-27

**Client Sample ID:** Moore  
**Collection Date/Time:** 08/03/2015 1301  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	7.1	5.0		mg/L	1	08/13/2015 0838	08/13/2015 1306	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-28

**Client Sample ID:** Echave  
**Collection Date/Time:** 08/03/2015 1357  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	25	10		mg/L	2	08/13/2015 0838	08/15/2015 0017	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-29

**Client Sample ID:** Burke  
**Collection Date/Time:** 08/03/2015 1536  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	27	10		mg/L	2	08/13/2015 0838	08/15/2015 0130	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-30

**Client Sample ID:** Parra  
**Collection Date/Time:** 08/03/2015 1624  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	390	130		mg/L	25	08/13/2015 0838	08/15/2015 0149	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-31

**Client Sample ID:** Cooper  
**Collection Date/Time:** 08/03/2015 1712  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	27	10		mg/L	2	08/13/2015 0838	08/15/2015 0207	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-32

**Client Sample ID:** Ray  
**Collection Date/Time:** 08/04/2015 0933  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	130	50		mg/L	10	08/13/2015 0838	08/15/2015 0226	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-33

**Client Sample ID:** Weiskopf 802  
**Collection Date/Time:** 08/04/2015 1155  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	700	250		mg/L	50	08/13/2015 0838	08/15/2015 0244	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-34

**Client Sample ID:** Weiskopf 897  
**Collection Date/Time:** 08/04/2015 1305  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	17	5.0		mg/L	1	08/13/2015 0838	08/13/2015 1822	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-35

**Client Sample ID:** Schwartz  
**Collection Date/Time:** 08/04/2015 1458  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	110	50		mg/L	10	08/13/2015 0838	08/15/2015 0303	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-36

**Client Sample ID:** Weed  
**Collection Date/Time:** 08/04/2015 1532  
**Matrix:** Ground Water  
**Order Name:** 287030

Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	13	5.0		mg/L	1	08/14/2015 1105	08/14/2015 1159	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-37

**Client Sample ID:** Dup20150727  
**Collection Date/Time:** 07/27/2015 1800  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	42	10		mg/L	2	08/14/2015 1105	08/14/2015 1958	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-38

**Client Sample ID:** FB20150727  
**Collection Date/Time:** 07/27/2015 0859  
**Matrix:** Drinking Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/14/2015 1105	08/14/2015 1236	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-39

**Client Sample ID:** EQB20150727  
**Collection Date/Time:** 07/27/2015 0902  
**Matrix:** Drinking Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/14/2015 1105	08/14/2015 1254	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-40

**Client Sample ID:** DUP20150804  
**Collection Date/Time:** 08/04/2015 1800  
**Matrix:** Ground Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	700	250		mg/L	50	08/14/2015 1105	08/14/2015 2017	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-41

**Client Sample ID:** EB20150804  
**Collection Date/Time:** 08/04/2015 1236  
**Matrix:** Drinking Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/14/2015 1105	08/14/2015 1331	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Lab Sample ID:** 15H0322-42

**Client Sample ID:** EQB20150804  
**Collection Date/Time:** 08/04/2015 1244  
**Matrix:** Drinking Water  
**Order Name:** 287030

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	08/14/2015 1105	08/14/2015 1349	MR



Client: Freeport McMoran - Copper Queen Branch  
 Project: CQB  
 Work Order: 15H0322  
 Date Received: 08/05/2015

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1508071 - E300</b>										
<b>Blank (1508071-BLK1)</b>				Prepared & Analyzed: 08/07/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508071-BS1)</b>				Prepared & Analyzed: 08/07/2015						
Sulfate	13	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1508071-BSD1)</b>				Prepared & Analyzed: 08/07/2015						
Sulfate	13	5.0	mg/L	12.50		100	90-110	0.1	10	
<b>Matrix Spike (1508071-MS1)</b>				Source: 15H0215-01			Prepared & Analyzed: 08/07/2015			
Sulfate	19	5.0	mg/L	12.50	6.8	96	80-120			
<b>Matrix Spike Dup (1508071-MSD1)</b>				Source: 15H0215-01			Prepared & Analyzed: 08/07/2015			
Sulfate	19	5.0	mg/L	12.50	6.8	97	80-120	0.4	10	
<b>Batch 1508084 - E300</b>										
<b>Blank (1508084-BLK1)</b>				Prepared & Analyzed: 08/10/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508084-BS1)</b>				Prepared & Analyzed: 08/10/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110			
<b>LCS Dup (1508084-BSD1)</b>				Prepared & Analyzed: 08/10/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.3	10	
<b>Matrix Spike (1508084-MS1)</b>				Source: 15H0397-01			Prepared & Analyzed: 08/10/2015			
Sulfate	16	5.0	mg/L	12.50	4.1	96	80-120			
<b>Matrix Spike Dup (1508084-MSD1)</b>				Source: 15H0397-01			Prepared & Analyzed: 08/10/2015			
Sulfate	16	5.0	mg/L	12.50	4.1	97	80-120	0.8	10	
<b>Batch 1508094 - E300</b>										
<b>Blank (1508094-BLK1)</b>				Prepared & Analyzed: 08/11/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508094-BS1)</b>				Prepared & Analyzed: 08/11/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110			
<b>LCS Dup (1508094-BSD1)</b>				Prepared & Analyzed: 08/11/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.06	10	
<b>Matrix Spike (1508094-MS1)</b>				Source: 15H0397-08			Prepared & Analyzed: 08/11/2015			
Sulfate	14	5.0	mg/L	12.50	2.5	96	80-120			
<b>Matrix Spike Dup (1508094-MSD1)</b>				Source: 15H0397-08			Prepared & Analyzed: 08/11/2015			
Sulfate	14	5.0	mg/L	12.50	2.5	96	80-120	0.2	10	
<b>Batch 1508115 - E300</b>										
<b>Blank (1508115-BLK1)</b>				Prepared & Analyzed: 08/12/2015						
Sulfate	ND	5.0	mg/L							

Client: Freeport McMoran - Copper Queen Branch  
 Project: CQB  
 Work Order: 15H0322  
 Date Received: 08/05/2015

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1508115 - E300</b>										
<b>LCS (1508115-BS1)</b>				Prepared & Analyzed: 08/12/2015						
Sulfate	13	5.0	mg/L	12.50		108	90-110			
<b>LCS Dup (1508115-BSD1)</b>				Prepared & Analyzed: 08/12/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110	8	10	
<b>Matrix Spike (1508115-MS2)</b>				Source: 15H0492-02RE1		Prepared & Analyzed: 08/12/2015				
Sulfate	17		mg/L	12.50	5.5	93	80-120			
<b>Matrix Spike Dup (1508115-MSD2)</b>				Source: 15H0492-02RE1		Prepared & Analyzed: 08/12/2015				
Sulfate	17		mg/L	12.50	5.5	93	80-120	0.4	10	
<b>Batch 1508136 - E300</b>										
<b>Blank (1508136-BLK1)</b>				Prepared & Analyzed: 08/13/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508136-BS1)</b>				Prepared & Analyzed: 08/13/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110			
<b>LCS Dup (1508136-BSD1)</b>				Prepared & Analyzed: 08/13/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.09	10	
<b>Matrix Spike (1508136-MS2)</b>				Source: 15H0554-01		Prepared & Analyzed: 08/13/2015				
Sulfate	22		mg/L	12.50	9.5	97	80-120			
<b>Matrix Spike (1508136-MS3)</b>				Source: 15H0546-01		Prepared & Analyzed: 08/13/2015				
Sulfate	20	5.0	mg/L	12.50	7.1	101	80-120			
<b>Matrix Spike Dup (1508136-MSD2)</b>				Source: 15H0554-01		Prepared & Analyzed: 08/13/2015				
Sulfate	22		mg/L	12.50	9.5	99	80-120	1	10	
<b>Matrix Spike Dup (1508136-MSD3)</b>				Source: 15H0546-01		Prepared & Analyzed: 08/13/2015				
Sulfate	20	5.0	mg/L	12.50	7.1	101	80-120	0.3	10	
<b>Batch 1508160 - E300</b>										
<b>Blank (1508160-BLK1)</b>				Prepared & Analyzed: 08/14/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1508160-BS1)</b>				Prepared & Analyzed: 08/14/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110			
<b>LCS Dup (1508160-BSD1)</b>				Prepared & Analyzed: 08/14/2015						
Sulfate	12	5.0	mg/L	12.50		99	90-110	0.4	10	
<b>Matrix Spike (1508160-MS2)</b>				Source: 15H0564-01RE1		Prepared & Analyzed: 08/14/2015				
Sulfate	20		mg/L	12.50	7.7	100	80-120			
<b>Matrix Spike (1508160-MS3)</b>				Source: 15H0359-01		Prepared & Analyzed: 08/14/2015				
Sulfate	23		mg/L	12.50	11	100	80-120			
<b>Matrix Spike Dup (1508160-MSD2)</b>				Source: 15H0564-01RE1		Prepared & Analyzed: 08/14/2015				
Sulfate	20		mg/L	12.50	7.7	101	80-120	0.2	10	

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15H0322  
**Date Received:** 08/05/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1508160 - E300</b>										
<b>Matrix Spike Dup (1508160-MSD3)</b>		<b>Source: 15H0359-01</b>			Prepared & Analyzed: 08/14/2015					
Sulfate	23		mg/L	12.50	11	101	80-120	0.5	10	

2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 15110322 DATE 8/5/15 PAGE 1 OF 4

PROJECT NAME CAB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freeport McMoran CAB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE \_\_\_\_\_

