THIRD QUARTER 2012 GROUNDWATER MONITORING REPORT

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



Prepared for:

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

Prepared by:

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October 19, 2012

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Approved by: 30842 MESF OBBIS James R. Norris *Statistics* 12/311 Arizona Registered Geologist No. 30842

October 19, 2012

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1. INTRODUCTION

This report provides the results of groundwater monitoring conducted by Freeport-McMoRan Corporation Copper Queen Branch (CQB) in the third quarter 2012 in the vicinity of the Concentrator Tailing Storage Area (CTSA). Groundwater monitoring is conducted pursuant to Tasks 1.0 (well inventory of drinking water wells) and 2.2 (groundwater monitoring) of the Work Plan (Hydro Geo Chem, Inc. [HGC], 2008) to characterize sulfate in the vicinity of the CTSA and subsequent modifications. The Work Plan was initially submitted to Arizona Department of Environmental Quality (ADEQ) on December 17, 2007 pursuant to the Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). CQB initiated water sampling prior to work plan approval while ADEQ was commenting on the Work Plan and CQB was responding to their comments. Revision 1 of the Work Plan was submitted to ADEQ on July 3, 2008 and ADEQ approved the Work Plan on August 3, 2008. On January 25, 2010 CQB proposed a revised groundwater monitoring program (CQB, 2010). The revised monitoring program was approved by ADEQ in April 2010 (ADEQ, 2010). Clear Creek Associates (Clear Creek) prepared this groundwater monitoring report on behalf of CQB.

1.1 Scope of Groundwater Monitoring

The objectives of groundwater monitoring are:

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

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

Figure 1 presents a generalized geologic map of the study area and well locations where data reported herein have been collected. Table 2 lists wells scheduled under the groundwater monitoring program, their availability for sampling, and their sampling status in the third quarter 2012. The collection of groundwater samples was conducted by CQB and Clear Creek personnel. Groundwater sampling and analysis methods used by CQB and Clear Creek are described in the Quality Assurance Project Plan (QAPP) contained in Appendix F of the Work Plan (HGC, 2008). Results of groundwater monitoring are presented in Section 2.

Five new domestic drinking water supply wells, ANDERSON 458, FRANCO 383, HOWARD 312, MCCONNELL 459, and PIONKE 517, were installed as mitigation actions (Clear Creek, 2012) and were in regular use by the third quarter 2012. The new wells were added to the sampling schedule as they became operational. Survey data for the new wells can be found in Appendix A. The five new wells were installed on properties with pre-existing wells. The well names for the pre-existing wells have been changed to the well owner's name followed by the last 3 digits of the ADWR registry number to differentiate between the new well and the old well. For example, the ANDERSON well that has been sampled since 2008 is now updated in the tables and figures as ANDERSON 396. The HOWARD well was not registered and has been relabeled as HOWARD NR.

Wells DURAZO, PARRA, and METZLER, in the San Jose area, were disconnected from household service in June 2012 when the water supply at those properties was switched to Arizona Water Company service per the Mitigation Plan (Clear Creek 2012). The wells remain on the schedule for the groundwater monitoring plan and will be monitored in the future to the degree practicable given their operational status.



2. GROUNDWATER MONITORING RESULTS

2.1 Results of Monitoring

Analytical results and groundwater elevation data for the third quarter 2012 are tabulated in Tables 3 and 4, respectively, along with information previously collected under the Mitigation Order. Figure 2 shows the concentrations of dissolved sulfate in the wells sampled in the third quarter 2012. At wells where multiple samples or water levels were collected during the third quarter 2012, the most recent sample is shown on the figures. The highest sulfate concentration measured at co-located wells was used for concentration contouring. Figure 3 shows groundwater elevations in the third quarter 2012. Groundwater elevations were calculated using depth to water measurements made under static (nonpumping) conditions for all wells shown on Figure 3.

2.2 Quality Assurance/Quality Control Review

Pursuant to Section 6.4 of the QAPP, a data verification report was prepared for quality assurance and quality control purposes. The data verification report, analytical laboratory reports, and groundwater sampling forms for samples collected by Clear Creek and CQB during the third quarter 2012 are included in Appendices B, C, and D, respectively. As determined by the data verification review, the analytical sampling data for samples collected in the third quarter 2012 by Clear Creek and CQB are of acceptable quality for use in the groundwater monitoring being conducted pursuant to the Mitigation Order.