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX															
					1	2	3	4	5	6	7	8	9	10						
C05 MW-3	7/27/15	0800		GW																
C03 MW-2	7/27/15	0845		GW																
C05 MW-1	7/27/15	1155		GW																
C03 WL	7/27/15	1347		GW																
Panacochas	7/27/15	1527		GW																
Franko 383	7/27/15	1648		GW																
BMO-2014-1BL	7/29/15	0848		GW																
BMO-2014-1BL	7/29/15	0929		GW																
BMO-2014-2BL	7/29/15	1202		GW																
BMO-2014-2BL	7/29/15	1246		GW																
BMO-2014-3BL	7/29/15	1418		GW																

NUMBER OF CONTAINERS  
504 - 300.0  
Unfiltered

1. RELINQUISHED BY: \_\_\_\_\_  
 Signature: Victoria Lemosilla  
 Printed Name: Clear Creek Associates  
 Firm: 8/5/15 1537  
 Date/Time: \_\_\_\_\_

2. RECEIVED BY: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

3. RELINQUISHED BY: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

4. RECEIVED BY: \_\_\_\_\_  
 Signature: [Signature]  
 Printed Name: K.K.  
 Firm: TURNER LABORATORIES, INC.  
 Date/Time: 8/5/15 1537

REPORT REQUIREMENTS:  
 I. Routine Report \_\_\_\_\_  
 II. Report (Includes DUP, MS, MSD, as required, may be charged as samples)   
 III. Date Validation Report (Includes All Raw Data) \_\_\_\_\_  
 Add 10% to invoice \_\_\_\_\_

INVOICE INFORMATION:  
 Account  Y \_\_\_\_\_ N \_\_\_\_\_  
 P.O. # \_\_\_\_\_  
 Bill to: CAB

SAMPLE RECEIPT:  
 Total Containers 42  
 Temperature 3.6  
 Wet Ice  Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No  Custody Seals   
 ADEQ Forms:  Yes  No  Container Intact   
 Mail ADEQ Forms:  Yes  No  COC/Labels Agree   
 Preservation Confirmation   
 Appropriate Head Space   
 Received Within Hold Time   
All samples filtered with a 0.45um filter, unless noted.  
Copy Results to Ben Daigneau + Bill Hart.

\*LEGEND  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

\* Turnaround Requirements:  
 Standard (approx. 10 days)\*  
 Next day \_\_\_\_\_ 2 Day \_\_\_\_\_ 5 Day\* \_\_\_\_\_  
 Email Preliminary Results To: \_\_\_\_\_  
 \* Working Days





2445 N. Coyote Drive, Suite 104  
Tucson, Arizona 85745  
(520) 882-5880  
Fax: (520) 882-9788  
www.turnerlabs.com

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1540322 DATE 8/5/15 PAGE 2 OF 4

PROJECT NAME CAB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME : Freeport McMoran COB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE \_\_\_\_\_

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX														
					NUMBER OF CONTAINERS														
390-2014-322	7/29/15	1548		GW	1														
NWC-06	7/30/15	0824		GW	1														
NWC-02	7/30/15	0852		GW	1														
NWC-04	7/30/15	1005		GW	1														
TVE 875	7/30/15	1153		GW	1														
TVE 236	7/30/15	1251		GW	1														
Bogers E	7/30/15	1417		GW	1														
Ruiz	7/30/15	1519		GW	1														
Power 639	7/30/15	1707		GW	1														
McConnell 265	7/31/15	0914		GW	1														
McConnell 459	7/31/15	1022		GW	1														

1. RELINQUISHED BY:  
 Signature Victoria Hernandez  
 Printed Name Victoria Hernandez  
 Firm Clear Creek Associates, Inc  
 Date/Time 8/5/15 1537

2. RECEIVED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

3. RELINQUISHED BY:  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

4. RECEIVED BY:  
 Signature [Signature]  
 Printed Name N.K.  
 Firm TURNER LABORATORIES, INC.  
 Date/Time 8/5/15 1537

REPORT REQUIREMENTS:  
 Routine Report  
 II. Report (Includes DUP, MS, MSD, as required, may be charged as samples)  
 III. Date Validation Report (Includes All Raw Data)  
 Add 10% to invoice

INVOICE INFORMATION:  
 Account  Y  N  
 P.O. # \_\_\_\_\_  
 Bill to: COB

SAMPLE RECEIPT:  
 Total Containers 42  
 Temperature 3.6  
 Wet Ice  Blue Ice

\* LEGEND  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No  
 ADEQ Forms:  Yes  No  
 Mail ADEQ Forms:  Yes  No  
 All samples filtered with a 0.45µm filter, unless noted.  
 Copy Results to Ben Daigneau + Bill Hart.

CUSTOMER CONFIRMATION:  
 Preservation Confirmation NO  
 Appropriate Head Space   
 Received Within Hold Time



2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1540322 DATE 8/5/15 PAGE 3 OF 4

PROJECT NAME COB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freeport McMoran COB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE \_\_\_\_\_

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard (approx. 10 days) Next day <input type="checkbox"/> 2 Day <input type="checkbox"/> 5 Day* Email Preliminary Results To: _____ * Working Days	REPORT REQUIREMENTS: I. Routine Report II. Report (Includes DUP, MS, MSD, as required, may be charged as samples) III. Date Validation Report (Includes All Raw Data) Add 10% to invoice	INVOICE INFORMATION: Account <input checked="" type="checkbox"/> Y <input type="checkbox"/> N P.O. # _____ Bill to: <u>COB</u>	SAMPLE RECEIPT: Total Containers <u>42</u> Temperature <u>3.6</u> <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX														
									NUMBER OF CONTAINERS														
Howard NR	7/31/15	1132		GW	<input checked="" type="checkbox"/>																		
Howard 312	7/31/15	1322		GW	<input checked="" type="checkbox"/>																		
Zander	8/3/15	1050		GW	<input checked="" type="checkbox"/>																		
Thompson 241	8/3/15	1145		GW	<input checked="" type="checkbox"/>																		
Moorer	8/3/15	1301		GW	<input checked="" type="checkbox"/>																		
Echwe	8/3/15	1357		GW	<input checked="" type="checkbox"/>																		
Burbe	8/3/15	1536		GW	<input checked="" type="checkbox"/>																		
Parra	8/3/15	1624		GW	<input checked="" type="checkbox"/>																		
Cooper	8/3/15	1712		GW	<input checked="" type="checkbox"/>																		
Ray	8/4/15	0933		GW	<input checked="" type="checkbox"/>																		
Weisloof 502	8/4/15	1155		GW	<input checked="" type="checkbox"/>																		

1. RELINQUISHED BY: \_\_\_\_\_  
 Signature: Victoria Hernandez  
 Printed Name: Clear Creek Associates  
 Firm: 8/5/15 1537  
 Date/Time: \_\_\_\_\_

2. RECEIVED BY: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

3. RELINQUISHED BY: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

4. RECEIVED BY: \_\_\_\_\_  
 Signature: [Signature]  
 Printed Name: TURNER LABORATORIES, INC.  
 Firm: 8/5/15 1537  
 Date/Time: \_\_\_\_\_

\* LEGEND  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No Custody Seals  Preservation Confirmation   
 ADEQ Forms:  Yes  No Container Intact  Appropriate Head Space   
 Mail ADEQ Forms:  Yes  No COC/Labels Agree  Received Within Hold Time   
All samples filtered with a 0.45um filter, unless noted.  
Copy Results to Ben Daigneau + Bill Hart.





CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1510322 DATE 8/15/15 PAGE 2 OF 4

PROJECT NAME COB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freeport McMoran COB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE \_\_\_\_\_

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX																
					1	2	3	4	5	6	7	8	9	10							
Wiskopf 897	8/4/15	1305		GW																	
Schwartz	8/4/15	1458		GW																	
Wood	8/4/15	1532		GW																	
DUP20150727	7/27/15	1800		GW																	
P320150727	7/27/15	0859		DW																	
EQB20150727	7/27/15	0902		DW																	
DUP20150804	8/4/15	1800		GW																	
F2020150804	8/4/15	1236		DW																	
COB20150804	8/4/15	1244		DW																	

NUMBER OF CONTAINERS  
504 - 300.0  
Unfiltered

1. RELINQUISHED BY: \_\_\_\_\_  
 Signature [Signature]  
 Printed Name Victoria Hernandez  
 Firm Clear Creek Associates  
 Date/Time 8/15/15 1537

2. RECEIVED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

3. RELINQUISHED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

4. RECEIVED BY: \_\_\_\_\_  
 Signature [Signature]  
 Printed Name Turner Laboratories, Inc.  
 Firm \_\_\_\_\_  
 Date/Time 9/15/15 1537

REPORT REQUIREMENTS:  
 I. Routine Report \_\_\_\_\_  
 II. Report (Includes DUP, MS, MSD, as required, may be charged as samples)   
 III. Date Validation Report (Includes All Raw Data) \_\_\_\_\_  
 Add 10% to invoice \_\_\_\_\_

INVOICE INFORMATION:  
 Account  Y \_\_\_\_\_ N \_\_\_\_\_  
 P.O. # \_\_\_\_\_  
 Bill to: COB

SAMPLE RECEIPT:  
 Total Containers 42  
 Temperature 3.6  
 Wet Ice  Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No  Custody Seals   
 ADEQ Forms:  Yes  No  Container Intact   
 Mail ADEQ Forms:  Yes  No  COC/Labels Agree   
 Preservation Confirmation   
 Appropriate Head Space   
 Received Within Hold Time   
All samples filtered with a 0.45µm filter, unless noted.  
Copy Results to Ben Daigneau + Bill Hart.