3. FINDINGS

This report provides the results of groundwater monitoring conducted within the vicinity of the CTSA for the third quarter 2012. Groundwater samples were collected from 80 wells and depth to water measurements were collected in 67 wells. The December 2010 Aquifer Characterization Report (Clear Creek, 2010) provides detailed descriptions of the hydrogeology, water quality, and sulfate plume. Findings based on the third quarter 2012 groundwater monitoring are described below.

- Water quality samples have been collected from wells completed in three principal water bearing units in the area: basin fill, undifferentiated Bisbee Group, and Glance Conglomerate. The undifferentiated Bisbee Group consists, from youngest to oldest, of the Cintura Formation, Upper Mural Limestone, Lower Mural Limestone and Morita Formation. Figures 2 and 3 provide the screened lithology of the wells sampled.
- Sulfate concentration data indicate that the plume extends to the southwest from the vicinity of the former evaporation pond (Figure 1) to the vicinity of Naco and to the south to the vicinity of Bisbee Junction (Figure 2). The groundwater monitoring data indicate that the sulfate plume extends over an oblong area of approximately 2 miles by 3.9 miles and is contained primarily in the basin fill and undifferentiated Bisbee Group except near the former evaporation pond where wells in the Glance Conglomerate have sulfate concentrations greater than 250 mg/L. The extent of the sulfate plume and the sulfate contours as drawn on Figure 2 are based on both historic and current sulfate concentration data. Historic data are available in this report and in the Aquifer Characterization Report (Clear Creek, 2010).
- Comparison of the third quarter 2012 sulfate concentrations with previous quarters indicates no large scale change in the plume geometry since the Mitigation Order sampling began in the fourth quarter 2008, although concentration contours within the plume have been modified to reflect current concentrations.
- Figure 4 shows sulfate concentrations through time at public drinking water supply wells that are not receiving mitigation actions. Sulfate concentrations have remained relatively stable over time, although NWC-04 displays the greatest variability in concentration.
- Groundwater elevations decrease from east to west across the study area, indicating westerly groundwater flow (Figure 3).
- Figures 5 and 6 show groundwater elevations over time for BMO monitor wells with screened intervals in basin fill and bedrock, respectively. Groundwater elevations in BMO monitor wells screened in basin fill have decreased over time. The maximum decrease measured to date in the basin fill has been 5.65 feet since July 2008 in BMO-2008-3B or a

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rate of decline of approximately 1.4 feet per year. Groundwater elevations in most BMO monitor wells screened in bedrock have also declined over time. The maximum decrease measured to date in the bedrock has been 29.42 feet since August 2008 in BMO-2008-GU or a rate of decline of 7.35 feet per year. Water level declines of up to 8 feet have been measured in other bedrock wells from the time the wells were put into service through the third quarter 2012. The groundwater elevations in bedrock wells BMO-2008-10GL and BMO-2008-11G display increasing trends. The water elevation in bedrock well BMO-2010-1M is relatively steady over time.



4. **REFERENCES**

- Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent, Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.
- ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter dated January 25, 2010. April 22, 2010.
- Clear Creek Associates (Clear Creek). 2010. Revision I Aquifer Characterization Report, Task 4.0 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-121-07, Cochise County, Arizona, Volumes I and II. December 15, 2010.
- Clear Creek. 2012. Feasibility Study and Mitigation Plan for Drinking Water Supplies Affected by Sulfate, Mitigation Order on Consent Docket No. P-121-07. March 28, 2012.
- Freeport McMoRan Copper Queen Branch (CQB). 2010. Correspondence from Rebecca Sawyer, CQB, to Cynthia Campbell, ADEQ, Re: Request to Modify Groundwater Monitoring Program Mitigation Order on Consent No. P-121-07. January 25, 2010.
- Hydro Geo Chem, Inc. (HGC). 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.