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W5I0321**  
Reported: 30-Sep-15 13:54

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
BMO-2008-5M	W5I0321-01	Ground Water	08-Sep-15 09:00	CRS	16-Sep-2015	
BMO-2008-5B	W5I0321-02	Ground Water	08-Sep-15 09:35	CRS	16-Sep-2015	
BMO-2008-6M	W5I0321-03	Ground Water	08-Sep-15 10:40	CRS	16-Sep-2015	
BMO-2008-6B	W5I0321-04	Ground Water	08-Sep-15 11:30	CRS	16-Sep-2015	
TM-15	W5I0321-05	Ground Water	08-Sep-15 12:45	CRS	16-Sep-2015	
BMO-2010-1M	W5I0321-06	Ground Water	09-Sep-15 12:55	CRS	16-Sep-2015	
BMO-2008-1G	W5I0321-07	Ground Water	10-Sep-15 10:00	CRS	16-Sep-2015	
BMO-2012-1M	W5I0321-08	Ground Water	10-Sep-15 12:05	CRS	16-Sep-2015	
TM-19A	W5I0321-09	Ground Water	10-Sep-15 13:40	CRS	16-Sep-2015	
HOBAN	W5I0321-10	Ground Water	10-Sep-15 14:55	CRS	16-Sep-2015	
COOPER C	W5I0321-11	Ground Water	10-Sep-15 16:00	CRS	16-Sep-2015	
BMO-2008-7M	W5I0321-12	Ground Water	14-Sep-15 09:30	CRS	16-Sep-2015	
BMO-2008-11G	W5I0321-13	Ground Water	14-Sep-15 11:20	CRS	16-Sep-2015	
DUP-091415	W5I0321-14	Ground Water	14-Sep-15 11:20	CRS	16-Sep-2015	
BMO-2008-9M	W5I0321-15	Ground Water	14-Sep-15 13:50	CRS	16-Sep-2015	
BMO-2008-3B	W5I0321-16	Ground Water	14-Sep-15 15:05	CRS	16-Sep-2015	
TM-7	W5I0321-17	Ground Water	15-Sep-15 09:08	CRS	16-Sep-2015	
BMO-2008-8M	W5I0321-18	Ground Water	15-Sep-15 12:55	CRS	16-Sep-2015	
FB-091515	W5I0321-19	Ground Water	15-Sep-15 11:00	CRS	16-Sep-2015	
EQB-091515	W5I0321-20	Ground Water	15-Sep-15 11:10	CRS	16-Sep-2015	

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.





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-5M**

SVL Sample ID: **W510321-01 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 08-Sep-15 09:00

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	146	mg/L	3.00	0.50	10	W538233	DT	09/29/15 15:37	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-5B**

SVL Sample ID: **W510321-02 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 08-Sep-15 09:35

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	236	mg/L	3.00	0.50	10	W538233	DT	09/29/15 15:48	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-6M**

SVL Sample ID: **W510321-03 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 08-Sep-15 10:40

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	222	mg/L	3.00	0.50	10	W538233	DT	09/29/15 15:58	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-6B**

SVL Sample ID: **W510321-04 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 08-Sep-15 11:30

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	11.8	mg/L	3.00	0.50	10	W538233	DT	09/29/15 16:09	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **TM-15**

SVL Sample ID: **W510321-05 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 08-Sep-15 12:45

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	14.7	mg/L	0.30	0.05		W538233	DT	09/29/15 16:20	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2010-1M**

SVL Sample ID: **W510321-06 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 09-Sep-15 12:55

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	170	mg/L	3.00	0.50	10	W538233	DT	09/29/15 17:13	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-1G**

SVL Sample ID: **W510321-07 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 10-Sep-15 10:00

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	109	mg/L	3.00	0.50	10	W538233	DT	09/29/15 17:23	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2012-1M**

SVL Sample ID: **W510321-08 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 10-Sep-15 12:05

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	216	mg/L	3.00	0.50	10	W538233	DT	09/29/15 17:34	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W510321**  
Reported: 30-Sep-15 13:54

Client Sample ID: **TM-19A**

SVL Sample ID: **W510321-09 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 10-Sep-15 13:40  
Received: 16-Sep-15  
Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	61.4	mg/L	3.00	0.50	10	W538233	DT	09/29/15 17:44	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **HOBAN**

SVL Sample ID: **W510321-10 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 10-Sep-15 14:55

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	1030	mg/L	30.0	5.00	100	W538233	DT	09/29/15 17:55	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
Work Order: **W510321**  
Reported: 30-Sep-15 13:54

Client Sample ID: **COOPER C**

SVL Sample ID: **W510321-11 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 10-Sep-15 16:00  
Received: 16-Sep-15  
Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	641	mg/L	15.0	2.50	50	W538233	DT	09/29/15 18:06	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-7M**

SVL Sample ID: **W510321-12 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Sep-15 09:30

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	30.6	mg/L	1.50	0.25	5	W538233	DT	09/29/15 18:16	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-11G**

SVL Sample ID: **W510321-13 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Sep-15 11:20

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	12.3	mg/L	0.30	0.05		W538233	DT	09/29/15 18:27	M1
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **DUP-091415**

SVL Sample ID: **W510321-14 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Sep-15 11:20

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	12.4	mg/L	0.30	0.05		W538233	DT	09/29/15 18:48	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-9M**

SVL Sample ID: **W510321-15 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Sep-15 13:50

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	85.6	mg/L	3.00	0.50	10	W538233	DT	09/29/15 19:20	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-3B**

SVL Sample ID: **W510321-16 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 14-Sep-15 15:05

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	133	mg/L	3.00	0.50	10	W538233	DT	09/30/15 12:50	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **TM-7**

SVL Sample ID: **W510321-17 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Sep-15 09:08

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	91.3	mg/L	1.50	0.25	5	W538233	DT	09/29/15 19:41	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **BMO-2008-8M**

SVL Sample ID: **W510321-18 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Sep-15 12:55

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	67.0	mg/L	3.00	0.50	10	W538233	DT	09/29/15 19:52	D2
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **FB-091515**

SVL Sample ID: **W510321-19 (Ground Water)**

**Sample Report Page 1 of 1**

Sampled: 15-Sep-15 11:00

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W538233	DT	09/29/15 20:03	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**

Work Order: **W510321**

Reported: 30-Sep-15 13:54

Client Sample ID: **EQB-091515**

SVL Sample ID: **W510321-20 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 15-Sep-15 11:10

Received: 16-Sep-15

Sampled By: CRS

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W538233	DT	09/29/15 20:13	
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This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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

**Project Name: Copper Queen Branch Sulfate Mitigation Order**  
 Work Order: **W510321**  
 Reported: 30-Sep-15 13:54

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.05	0.30	W538233	29-Sep-15	
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**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	10.0	10.0	100	90 - 110	W538233	29-Sep-15	
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**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	25.6	14.7	10.0	110	90 - 110	W538233	29-Sep-15	
EPA 300.0	Sulfate as SO4	mg/L	23.5	12.3	10.0	112	90 - 110	W538233	29-Sep-15	M1

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Filtered Anions by Ion Chromatography**

EPA 300.0	Sulfate as SO4	mg/L	25.6	25.6	10.0	110	0.0	20	W538233	29-Sep-15	
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**Notes and Definitions**

- 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



October 22, 2015

Linda Ambriz  
Freeport McMoran - Copper Queen Branch  
36 W Highway 92  
Bisbee, AZ 85603-1047

TEL (520) 432-6206  
FAX

Work Order No.: 15J0379  
Order Name: CQB

RE: CQB

Dear Linda Ambriz,

Turner Laboratories, Inc. received 16 sample(s) on 10/08/2015 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.  
ADHS License AZ0066

Terri Garcia  
Technical Director

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Date Received:** 10/08/2015

**Order:** CQB

**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date/Time</b>
15J0379-01	BMO-2014-4B	Ground Water	10/06/2015 0845
15J0379-02	BMO-2014-4BL	Ground Water	10/06/2015 0856
15J0379-03	BMO-2015-1B	Ground Water	10/06/2015 1033
15J0379-04	BMO-2015-1BL	Ground Water	10/06/2015 1115
15J0379-05	BMO-2015-2B	Ground Water	10/06/2015 1246
15J0379-06	BMO-2015-2BL	Ground Water	10/06/2015 1329
15J0379-07	NWC-04	Ground Water	10/06/2015 1640
15J0379-08	BMO-2014-1BL	Ground Water	10/07/2015 0840
15J0379-09	BMO-2014-1BU	Ground Water	10/07/2015 0919
15J0379-10	BMO-2014-2BL	Ground Water	10/07/2015 1059
15J0379-11	BMO-2014-2BU	Ground Water	10/07/2015 1142
15J0379-12	BMO-2014-3BU	Ground Water	10/07/2015 1406
15J0379-13	BMO-2014-3BL	Ground Water	10/07/2015 1537
15J0379-14	DUP20151007	Ground Water	10/07/2015 1806
15J0379-15	FB20151007	Ground Water	10/07/2015 1120
15J0379-16	EQB20151007	Ground Water	10/07/2015 1122

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Date Received:** 10/08/2015

**Case Narrative**

---

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND Not Detected at or above the PQL

PQL Practical Quantitation Limit

DF Dilution Factor



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-01

**Client Sample ID:** BMO-2014-4B  
**Collection Date/Time:** 10/06/2015 0845  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	53	25		mg/L	5	10/08/2015 1640	10/09/2015 1543	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-02

**Client Sample ID:** BMO-2014-4BL  
**Collection Date/Time:** 10/06/2015 0856  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	180	50		mg/L	10	10/08/2015 1640	10/09/2015 1602	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-03

**Client Sample ID:** BMO-2015-1B  
**Collection Date/Time:** 10/06/2015 1033  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	190	50		mg/L	10	10/08/2015 1640	10/09/2015 1620	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-04

**Client Sample ID:** BMO-2015-1BL  
**Collection Date/Time:** 10/06/2015 1115  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	230	130		mg/L	25	10/08/2015 1640	10/09/2015 1639	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-05

**Client Sample ID:** BMO-2015-2B  
**Collection Date/Time:** 10/06/2015 1246  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	260	130		mg/L	25	10/08/2015 1640	10/09/2015 1657	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-06

**Client Sample ID:** BMO-2015-2BL  
**Collection Date/Time:** 10/06/2015 1329  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	300	130		mg/L	25	10/08/2015 1640	10/09/2015 1716	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-07

**Client Sample ID:** NWC-04  
**Collection Date/Time:** 10/06/2015 1640  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	230	50		mg/L	10	10/08/2015 1640	10/09/2015 1734	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-08

**Client Sample ID:** BMO-2014-1BL  
**Collection Date/Time:** 10/07/2015 0840  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	160	50		mg/L	10	10/08/2015 1640	10/09/2015 1752	MR



**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-09

**Client Sample ID:** BMO-2014-1BU  
**Collection Date/Time:** 10/07/2015 0919  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	180	50		mg/L	10	10/09/2015 1020	10/09/2015 1811	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-10

**Client Sample ID:** BMO-2014-2BL  
**Collection Date/Time:** 10/07/2015 1059  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	470	130		mg/L	25	10/09/2015 1020	10/09/2015 2115	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-11

**Client Sample ID:** BMO-2014-2BU  
**Collection Date/Time:** 10/07/2015 1142  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	62	25		mg/L	5	10/09/2015 1020	10/09/2015 2134	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-12

**Client Sample ID:** BMO-2014-3BU  
**Collection Date/Time:** 10/07/2015 1406  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	7.8	5.0		mg/L	1	10/09/2015 1020	10/09/2015 1316	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-13

**Client Sample ID:** BMO-2014-3BL  
**Collection Date/Time:** 10/07/2015 1537  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	8.5	5.0		mg/L	1	10/09/2015 1020	10/09/2015 2152	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-14

**Client Sample ID:** DUP20151007  
**Collection Date/Time:** 10/07/2015 1806  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	160	50		mg/L	10	10/09/2015 1020	10/09/2015 1353	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-15

**Client Sample ID:** FB20151007  
**Collection Date/Time:** 10/07/2015 1120  
**Matrix:** Ground Water  
**Order Name:** CQB

<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	10/09/2015 1020	10/09/2015 2211	MR

**Client:** Freeport McMoran - Copper Queen Branch  
**Project:** CQB  
**Work Order:** 15J0379  
**Lab Sample ID:** 15J0379-16

**Client Sample ID:** EQB20151007  
**Collection Date/Time:** 10/07/2015 1122  
**Matrix:** Ground Water  
**Order Name:** CQB

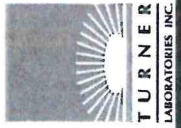
<b>Analyses</b>	<b>Result</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Prep Date</b>	<b>Analysis Date</b>	<b>Analyst</b>
<b>Anions by Ion Chromatography-E300</b>								
Sulfate	ND	5.0		mg/L	1	10/09/2015 1020	10/09/2015 2229	MR



Client: Freeport McMoran - Copper Queen Branch  
 Project: CQB  
 Work Order: 15J0379  
 Date Received: 10/08/2015

**QC Summary**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
<b>Batch 1510072 - E300</b>										
<b>Blank (1510072-BLK1)</b>				Prepared & Analyzed: 10/08/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1510072-BS1)</b>				Prepared & Analyzed: 10/08/2015						
Sulfate	12	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1510072-BSD1)</b>				Prepared & Analyzed: 10/08/2015						
Sulfate	13	5.0	mg/L	12.50		101	90-110	0.6	10	
<b>Matrix Spike (1510072-MS1)</b>				Source: 15J0371-02		Prepared & Analyzed: 10/08/2015				
Sulfate	13	5.0	mg/L	12.50	0.59	99	80-120			
<b>Matrix Spike Dup (1510072-MSD1)</b>				Source: 15J0371-02		Prepared & Analyzed: 10/08/2015				
Sulfate	13	5.0	mg/L	12.50	0.59	101	80-120	2	10	
<b>Batch 1510090 - E300</b>										
<b>Blank (1510090-BLK1)</b>				Prepared & Analyzed: 10/09/2015						
Sulfate	ND	5.0	mg/L							
<b>LCS (1510090-BS1)</b>				Prepared & Analyzed: 10/09/2015						
Sulfate	13	5.0	mg/L	12.50		100	90-110			
<b>LCS Dup (1510090-BSD1)</b>				Prepared & Analyzed: 10/09/2015						
Sulfate	13	5.0	mg/L	12.50		101	90-110	1	10	
<b>Matrix Spike (1510090-MS2)</b>				Source: 15J0386-01		Prepared & Analyzed: 10/09/2015				
Sulfate	22		mg/L	12.50	11	92	80-120			
<b>Matrix Spike Dup (1510090-MSD2)</b>				Source: 15J0386-01		Prepared & Analyzed: 10/09/2015				
Sulfate	22		mg/L	12.50	11	92	80-120	0.004	10	



2445 N. Coyote Drive, Suite 104  
 Tucson, Arizona 85745  
 (520) 882-5880  
 Fax: (520) 882-9788  
 www.turnerlabs.com

# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1530379 DATE 10/18/15 PAGE 1 OF 2

PROJECT NAME <u>CQB Quarterly # 287030</u> CONTACT NAME: <u>Chris Sherman</u> COMPANY NAME: <u>Freeport McMoran CQB</u> ADDRESS: <u>36 Highway 92</u> CITY <u>Bisbee</u> STATE <u>AZ</u> ZIP CODE <u>85603</u> PHONE <u>520 508 7063</u> FAX <u>520 432 1395</u> SAMPLER'S SIGNATURE <u>[Signature]</u>		CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX NUMBER OF CONTAINERS <u>Unfiltered</u> <u>504 - 300.0</u>		
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*
BMO-2014-4B	10/6/15	0845		GW
BMO-2014-4B-L	10/6/15	0856		GW
BMO-2015-1B	10/6/15	1033		GW
BMO-2015-1B-L	10/6/15	1115		GW
BMO-2015-2B	10/6/15	1246		GW
BMO-2015-2B-L	10/6/15	1329		GW
NYC-04	10/6/15	1640		GW
BMO-2014-1B-L	10/7/15	0840		GW
BMO-2014-1B-U	10/7/15	0919		GW
BMO-2014-2B-L	10/7/15	1059		GW
BMO-2014-2B-U	10/7/15	1142		GW

2. RECEIVED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

1. RELINQUISHED BY: [Signature]  
 Signature Victoria Hernandez  
 Printed Name Chris Sherman  
 Firm Freeport McMoran  
 Date/Time 10/18/15 1600

3. RECEIVED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

4. RECEIVED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

2. RECEIVED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

1. RELINQUISHED BY: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed Name \_\_\_\_\_  
 Firm \_\_\_\_\_  
 Date/Time \_\_\_\_\_

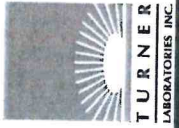
REPORT REQUIREMENTS:  
 I. Routine Report \_\_\_\_\_  
 II. Report (includes DUP, MS, MSD, as required, may be charged as samples)   
 III. Date Validation Report (Includes All Raw Data) \_\_\_\_\_  
 Add 10% to invoice \_\_\_\_\_

INVOICE INFORMATION:  
 Account  Y \_\_\_\_\_ N \_\_\_\_\_  
 P.O. # \_\_\_\_\_  
 Bill to: CQB

SAMPLE RECEIPT:  
 Total Containers 16  
 Temperature 2.4  
 Wet Ice  Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No  Custody Seals   
 ADEQ Forms:  Yes  No  Container Intact   
 Mail ADEQ Forms:  Yes  No  COC/Labels Agree   
 Preservation Confirmation   
 Appropriate Head Space   
 Received Within Hold Time   
All samples filtered with a 0.45um filter, unless noted. Victoria Hernandez  
Copy Results to Ben Daigneau + Bill Hart, +





# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1520379 DATE 10/8/15 PAGE 2 OF 2

PROJECT NAME CAB Quarterly # 287030  
 CONTACT NAME: Chris Sherman  
 COMPANY NAME: Freeport McMoran CAB  
 ADDRESS: 36 Highway 92  
 CITY Bisbee STATE AZ ZIP CODE 85603  
 PHONE 520 508 7063 FAX 520 432 1395  
 SAMPLER'S SIGNATURE [Signature]

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

NUMBER OF CONTAINERS	ANALYSIS REQUESTED	DATE	TIME	LAB I.D.	SAMPLE MATRIX*
1	Unfiltered	10/7/15	1406		GW
1		10/7/15	1537		GW
1		10/7/15	1800		GW
1		10/7/15	1120		DW
1		10/7/15	1127		DW

REPORT REQUIREMENTS:  
 I. Routine Report  
 II. Report (includes DUP, MS, MSD, as required, may be charged as samples)  
 III. Date Validation Report (includes All Raw Data)  
 Add 10% to invoice

INVOICE INFORMATION:  
 Account  Y  N  
 P.O. # \_\_\_\_\_  
 Bill to: CAB

SAMPLE RECEIPT:  
 Total Containers 16  
 Temperature 2.4  
 Wet Ice  Blue Ice

TURNAROUND REQUIREMENTS:  
 Standard (approx. 10 days)\*  
 Next day  2 Day  5 Day\*  
 Email Preliminary Results To: \_\_\_\_\_  
 \* Working Days