TABLES

Table 1 Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.	Semiannual Sampling First Quarter	Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
ANDERSON 396	613396	\checkmark	\checkmark	\checkmark	\checkmark
ANDERSON 458	221458	\checkmark	\checkmark	\checkmark	\checkmark
AWC-02	616586	\checkmark	\checkmark	\checkmark	✓
AWC-03	616585	\checkmark	\checkmark	\checkmark	\checkmark
AWC-04	616584	\checkmark	\checkmark	\checkmark	✓
AWC-05	590620	\checkmark	\checkmark	\checkmark	\checkmark
BANKS 986	647986	\checkmark	\checkmark	\checkmark	✓
BANKS 987	647987	WLO		WLO	
BARTON 919	644919	WLO		WLO	
BF-01	539783			\checkmark	
BIMA	577927	✓	✓	\checkmark	✓
BMO-2008-1G	909474	✓		\checkmark	
BMO-2008-3B	909147	✓		\checkmark	
BMO-2008-4B	910096	✓		\checkmark	
BMO-2008-5B	909653	\checkmark	✓	\checkmark	✓
BMO-2008-5M	909552	\checkmark	✓	\checkmark	✓
BMO-2008-6B	909146	✓	✓	\checkmark	✓
BMO-2008-6M	909019	✓	✓	\checkmark	✓
BMO-2008-7M	908794	\checkmark		\checkmark	
BMO-2008-8B	910097			\checkmark	
BMO-2008-8M	909711	✓		\checkmark	
BMO-2008-9M	909255	\checkmark		\checkmark	
BMO-2008-10GL	909435			\checkmark	
BMO-2008-10GU	909272			\checkmark	
BMO-2008-11G	909434	\checkmark		\checkmark	
BMO-2008-13B	909551			\checkmark	
BMO-2008-13M	909760			\checkmark	
BMO-2010-1M	219957	\checkmark	✓	\checkmark	✓
BMO-2010-2M	219958	✓	\checkmark	\checkmark	✓
BMO-2010-3B	219970	✓	\checkmark	\checkmark	✓
BMO-2010-3M	219969	✓	✓	\checkmark	✓
CHAMBERS	629807	✓	✓	\checkmark	✓
COB MW-1	903992			\checkmark	
COB MW-2	903984	✓		\checkmark	
COB MW-3	906823	T		\checkmark	
COB WL	593116	T		\checkmark	
COOPER	623564	✓	✓	\checkmark	✓
COOPER C	637069	✓	\checkmark	\checkmark	✓
DODSON	644927	✓	✓	\checkmark	✓



Table 1 Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	ADWR 55 Registry No.		Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
DOUGLASS 791	592791	WLO		WLO	
DOUGLASS 792	592792	WLO		WLO	
DURAZO	NR	✓	✓	\checkmark	✓
EAST	599796	✓	✓	\checkmark	✓
ECHAVE	219449	\checkmark	\checkmark	\checkmark	\checkmark
EPPELE 641	805641	✓	✓	\checkmark	✓
FLEMING	218386	WLO		WLO	
FRANCO 101	500101	\checkmark	\checkmark	~	✓
FRANCO 383	221383	✓	\checkmark	\checkmark	✓
FULTZ	212447	✓	\checkmark	\checkmark	\checkmark
GARNER 557	558557	WLO		WLO	
GARNER 635	587635	✓	✓	\checkmark	✓
GGOOSE 547	628547	✓		\checkmark	
GOAR RANCH	610695	WLO		WLO	
HOBAN	805290	✓	✓	\checkmark	✓
HOWARD NR	NR	\checkmark	✓	\checkmark	\checkmark
HOWARD 312	221312	✓	✓	\checkmark	✓
KEEFER	209744	✓	✓	✓	✓
MARCELL	NR	\checkmark	✓	\checkmark	\checkmark
MCCONNELL 265	539265	✓	✓	\checkmark	✓
MCCONNELL 459	221459	\checkmark	✓	\checkmark	\checkmark
METZLER	35-71891	\checkmark	✓	\checkmark	\checkmark
MOORE	538847	✓	✓	\checkmark	\checkmark
NESS	509127	\checkmark		\checkmark	
NOTEMAN	212483	\checkmark	\checkmark	\checkmark	\checkmark
NWC-02	562944	\checkmark	\checkmark	\checkmark	\checkmark
NWC-03	203321	✓	✓	\checkmark	✓
NWC-03 CAP	627684	WLO		WLO	
NWC-04	551849	\checkmark	\checkmark	\checkmark	\checkmark
NWC-06	575700	✓	\checkmark	\checkmark	✓
OSBORN	643436	✓		\checkmark	
PALMER	578819	✓	✓	\checkmark	✓
PANAGAKOS	35-76413			\checkmark	
PARRA	576415	✓	✓	\checkmark	\checkmark
PIONKE 395	613395	✓	✓	\checkmark	\checkmark
PIONKE 517	221517	✓	\checkmark	\checkmark	✓
POOL	509518	✓	\checkmark	\checkmark	✓
RAMIREZ	216425	✓	✓	\checkmark	\checkmark
RAY	803772	✓	✓	\checkmark	\checkmark



Table 1
Schedule for Water Quality Sampling and Water Level Monitoring

Well Name	Pogietry No		Quarterly Sampling Second Quarter	Annual Sampling Third Quarter	Quarterly Sampling Fourth Quarter
ROGERS 596/803	573596	✓	✓	✓	✓
ROGERS E	216018	✓	✓	\checkmark	✓
RUIZ	531770	✓	✓	\checkmark	✓
SCHWARTZ	210865	✓	✓	\checkmark	✓
STEPHENS	808560	WLO		WLO	
SUNBELT	201531	WLO		WLO	
SWAN	NR	✓		\checkmark	
TM-02A	522574	✓		✓	
TM-06 MILLER	522695			✓	
TM-07	522576	✓		✓	
TM-15 MILLER	522699			✓	
TM-16	522578			✓	
TM-19A	522580	✓		✓	
TM-42	562554			✓	
TVI 236	802236			✓	
TVI 713	567713	WLO		WLO	
TVI 875	568875	✓	✓	\checkmark	✓
WEED	544535	✓	✓	✓	✓
WEISKOPF	641802	✓	✓	✓	✓
ZANDER	205126	✓	\checkmark	\checkmark	\checkmark

Notes:

ADWR = Arizona Department of Water Resources

WLO = Water Level Only

NR = No Record



Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
ANDERSON 396	613396	Anderson	Well Inventory	236	Y	Y	Water quality sample collected in July 2012
ANDERSON 458	221458	Anderson	Plume	734	Y	Y	Water quality sample collected in September 2012.
AWC-02	616586	Arizona Water Company	Plume	330	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because well was pumping.
AWC-03	616585	Arizona Water Company	Plume	269	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because well was pumping.
AWC-04	616584	Arizona Water Company	Plume	250	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because well was pumping.
AWC-05	590620	Arizona Water Company	Plume	1183	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because well was pumping.
BANKS 986	647986	Banks	Well Inventory	435	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead is not accessible.
BANKS 987	647987	Banks	Well Inventory	339	Y	Ν	Water level collected in July 2012.
BARTON 919	644919	Barton	Plume	130	Ν	Ν	Unable to access well. Unable to contact well owner.
BF-01	539783	Copper Queen Branch	Plume	400	Y	Y	Water quality sample collected in August 2012.
BIMA	577927	Bisbee Municipal Airport	Plume	465	Ν	Y	Water quality sample collected in July 2012. Water level not collected due to obstruction in well.
BMO-2008-1G	909474	Copper Queen Branch	Plume	310	Y	Y	Water quality sample collected in August 2012.
BMO-2008-3B	909147	Copper Queen Branch	Plume	260	Y	Y	Water quality sample collected in July 2012.
BMO-2008-4B	910096	Copper Queen Branch	Plume	610	Y	Y	Water quality sample collected in August 2012.
BMO-2008-5B	909653	Copper Queen Branch	Plume	285	Y	Y	Water quality sample collected in July 2012.
BMO-2008-5M	909552	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in July 2012.
BMO-2008-6B	909146	Copper Queen Branch	Plume	265	Y	Y	Water quality sample collected in July 2012.
BMO-2008-6M	909019	Copper Queen Branch	Plume	450	Y	Y	Water quality sample collected in July 2012.
BMO-2008-7M	908794	Copper Queen Branch	Plume	670	Y	Y	Water quality sample collected in July 2012.
BMO-2008-8B	910097	Copper Queen Branch	Plume	480	Y	Y	Water quality sample collected in July 2012.
BMO-2008-8M	909711	Copper Queen Branch	Plume	1210	Y	Y	Water quality sample collected in July 2012.
BMO-2008-9M	909255	Copper Queen Branch	Plume	775	Y	Y	Water quality sample collected in July 2012.
BMO-2008-10GL	909435	Copper Queen Branch	Plume	810	Y	Y	Water quality sample collected in July 2012.
BMO-2008-10GU	909272	Copper Queen Branch	Plume	449	Y	N	Well is not operational.
BMO-2008-11G	909434	Copper Queen Branch	Plume	760	Y	Y	Water quality sample collected in August 2012.
BMO-2008-13B	909551	Copper Queen Branch	Plume	474	Y	Y	Water quality sample collected in July 2012.
BMO-2008-13M	909760	Copper Queen Branch	Plume	1030	Y	Y	Water quality sample collected in August 2012.
BMO-2010-1M	219957	Copper Queen Branch	Plume	540	Y	Y	Water quality sample collected in July 2012.
BMO-2010-2M	219958	Copper Queen Branch	Plume	370	Y	Y	Water quality sample collected in July 2012.