2. RECEIVED BY:  
 Signature [Signature]  
 Printed Name Victoria Hermosillo  
 Firm Clear Creek Associates  
 Date/Time 10/8/15 1600

4. RECEIVED BY:  
 Signature [Signature]  
 Printed Name TURNER LABORATORIES, INC.  
 Firm TURNER LABORATORIES, INC.  
 Date/Time 10/8/15 1600

SPECIAL INSTRUCTIONS/COMMENTS:  
 Compliance Analysis:  Yes  No Custody Seals  Preservation Confirmation   
 ADEQ Forms:  Yes  No Container Intact  Appropriate Head Space   
 Mail ADEQ Forms:  Yes  No COC/Labels Agree  Received Within Hold Time   
All samples filtered with a 0.45µm filter, unless noted. Victoria Hermosillo  
Copy Results to Ben Daigneau + Bill Hart, Victoria Hermosillo

\*LEGEND  
 DW = DRINKING WATER  
 GW = GROUNDWATER  
 SD = SOLID  
 SG = SLUDGE  
 SL = SOIL  
 ST = STORMWATER  
 WW = WASTEWATER

**APPENDIX C**  
**DATA VERIFICATION REPORT**

**APPENDIX C**  
**DATA VERIFICATION REPORT**  
**ANNUAL GROUNDWATER MONITORING REPORT**  
**FOR 2015**

Prepared for:

**FREEPORT MINERALS CORPORATION**  
**COPPER QUEEN BRANCH**  
36 West Highway 92  
Bisbee, Arizona 85603

Prepared by:

**CLEAR CREEK ASSOCIATES, P.L.C.**  
221 North Court Avenue, Suite 101  
Tucson, Arizona 85701

March 1, 2016

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## 1. INTRODUCTION

This report summarizes the data verification review of field measurements, groundwater sampling, and laboratory analyses conducted during 2015 by Clear Creek Associates and Freeport Minerals Corporation, Copper Queen Branch (CQB) pursuant to Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). Clear Creek Associates and CQB collected groundwater samples according to the groundwater monitoring program described by the Mitigation Plan (Clear Creek Associates, 2015). Analytical results for groundwater samples collected for this project during 2015 were reported to Clear Creek Associates by SVL Analytical, Inc. (SVL) of Kellogg, Idaho and Turner Laboratories (Turner) of Tucson, Arizona. Clear Creek Associates compiled and evaluated the analytical results for preparation of this report.

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

The laboratory reports for the 2015 groundwater samples are in Appendix B of the annual report, including COC forms, laboratory correspondence, QC summaries, data qualifiers, and internal QA/QC tests performed by the laboratory. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, neither SVL nor Turner advised any modifications regarding the usability and data validation status of the laboratory results. The analytical results for 181 samples collected by Clear Creek Associates and CQB in 2015 are contained in 23 reports with the SVL and Turner laboratory identification numbers listed in the following tables.

Data for LADD 635 are included in this report since it was installed in the third quarter 2015, sampled, and has been added to the long term monitoring schedule (Table 1 of the main text). More detailed discussion of LADD 635 data will be included in the Water Supply Study report which is being prepared by Clear Creek Associates for submittal to ADEQ by July 2016.

LAB ID	Q1 WELLS REPORTED
	Number of wells sampled: 41 Number of well samples collected (including duplicates and multiple samples from one well): 44 Number of duplicate samples collected: 3 Number of field and equipment blanks collected: 6 Total number of samples collected: 50
W5B0019	AWC-02, AWC-03, AWC-04, AWC-05, BMO-2010-3B, BMO-2010-3M, BMO-2014-1BL, BMO-2014-1BU, BMO-2014-2BL, BMO-2014-2BU, COOPER, DODSON, PANAGAKOS, POWER639, RUIZ, TM-10 USBP, WEED, DUP20150126, EQB20150126, FB20150126
W5B0105	EQB20150203, FB20150203, SCHWARTZ, DUP20150203, COB MW-2, COB WL
W5B149	BMO-2008-1G, BMO-2008-3B, BMO-2008-5B, BMO-2008-5M, BMO-2008-6B, BMO-2008-6M, BMO-2008-11G, BMO-2012-1M, TM-7
W5B0341	NWC-06, FB20150212, EQB20150212, NWC-02, DUP20150212, NWC-04
W5C0184	POWER 639
15B0530	BMO-2014-3BL
15B0751	BMO-2014-3BU
15C0312	BMO-2014-4B
15C0185	BMO-2014-4BL
15C0539	BMO-2015-1B
15C0514	BMO-2015-1BL
15C0610	BMO-2015-2B
15C0699	BMO-2015-2BL



LAB ID	Q2 WELLS REPORTED
	Number of wells sampled: 14 Number of well samples collected (including duplicates and multiple samples from one well): 16 Number of duplicate samples collected: 0 Number of field and equipment blanks collected: 0 Total number of samples collected: 16
W5D0246	NWC-04
W5D0349	BMO-2015-2BL, BMO-2015-2B, BMO-2015-1BL, BMO-2015-1B, BMO-2014-4B, BMO-2014-4BL, BMO-2014-3BL, BMO-2014-3BU, BMO-2014-2BL, BMO-2014-2BU, BMO-2014-1BL, BMO-2014-1BU
W5D0588	POWER 639
15E0504	POWER 639
15F0520	POWER 639

LAB ID	Q3 WELLS REPORTED
Number of wells sampled: 81 Number of well samples collected (including duplicates and multiple samples from one well): 87 Number of duplicate samples collected: 6 Number of field and equipment blanks collected: 12 Total number of samples collected: 99	
15G0817	PALMER, NESS, SWAN, AWC-05, AWC-03, AWC-04, AWC-02, KEEFER, RAMIREZ, CHAMBERS, BMO-2010-3B, BMO-2010-3M, ANDERSON 458, PIONKE 517, BMO-2014-4B, BMO-2014-4BL, BMO-2015-1B, BMO-2015-1BL, BMO-2015-2B, BMO-2015-2BL, BIMA, NOTEMAN, DODSON, EPPELE 641, EAST, BANKS 986, TM-10, FB20150723, EQB20150723, DUP20150723, EQB20150722, DUP20150722, FB20150722, DUP20150720, FB201500720, EQB20150720
15H0322	COB MW-3, COB MW-2, COB MW-1, COB WL, PANAGAKOS, FRANCO 383, BMO-2014-1BL, BMO-2014-1BU, BMO-2014-2BL, BMO-2014-2BU, BMO-2014-3BU, BMO-2014-3BL, NWC-06, NWC-02, NWC-04, TVI-875, TVI-236, ROGERS E, RUIZ, POWER 639, MCCONNELL 265, MCCONNELL 459, HOWARD NR, HOWARD 312, ZANDER, THOMPSON 341, MOORE, ECHAVE, BURKE, PARRA, COOPER, RAY, WEISKOPF 802, WEISKOPF 897, SCHWARTZ, WEED, DUP20150727, FB20150727, EQB20150727, DUP20150804, FB20150804, EQB20150804
15G0785	LADD 635
W5I0321	BMO-2008-5M, BMO-2008-5B, BMO-2008-6M, BMO-2008-6B, TM-15, BMO-2010-1M, BMO-2008-1G, BMO-2012-1M, TM-19A, HOBAN, COOPER C, BMO-2008-7M, BMO02008-11G, DUP-091415, BMO-2008-9M, BMO-2008-3B, TM-7, BMO-2008-8M, FB-091515, EQB-091515

LAB ID	Q4 WELLS REPORTED
	Number of wells sampled: 13 Number of well samples collected (including duplicates and multiple samples from one well): 14 Number of duplicate samples collected: 1 Number of field and equipment blanks collected: 2 Total number of samples collected: 16
15J0379	BMO-2014-4B, BMO-2014-4BL, BMO-2015-1B, BMO-2015-1BL, BMO-2015-2B, BMO-2015-2BL, NWC-04, BMO-2014-1BL, BMO-2014-1BU, BMO-2014-2BL, BMO-2014-2BU, BMO-2014-3BU, BMO-2014-3BL, DUP20151007, FB20151007, EQB20151007

## 2. FIELD OPERATIONS

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

- Static water level measurement, if possible,
- Well purging, if needed,
- Collection of water quality field parameters (pH in standard units [SU], specific conductance [SC] in microSiemens per centimeter [ $\mu$ S/cm], and temperature in degrees Celsius [ $^{\circ}$ C]),
- Collection of groundwater samples for water quality analysis,
- Collection of groundwater QA and QC samples per requirements in the QAPP, and
- Equipment decontamination.

Field notebook entries and sampling forms were evaluated for quality assurance and 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 (where there are no known obstructions or lack of wellhead access to prevent static water level measurement) and at all wells where water level only monitoring was conducted. Water levels at pumping wells were measured while the well pump was off. Because it is not always possible to ascertain how long the pump had been off prior to the water level measurement, some water levels may be affected by residual drawdown. 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. Depth to water below a surveyed measuring point was measured to the nearest 0.01 feet, and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement.

### 2.2 Groundwater Sampling

Groundwater samples were collected from operable wells designated for monitoring under the Mitigation Plan. Location information for the wells sampled for water quality and water level measurements is listed in Tables 2 and 3 of the main text.

### 2.2.1 Pre-Sampling Field Activities

The pH<sup>1</sup> and SC<sup>2</sup> multipurpose meters were calibrated on each day of sampling. 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 meters. In addition to calibrating the instruments daily, 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 distilled 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 distilled 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 D of the annual report). Purge water was discharged to the ground surface.