BMD 2010 30 21997 Conper Clueme haves Cooper Clueme haves Plume 330 V Y Water quality sample collected in July 2012. BMD 2010 31M 21998 Scaper Clueme Plume 532 V Y Water quality sample collected in July 2012. CHAMBERS 629007 Chambers Well inventory 245 N Y Water quality sample collected in July 2012. Unables to collected in July 2012. COB MM-2 903984 City of Biabee Plume 420 Y Y Water quality sample collected in July 2012. COB MM-3 990823 City of Biabee Plume 150 Y Y Water quality sample collected in July 2012. COB MM-3 990823 City of Biabee Plume 250 Y Y Water quality sample collected in July 2012. Voltable COOPER 02564 Cooper Plume 220 Y Y Water quality sample collected in July 2012. Unable to collect water breazes withwat was not accessible. COOPER 037069 Hutson Plume 200 N Y Wate	Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
BANC-2013-3MZielesZielesFinanePinneS.32YYWater quality sample collected in July 2012.CHAMBERS623987ChambersWell Inventory245NYWell equality sample collected in July 2012.COB MV-190392City of BiabeePlume420YYWell equality sample collected in July 2012.COB MV-290394City of BiabeePlume170YYWell equality sample collected in July 2012.COB MV-3906823City of BiabeePlume150YYWell equality sample collected in July 2012.COB MV-3906823CooperPlume325NYWell equality sample collected in July 2012.COOPER637969HulsonPlume220YYWell equality sample collected in July 2012.DODSON644927DodonPlume220YYWell equality sample collected in July 2012.DOUGLASS 791562791DodglassWell Inventory200YNWell equality sample collected in July 2012.DUCLASS 792562792DodglassWell Inventory200YNWell equality annyle collected in July 2012.DUCLASS 792569796EastWell Inventory125YYWell equality annyle collected in July 2012.EAST569796EastWell Inventory126YYWell equality annyle collected in July 2012.ELNA509796EastWell Inventory126Y <td>BMO-2010-3B</td> <td>219970</td> <td></td> <td>Plume</td> <td>330</td> <td>Y</td> <td>Y</td> <td>Water quality sample collected in July 2012.</td>	BMO-2010-3B	219970		Plume	330	Y	Y	Water quality sample collected in July 2012.
LANMER NoLAMMER NoViel InventoryA45NYcollect water invel because wellhead is not accessible.COB MW-1903962City of BiabeePlume420YYWater quality sample collected in July 2012.COB MW-2903864City of BiabeePlume170YYWater quality sample collected in July 2012.COB MW-3906823City of BiabeePlume150YYWater quality sample collected in July 2012.COB MU59316City of BiabeePlume150YYWater quality sample collected in July 2012.COOPER637069HutsonPlume220YYWater quality sample collected in July 2012.DOUSON644927DodsonPlume200NYWater quality sample collected in July 2012.DOUGLASS 79152791DouglassWell Inventory200YNWell divertified for water level measurements only. WaterDURAZONRDurazoWell Inventory200YNWell identified for water level measurements only. WaterEAST599796EastWell Inventory125YYWell identified for water level measurements only. WaterECHAVE219449EchaveWell Inventory285YYWell identified for water level measurements only. WaterECHAVE219449EchaveWell Inventory285YYWater quality sample collected in July 2012.ECHAVE129449Kell Inventory	BMO-2010-3M	219969		Plume	532	Y	Y	Water quality sample collected in July 2012.
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COB MW-3906823City of BisbeePlume269YYWater quality sample collected in July 2012.COB MU993116City of BisbeePlume325NYWater quality sample collected in July 2012.COOPER632564CooperPlume325NYWater quality sample collected in July 2012. Unable to collect Water because wellhead was not accessible.COOPERC637069HutsonPlume220YYWater quality sample collected in July 2012. Unable to collect Water because wellhead was not accessible.DODSON644927DodsonPlume200NYWater quality sample collected in July 2012. Unable to collect Water level measurements only. Water level measurement taken in July 2012.Unable to collect Water level measurements only. Water level measurement taken in July 2012.DOUGLASS 791592792DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DUGLASS 792592792DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DUGLASS 793592792DouglassWell Inventory250YYWater quality sample collected in July 2012.EAST599796EastWell Inventory245YYWater quality sample collected in July 2012.ECHAVE219449EchaveWell Inventory245YYWater quality sample collected i	COB MW-1	903992	City of Bisbee	Plume	420	Y	Y	Water quality sample collected in July 2012.
COBFigure </td <td>COB MW-2</td> <td>903984</td> <td>City of Bisbee</td> <td>Plume</td> <td>170</td> <td>Y</td> <td>Y</td> <td>Water quality sample collected in July 2012.</td>	COB MW-2	903984	City of Bisbee	Plume	170	Y	Y	Water quality sample collected in July 2012.
COOPER623684CooperPlume325NYWater quality sample collected in July 2012. Unable to collect water because wellhead was not accessible.COOPER C637069HutsonPlume220YYWater quality sample collected in July 2012. Unable to collect water level measurements only. Water level measurement taken in July 2012. Unable to collect water level measurements only. Water level measurement taken in July 2012.DOUGLASS 791592791DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DUIGLASS 792592792DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DURAZONRDurazoWell InventoryNDNNUnable to collect water level or water quality sample collected in July 2012.ECHAVE219449EchaveWell Inventory125YYWater quality sample collected in July 2012.EPELE 641805641EppeleWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory265YYWater quality sample collected in July 2012. <t< td=""><td>COB MW-3</td><td>906823</td><td>City of Bisbee</td><td>Plume</td><td>269</td><td>Y</td><td>Y</td><td>Water quality sample collected in July 2012.</td></t<>	COB MW-3	906823	City of Bisbee	Plume	269	Y	Y	Water quality sample collected in July 2012.
COUPER0.3394CooperFilling3.23NYcollect water because wellhead was not accessible.COOPER C637069HutsonPlume220YYWater quality sample collected in July 2012.DODSON644927DodsonPlume200NYWater quality sample collected in July 2012. Unable to collect water level because wellhead is not accessible.DOUGLASS 791592791DouglassWell inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DOUGLASS 792592792DouglassWell inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DURAZONRDurazoWell inventoryNDNNUnable to collect water level or water quality sample because well is not operational.EAST599766EastWell inventory125YYWater quality sample collected in July 2012.ECHAVE219449EchaveWell inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell inventory200NNWell inventory inventoryFLEMING218386FlemingWell inventory200NNWell inventory inventoryFLEMING218386FlemingWell inventory200NNWell inventory inventoryGOTO1500101FrancoWell inventory200N <t< td=""><td>COB WL</td><td>593116</td><td>City of Bisbee</td><td>Plume</td><td>150</td><td>Y</td><td>Y</td><td>Water quality sample collected in July 2012.</td></t<>	COB WL	593116	City of Bisbee	Plume	150	Y	Y	Water quality sample collected in July 2012.
DODSON644927DodsonPlume200NYWater quality sample collected in July 2012. Unable to collect water level measurements only. Water level measurements only. Water level measurement taken in July 2012DOUGLASS 791592791DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012DOUGLASS 792592792DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012DURAZONRDurazoWell InventoryNDNNUnable to collect water level or water quality sample because well is not operational.EAST599796EastWell Inventory125YYWater quality sample collected in July 2012.ECHAVE219449EchaveWell Inventory145NYWater quality sample collected in July 2012.EPPELE 641805641EppeleWell Inventory265YYWater quality sample collected in July 2012.FRANCO 101500101FrancoWell Inventory200NNWell identified for water level measurements only. Water level measurement taken in July 2012.FULTZ212437FrancoPlume711YYWater quality sample collected in Suly 2012.FULTZ212447FultzWell Inventory300NNWell inventory 10a0GARNER 65755857GarnerPlume300YNWater	COOPER	623564	Cooper	Plume	325	Ν	Y	
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DOUGLASS 791592791DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012DOUGLASS 792592792DouglassWell Inventory200YNWell identified for water level measurements only. Water level measurement taken in July 2012.DURAZONRDurazoWell InventoryNDNNUnable to collect water level or water quality sample because well is not operational.EAST599796EastWell Inventory125YYWater quality sample collected in July 2012.ECHAVE219449EchaveWell Inventory345NYWater quality sample collected in July 2012.FLEMING219386FlemingWell Inventory265YYWater quality sample collected in July 2012.FLEMING219386FlemingWell Inventory200NNWell inventory water level measurement solv. Water level measurement taken in July 2012.FLAINOS213386FlemingWell Inventory200NNWater quality sample collected in July 2012.FLAINOS21338FrancoPlume711YNWell inventory inventory inventoryNFULTZ212447FultzWell Inventory300NNWater quality sample collected in September 2012.GARNER 55753557GarnerPlume300YNWell identified for water level measurement taken in July 2012.GGOOSE 547628547 </td <td>DODSON</td> <td>644927</td> <td>Dodson</td> <td>Plume</td> <td>200</td> <td>N</td> <td>Y</td> <td></td>	DODSON	644927	Dodson	Plume	200	N	Y	