Field measurements of pH, temperature, and specific conductance 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 °C for temperature and 100 µS/cm for specific conductance as described in Section 4.2.1.2 of the QAPP.

In 2015, 161 groundwater samples (duplicate and multiple samples included) were collected for analysis from 81 wells. Groundwater samples were collected by filtering the sample into a 250-milliliter bottle using a clean filtration apparatus and one disposable 0.45-micron filter. Samples were labelled with the site name, date, time collected, sampler's initials, and the required analysis on the bottle. All bottles were provided by the laboratories and maintained in a clean and secure work area until used in the field.

---

<sup>1</sup> Field pH meters were calibrated using a three point calibration

<sup>2</sup> Field SC meters were calibrated using standard stock solutions

### 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 Alconox<sup>®</sup> detergent and distilled water. After washing, the equipment was rinsed with distilled water. After sample collection, samples from each well were placed into a plastic bag to prevent the label from becoming illegible and stored on ice until they could be packed securely for shipping to the laboratory. The chain of custody is filled out prior to shipping or delivery to the laboratory, signed by the sampler, and then placed in a plastic bag along with the samples.

### 3. SAMPLE HANDLING

All 2015 samples collected by Clear Creek Associates and CQB were shipped to SVL or hand-delivered to Turner 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 and Turner. As noted on the laboratory reports from SVL and Turner, all of the sample bottles were received intact, properly preserved, and in good condition. The samples were shipped to SVL or delivered to Turner within one to seven days of sample collection, and the time between sample collection and receipt of samples by SVL was two to eight days. The samples were collected, shipped or delivered, 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. Turner is also licensed with the Arizona Department of Health Services (license number AZ0066).

### 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 analyses conducted by SVL and Turner are shown in the following table:

Lab	Method	MDL (mg/L)	RL/PQL (mg/L)	Target MDL <sup>1</sup> (mg/L)
SVL	EPA 300.0	0.05	0.30	10
Turner	EPA 300.0	NR <sup>2</sup>	5.0-500	10

*mg/L = milligrams per liter*

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

<sup>2</sup> Not Reported: Turner reports the Practical Quantitation Limit (PQL) instead of an MDL.

The SVL-reported MDL of all samples is equal to or less than the target MDL identified in the QAPP. Turner reports the Practical Quantitation Limit (PQL) instead of an MDL. The PQL “is



the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions” (Turner Quality Assurance Plan, July 5, 2015) and is a statistical value similar to the Reporting Level (RL) of SVL. The lowest PQL reported by Turner is 5.0 mg/L, with a Dilution Factor of 1.0, or no dilution. This is lower than the Target MDL of 10 mg/L from the QAPP. Samples with higher range concentrations of sulfate required dilution, which increases the PQL. For this reason, the range of PQLs in Turner reports is from 5.0 mg/L to 500 mg/L. In all cases of a PQL greater than 10 mg/L sulfate, the laboratory analysis yielded a detected quantity. Non-detect results always had PQLs of 5 mg/L sulfate. Thus, detection sensitivity of the Turner analyses is adequate to be consistent with the Target MDL.

#### **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 and Turner QA Plans.

##### 4.5.2 Analytical Spike

Analytical spike and spike duplicate samples were analyzed by the laboratory for 10 percent of the samples analyzed. The spike samples were prepared by adding a sulfate spike to one randomly chosen sample out of every ten samples analyzed. Spike recoveries for most analyses

were between 90 and 110 percent. In the SVL results, instances in which analytical spike recoveries were high, low, or unusable are qualified with an “M1”, “M2”, or “M3” flag, respectively. The “M1” flag was used on SVL reports W5B0019, W5B0105, W5B0341, W5C0184, and W5I0321. The “M2” flag was used on SVL report W5D0349. The “M3” flag was used on SVL reports W5B0019, W5B0105, W5B0149, and W5B0341. In all cases where a qualifier was used, the method control sample recovery was checked by SVL to ensure that it was acceptable within the criteria specified by their QA Plan. The method control samples were prepared by adding a sulfate spike to de-ionized water. There were no analytical flags reported by Turner.

#### 4.5.3 Laboratory Duplicate Samples

Analyses of laboratory duplicate samples were reviewed as part of this data verification report. In all cases where the relative percent difference (RPD) could be calculated for laboratory duplicate samples, 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. Field duplicate samples are discussed in Section 5.1.

#### 4.5.4 Sample Re-Analysis

During 2015, no samples were re-analyzed.

#### 4.5.5 Blank Samples

Field and equipment blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field and equipment 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.

During 2015, 20 blank samples were collected, including ten field blanks (FB20150126, FB20150203, FB20150212, FB20150720, FB20150722, FB20150723, FB20150727, FB20150804, FB-091515, FB20151007) and ten field equipment blanks (EQB20150126, EQB20150203, EQB20150212, EQB20150720, EQB20150722, EQB20150723, EQB20150727, EQB20150804, EQB-091515, EQB20151007). None of the blank samples collected in 2015 had sulfate concentrations above the SVL reporting limit of 0.30 mg/L, or the Turner reporting limit

of 5.0 mg/L. The results demonstrate that the sulfate concentrations reported in 2015 were not affected by sample collection and sample handling procedures.

## 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 groundwater sampling and analysis conducted in 2015.

### 5.1 Precision

Precision indicates how well a measurement can be reproduced. Precision is quantified by calculating the RPD between sulfate analyses of duplicate samples and by measuring the water level multiple times before recording the result.

For the QA/QC of analytical data, 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 ten field-filtered duplicate samples (DUP20150126, DUP20150203, DUP20150212, DUP20150720, DUP20150722, DUP20150723, DUP20150727, DUP20150804, DUP-091515, and DUP20151007) were collected for analysis. The collection of ten duplicate samples meets the QA/QC method and quantity goal stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the duplicate samples collected are provided in the table below. The range of RPD values was between 0.00 and 11.11 percent, all within the 20 percent acceptance criteria for

field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is met for the analytical data.

Turner Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
<a href="#">W5B0019</a>	DODSON	DUP20150126	59.5	59.9	0.67%
<a href="#">W5B0105</a>	SCHWARTZ	DUP20150203	125	126	0.80%
<a href="#">W5B0341</a>	NWC-06	DUP20150212	8.12	8	0.37%
<a href="#">15G0817</a>	SWAN	DUP20150720	19	19	0.00%
<a href="#">15G0817</a>	BMO-2010-3M	DUP20150722	8.6	9.3	7.82%
<a href="#">15G0817</a>	BMO-2014-4BL	DUP20150723	190	170	11.11%
<a href="#">15H0322</a>	COB MW-2	DUP20150727	40	42	4.88%
<a href="#">15H0322</a>	WEISKOPF 802	DUP20150804	700	700	0.00%
<a href="#">W5I0321</a>	BMO-2008-11G	DUP-091415	12.3	12.4	0.81%
<a href="#">15J0379</a>	BMO-2014-1BL	DUP20151007	160	160	0.00%

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

Precision for water level monitoring was met by measuring the water level repeatedly until readings were within 0.03 feet of one another. Readings within that range were obtained from all wells where groundwater measurements were collected; meeting the DQI for precision.

## 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. As discussed in Section 4.5.5, none of the blank samples had measurable concentrations of sulfate indicating that the sampling collection and analysis procedures did not contribute sulfate to the results.

## 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. As discussed in Section 4.5.5,

none of the blank samples had measurable concentrations of sulfate indicating that the sampling collection and analysis procedures did not significantly contribute sulfate to the results.

The accuracy of water level measurements was evaluated by comparing measurements to prior measurements to ensure consistency. Based on this information, the overall accuracy of the data is judged sufficient for the purpose of aquifer characterization.

#### **5.4 Representativeness**

All water level measurements and samples were taken from locations identified in the Mitigation Plan following standard sampling procedures and QA/QC guidelines specified in the QAPP. Moreover, results are expected to be representative of groundwater quality at the sampled locations because sulfate was not detected in the field or equipment blanks.

#### **5.5 Comparability**

All samples were collected using standardized procedures (HGC, 2008) and were analyzed by SVL and Turner 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 and Turner satisfy the QA/QC criteria for this project. The completeness of analytical results is 100 percent, which exceeds the minimum 90 percent completeness in Section 3.3.6 of the QAPP.

#### **5.7 Sensitivity**

The analytical methods used to analyze the samples meet the MDL requirements specified in Table F.2 of the QAPP. The water level sounder was accurate to 0.01 feet as specified in Section 4 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

#### **5.8 Reliability**

After analyzing the results of all samples, comparing results to historical data, and carefully reviewing the field and laboratory methods used, the data is reported here is judged to provide a reliable representation of groundwater conditions at the sampled locations for 2015.

## 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.
- Clear Creek Associates. 2015. Mitigation Plan for Sulfate with respect to Drinking Water Supplies, Mitigation Order on Consent No. P-121-07. March 6, 2015.
- 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.
- Turner Laboratories, Inc. (Turner). 2015. Quality Assurance Plan, Revision #25. Tucson, Arizona. July 5, 2015.