DUGGLASS /92592/92DugglassWell inventory200YNievel measurement taken in July 2012.DURAZONRDurazoWell InventoryNDNNUnable to collect water level or water quality sample because well is not operational.EAST599796EastWell Inventory125YYWater quality sample collected in July 2012.ECHAVE219449EchaveWell Inventory345NYWater quality sample collected in July 2012. Unable to collect water level due to obstruction in well.EPFELE 641805641EppeleWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory265YYWater quality sample collected in July 2012.FRANCO 101500101FrancoWell Inventory200NNWell identified for water level measurements only. Water level measurement taken in July 2012.FULTZ212447FultzWell Inventory200NNWell identified for water level measurements only. Water level measurement taken in July 2012.GARNER 557558557GarnerPlume300NNWell revel revel due to obstruction in well.GGOOSE 547628547Copper Queen BranchPlume800NNWell identified for water level measurements only. Water level measurement taken in July 2012.GAR NER 635586567GoarWell Inventory250YNWell identified for water leve	DOUGLASS 791	592791	Douglass	Well Inventory	200	Y	N	Well identified for water level measurements only. Water
DURACONRDurazoWeil InventoryNDNNNbecause well is not operational.EAST599796EastWell Inventory125YYWater quality sample collected in July 2012.ECHAVE219449EchaveWell Inventory345NYWater quality sample collected in July 2012. Unable to collect water level due to obstruction in well.EPPELE 641805641EppeleWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory265YNWell identified for water level measurements only. WaterFLEMING218386FlemingWell Inventory265YYNWell identified for water level measurements only. WaterFLEMING218386FlemingWell Inventory265YNNWell identified for water level measurements only. WaterFRANCO 101500101FrancoWell Inventory200NNWell identified for water level measurements only. WaterFULTZ212447FultzWell Inventory300NNWater quality sample not collected per owner request. Unable to collect water level measurements only. WaterGARNER 63558763GarnerPlume300YNWell identified for water level measurements only. WaterGGOOSE 547628547Copper Quee	DOUGLASS 792	592792	Douglass	Well Inventory	200	Y	Ν	
ECHAVE219449EchaveWell Inventory345NYWater quality sample collected in July 2012. Unable to collect water level due to obstruction in well.EPPELE 641805641EppeleWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory400YNWell entified for water level measurements only. Water level measurement taken in July 2012.FRANCO 101500101FrancoWell Inventory200NNWell is not currently operational.FRANCO 383221383FrancoPlume711YYWater quality sample collected in September 2012.FULTZ212447FultzWell Inventory300NNWater quality sample collected per owner request. Unable to colscit water level measurements only. Water level measurement taken in July 2012.GARNER 557558557GarnerPlume300YNWell inventory eventsGGOOSE 547628547Copper Queen BranchPlume8800NNWell inventory eventsGOAR RANCH610895GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory250YYWater quality sample collected in July 2012.GOOSE 547628547Copper Queen BranchPlume800NNWell identified for water level measuremen	DURAZO	NR	Durazo	Well Inventory	ND	N	Ν	
ECHAVE219449EchaveWeil Inventory345NYcollect water level due to obstruction in well.EPPELE 641805641EppeleWell Inventory265YYWater quality sample collected in July 2012.FLEMING218386FlemingWell Inventory400YNWell identified for water level measurements only. Water level measurements only 2012.FRANCO 101500101FrancoWell Inventory200NNWell is not currently operational.FRANCO 383221383FrancoPlume711YYWater quality sample collected in September 2012.FULTZ212447FultzWell Inventory300NNWater quality sample not collected per owner request. Unable to collect water level measurements only. Water level measurement taken in July 2012.GARNER 557GarnerPlume300YNWell identified for water level measurements only. Water level measurement taken in July 2012.GGOOSE 547628547GoarPlume680YYWater quality sample collected in July 2012.GOAR RANCH610695GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.	EAST	599796	East	Well Inventory	125	Y	Y	Water quality sample collected in July 2012.