**APPENDIX D**

**WELL RECORDS REGISTRY REVIEW**



**APPENDIX D**  
**WELL RECORDS REGISTRY REVIEW**  
**ANNUAL GROUNDWATER MONITORING REPORT**  
**FOR 2015**

Prepared for:

**FREEMPORT MINERALS CORPORATION,**  
**COPPER QUEEN BRANCH**  
36 West Highway 92  
Bisbee, Arizona 85603

Prepared by:

**CLEAR CREEK ASSOCIATES, P.L.C.**  
221 North Court Avenue Suite 101  
Tucson, Arizona 85701

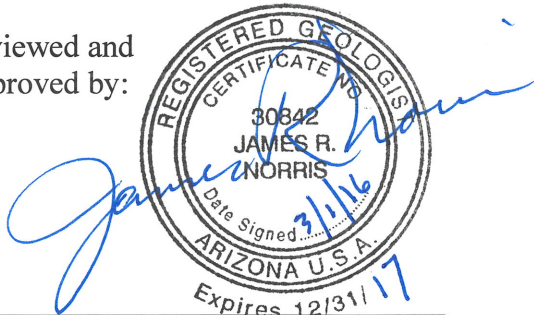
March 1, 2016

**APPENDIX D**  
**WELL RECORDS REGISTRY REVIEW**  
**ANNUAL GROUNDWATER MONITORING REPORT FOR 2015**

Prepared for:

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

Reviewed and  
Approved by:



James R. Norris  
Arizona Registered Geologist No. 30842

Prepared by:

Victoria Hermosilla  
Arizona GIT No. 11800

March 1, 2016

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D.1. Well Records Review Summary

## FIGURES

D.1. Project Location Map  
D.2. 1.1 Mile Well Search Area  
D.3. New Well Registry Records April 2012 to January 2016

# 1. INTRODUCTION

## 1.1 Scope and Objectives

This report describes a review of the Arizona Department of Water Resources (ADWR) Program 55 Well Registry Database (WRD) to identify new registered wells installed since 2012 within one mile of the groundwater sulfate plume near the Freeport Minerals Corporation, Copper Queen Branch (CQB) Concentrator Tailing Storage Area (CTSA) (Figure B.1). The well registry records review is a requirement of the Mitigation Plan (Clear Creek Associates, 2015) submitted to Arizona Department of Environmental Quality (ADEQ) in 2015 pursuant to Mitigation Order on Consent Docket No. P-121-07 (MO) between CQB and ADEQ.

An initial inventory of wells within a mile of the plume was submitted to ADEQ in 2008 (Hydro Geo Chem, Inc., 2008). A well inventory update conducted using WRD information available as of April 2012 was submitted to ADEQ in 2014 (Clear Creek Associates, 2014). This well records review uses the January 2016 WRD to identify wells registered since April 2012. ADWR reports that the WRD is updated as new NOIs are received, making the WRD used for this review current through 2015.

The well registry records review is conducted pursuant to Section 2.4 of the Mitigation Plan which states the following.

*“The ADWR well registry records will be reviewed annually to identify new existing wells installed within one mile of the plume. Water use at new wells will be determined from the ADWR registry record and by inquiry with the well owner.”*

The new registered wells identified by this review were evaluated to verify well use and ownership. This review discusses only the new wells registered between the April 2012 and January 2016 WRDs. Clear Creek Associates (2014) describes the registered wells previously identified using the April 2012 WRD.

## 1.2 Monitoring of Drinking Water Supplies

The MO set the action level for sulfate concentration in drinking water supplies at 250 milligrams per liter (mg/L). The edge of the sulfate plume is defined as the 250 mg/L sulfate concentration contour estimated based on the results of groundwater monitoring. CQB conducts groundwater sampling for sulfate at drinking water supply and monitoring wells according to the long term plume monitoring and expanded groundwater monitoring programs described in the Mitigation Plan. Public drinking water supplies and private drinking water supplies within 2000 feet of the plume are sampled semiannually. Annual sampling is performed at private drinking water supplies between 2000 feet and one mile of the plume, and at drinking water supply wells installed below the plume as mitigation actions. New drinking water supply wells within a mile of the plume are added to the long term plume monitoring program as they are identified, contingent on well owner approval.

## 2. METHODOLOGY

### 2.1 Identification of Wells Within One Mile of the Plume

Figures B.1 and B.2 show the sulfate plume based on groundwater monitoring data for the third quarter of 2015 (annual report, Figure 6). The January 2016 WRD and Geographic Information Systems (GIS) software were used to identify registered wells installed within 1 mile of the sulfate plume. The database was imported into the GIS software and a shapefile was created to encompass the area 1 mile from the edge of the sulfate plume plus a safety factor of 0.1 miles. The safety factor accounts for uncertainty in the exact position of wells because the WRD contains only cadastral coordinates accurate to approximately 470 feet. Figure B.2 shows the outline of the search area 1.1 miles from the sulfate plume. The list of wells within the search area in January 2016 was compared to the list of wells reported by the 2014 Well Inventory Update to identify new records. Table B.1 lists the eighteen new records added to the WRD between April 2012 and January 2016. The locations for the new well records are shown on Figure B.3.

### 2.2 Well Categorization

The new well records were categorized by operational status and well type to assist in identifying drinking water wells. The eighteen new records are differentiated into three categories:

- **Domestic Non-Drinking Wells (1 well):** Wells that supply water to a residence for lavatory, laundry, and kitchen use, but not for drinking water use.
- **Drinking Water Supply Wells (2 wells):** Wells that supply drinking water.
- **Monitor Wells (15 wells):** Dedicated groundwater quality and water level monitoring wells, including piezometers.

### 2.3 Well Verification

Fifteen of the new well records are for monitoring wells installed by CQB for environmental investigations under the MO and Arizona Aquifer Protection Permit program. Three new well records were for private wells: POWER 639, BOOTH, and OLMOS. POWER 639 and BOOTH are private drinking water supply wells that have been previously sampled by CQB and identified for the sampling under the long term plume monitoring program. The owner of OLMOS was contacted on January 13, 2016 after several unsuccessful attempts to verify well usage. The well owner identified the well as a drinking water source and signed an access agreement for sampling. OLMOS was added to the schedule for sampling in 2016 under the long term plume monitoring program.

### 3. RESULTS

#### 3.1 New Wells Identified

The well records review identified 18 newly installed wells within a mile of the plume (Table 1 and Figure 3). Fifteen of the new wells are monitoring wells installed by CQB and three are private wells. The three private wells are BOOTH, POWER 639, and OLMOS.

- BOOTH was installed in 2012 and is used as a drinking water supply. CQB sampled BOOTH from January 5, 2013 to October 18, 2013, when the well owner declined further participation in the monitoring program.
- POWER 639 is a domestic non-drinking water supply well. CQB sampled POWER 639 from January 16, 2014 to July 30, 2015 and provided bottled drinking water as an interim mitigation action. CQB is currently attempting to acquire owner approval to connect Power 639 to the Arizona Water Company system.
- OLMOS is a private-drinking water supply well, and was added to the long-term plume monitoring schedule. OLMOS was surveyed and sampled in first quarter 2016.

#### 3.2 Re-Categorized Wells

During the well registry records review, two previously identified wells were found to have inaccurate use categories listed in Clear Creek Associates (2014). The designation of ANDERSON 396 was changed from 'Inactive' to 'Domestic Non-Drinking Water' to reflect the well owner's use of this well for their pool. The Anderson property has a drinking water supply well provided as a mitigation action. BARTON 919 was changed from 'Dry' to 'Inactive' since water levels are checked under the current MO monitoring plan. The well database was modified to reflect the proper use categories of these wells.



#### 4. REFERENCES

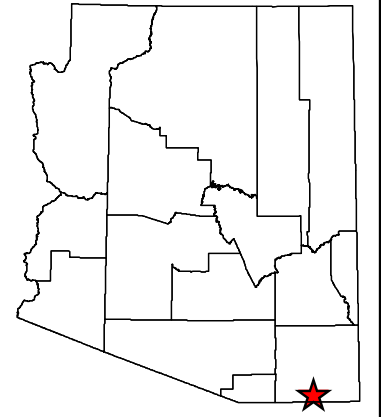
- Clear Creek Associates. 2014. Well Inventory Update, Task 1 of Aquifer Characterization Plan for Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. June 30, 2014.
- Clear Creek Associates. 2015. Mitigation Plan for Sulfate with Respect for Drinking Water Supplies, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona. March 6, 2015.
- HGC. 2008. Well Inventory Report, Task 1 of Aquifer Characterization Plan for Mitigation Order on Consent No. P-121-07, Cochise County, Arizona. July 28, 2008.

## TABLE

**TABLE D.1.  
Well Categorization for Recently Installed Wells**

Well Registry Number	Owner Name	Well Name	Category	MO Groundwater Monitoring Frequency	Operational	Usage	Comments
<b>Domestic Non-Drinking Water Wells</b>							
222639	JOSE D NOPERI	POWER 639	Domestic Non-Drinking Water	Semi-Annually	Yes	Drinking Water	Groundwater quality monitored semi-annually under current MO groundwater monitoring program.
<b>Drinking Water Supply Wells</b>							
224745	FRANCISCA & ALBERTO OLMOS	OLMOS	Drinking Water Supply	Semi-Annually	Yes	Drinking Water	Groundwater quality monitored semi-annually under current MO groundwater monitoring program.
914931	GREG BOOTH	BOOTH	Drinking Water Supply	Semi-Annually	Yes	Drinking Water	Well owner declined participation in MO groundwater monitoring program in 2014.
<b>Monitor Wells and Piezometers</b>							
914260	FREEPOR MCMORAN COPPER AND GOLD, COPPER QUEEN BRANCH	WMD2012-05G	Monitor Well	No	Yes	Groundwater Monitoring	Monitor Well. Monitored as part of the groundwater investigation for the upcoming APP.
914433	FREEPOR MCMORAN COPPER QUEEN BRANCH	WMD2012-07G	Monitor Well	No	Yes	Groundwater Monitoring	Monitor Well. Monitored as part of the groundwater investigation for the upcoming APP.
914847	FREEPOR MCMORAN COPPER QUEEN BRANCH	WMD2012-11M	Monitor Well	No	Yes	Groundwater Monitoring	Monitor Well. Monitored as part of the groundwater investigation for the upcoming APP.
917393	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-1BU	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917394	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-1BL	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917452	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-2BL	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917453	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-2BU	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917494	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-3BU	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917527	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-3BL	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917619	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-4BL	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917620	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2014-4B	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917621	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2015-1BL	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917622	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2015-1B	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917827	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2015-2B	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.
917828	FREEPOR MCMORAN COPPER QUEEN BRANCH	BMO-2015-2BL	Monitor Well	Quarterly	Yes	Groundwater Monitoring	Monitor Well. Monitored under current MO groundwater monitoring program.

## FIGURES



**Legend**

- Third Quarter 2015 250 mg/L Sulfate Plume
- CTSA
- Highway
- International Border

**Notes:**

Projection: UTM Zone  
12N NAD83

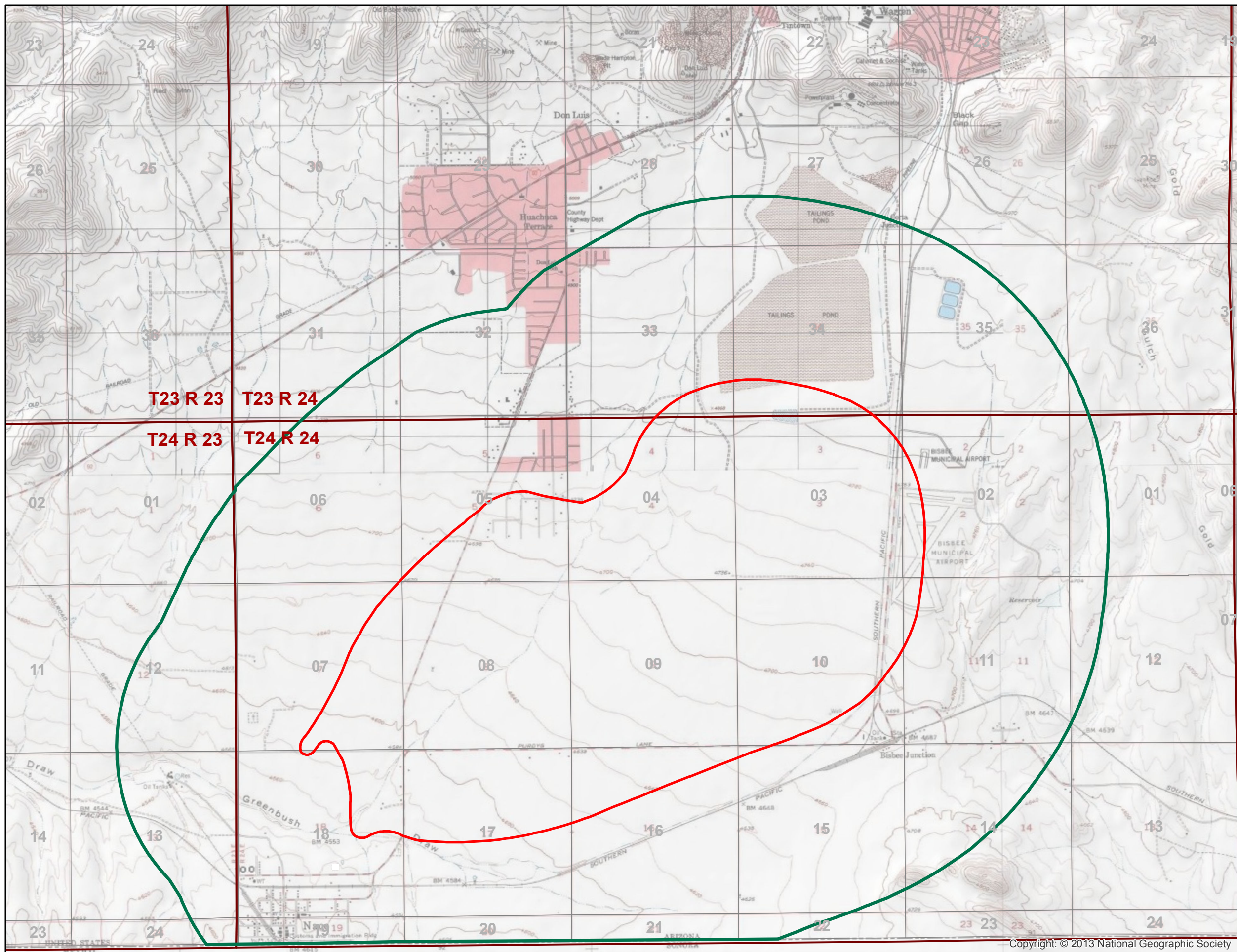
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**FIGURE D.1.  
PROJECT LOCATION MAP**

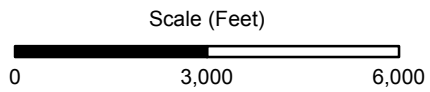
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





**Legend**

-  1.1 Mile Search Area
-  Estimated 250 mg/L Sulfate Concentration for third quarter 2015
-  Township and Range



**Notes:**

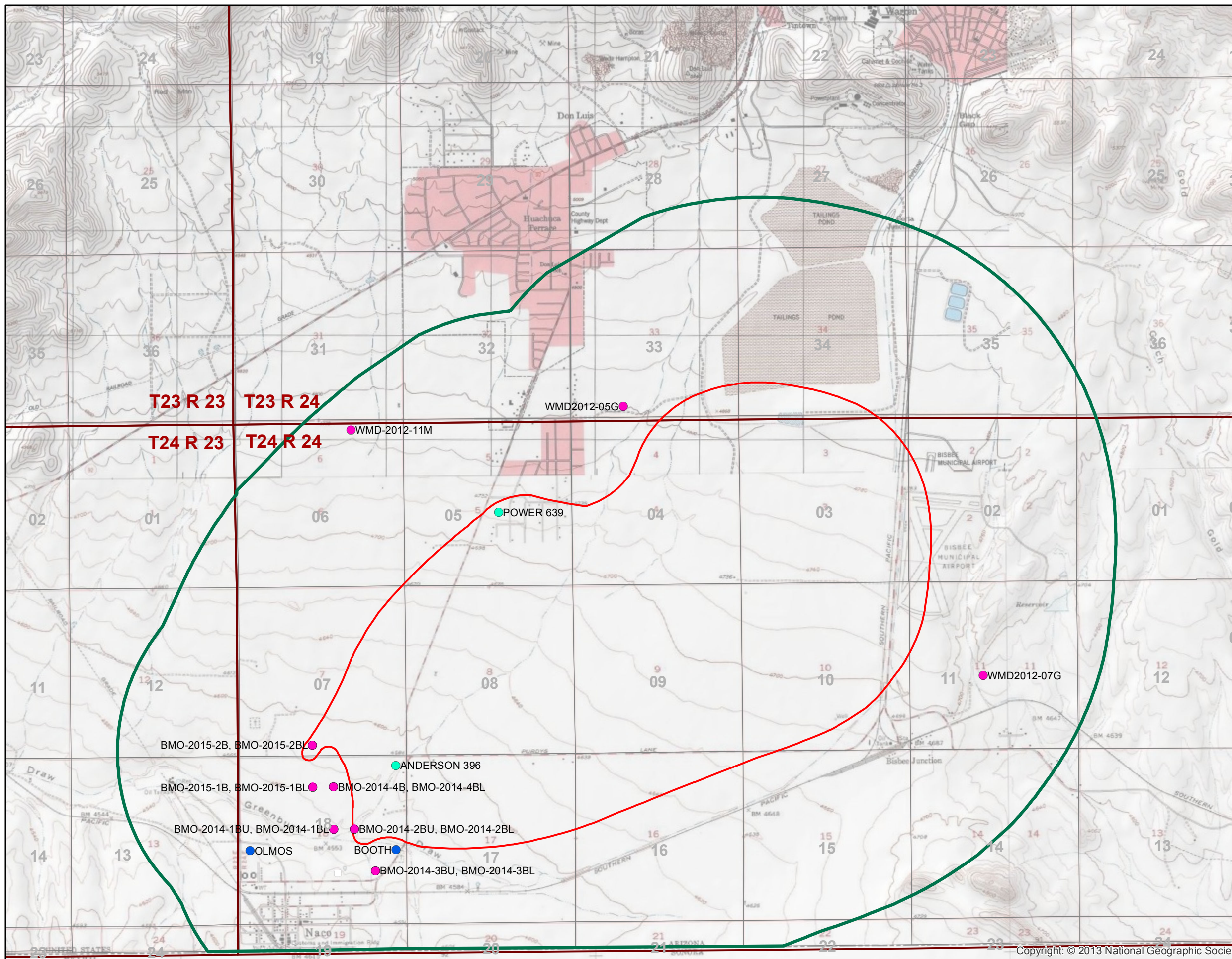
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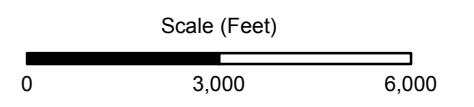


FIGURE D.2.  
1.1 MILE SEARCH AREA





- Legend**
- 1.1 Mile Well Search Area
  - Estimated 250 mg/L Sulfate Concentration for third quarter 2015
  - Township and Range
- New Well Registry Records between April 2012 and January 2016**
- Domestic Non-Drinking Water
  - Drinking Water Supply
  - Monitor Well



Notes:

Projection: UTM Zone 12N NAD83

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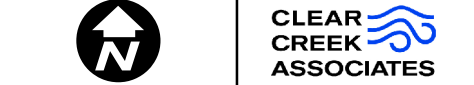


FIGURE D.3.  
NEW WELL REGISTRY RECORDS  
APRIL 2012 TO JANUARY 2016