FLEMING218386FlemingWell Inventory400YNWell identified for water level measurements only. Water level measurement taken in July 2012.FRANCO 101500101FrancoWell Inventory200NNWell is not currently operational.FRANCO 383221383FrancoPlume711YYWater quality sample collected in September 2012.FULTZ212447FultzWell Inventory300NNWater quality sample not collected per owner request. Unable to collect water level due to obstruction in well.GARNER 557558557GarnerPlume300YNWell identified for water level measurements only. Water level measurement taken in July 2012.GGOOSE 547628547Copper Queen BranchPlume680YYWater quality sample collected in July 2012.GOAR RANCH610695GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory250YNWell indentified for water level measurements only. Water level measurement taken in September 2012.	ECHAVE	219449	Echave	Well Inventory	345	N	Y	
FLEMING213386FiemingWeil Inventory400YNIevel measurement taken in July 2012.FRANCO 101500101FrancoWell Inventory200NNWell is not currently operational.FRANCO 383221383FrancoPlume711YYWater quality sample collected in September 2012.FULTZ212447FultzWell Inventory300NNWater quality sample not collected per owner request. Unable to collect water level due to obstruction in well.GARNER 557558557GarnerPlume300YNWell identified for water level measurements only. Water level measurement taken in July 2012.GGOOSE 547628547Copper Queen BranchPlume800NNWell not operational.GOAR RANCH610695GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory316YYWater quality sample collected in July 2012.	EPPELE 641	805641	Eppele	Well Inventory	265	Y	Y	Water quality sample collected in July 2012.
FRANCO 383221383FrancoPlume711YYWater quality sample collected in September 2012.FULTZ212447FultzWell Inventory300NNWater quality sample not collected per owner request. Unable to collect water level due to obstruction in well.GARNER 557558557GarnerPlume300YNWell identified for water level measurements only. Water level measurement taken in July 2012.GARNER 635587635GarnerPlume680YYWater quality sample collected in July 2012.GGOOSE 547628547Copper Queen BranchPlume800NNWell not operational.GOAR RANCH610695GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory316YYWater quality sample collected in July 2012.	FLEMING	218386	Fleming	Well Inventory	400	Y	Ν	
FULTZ212447FultzWell Inventory300NNWater quality sample not collected per owner request. Unable to collect water level due to obstruction in well.GARNER 557558557GarnerPlume300YNWell identified for water level measurements only. Water level measurement taken in July 2012.GARNER 635587635GarnerPlume680YYWater quality sample collected in July 2012.GGOOSE 547628547Copper Queen BranchPlume800NNWell into operational.GOAR RANCH610695GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory316YYWater quality sample collected in July 2012.	FRANCO 101	500101	Franco	Well Inventory	200	Ν	Ν	Well is not currently operational.
FOL 12212447FultzWell Inventory300NNUnable to collect water level due to obstruction in well.GARNER 557558557GarnerPlume300YNWell identified for water level measurements only. Water level measurement taken in July 2012.GARNER 635587635GarnerPlume680YYWater quality sample collected in July 2012.GGOOSE 547628547Copper Queen BranchPlume800NNWell not operational.GOAR RANCH610695GoarWell Inventory250YNWell identified for water level measurements only. Water level measurement taken in September 2012.HOBAN805290Copper Queen BranchWell Inventory316YYWater quality sample collected in July 2012.	FRANCO 383	221383	Franco	Plume	711	Y	Y	Water quality sample collected in September 2012.
GARNER 55/ 55855/ Garner Plume 300 Y N level measurement taken in July 2012. GARNER 635 587635 Garner Plume 680 Y Y Water quality sample collected in July 2012. GGOOSE 547 628547 Copper Queen Branch Plume 800 N N Well not operational. GOAR RANCH 610695 Goar Well Inventory 250 Y N Well identified for water level measurements only. Water level measurement taken in September 2012. HOBAN 805290 Copper Queen Branch Well Inventory 316 Y Y Water quality sample collected in July 2012.	FULTZ	212447	Fultz	Well Inventory	300	Ν	Ν	
GGOOSE 547 628547 Copper Queen Branch Plume 800 N N Well not operational. GOAR RANCH 610695 Goar Well Inventory 250 Y N Well identified for water level measurements only. Water level measurement only. Water level measurement taken in September 2012. HOBAN 805290 Copper Queen Branch Well Inventory 316 Y Y Water quality sample collected in July 2012.	GARNER 557	558557	Garner	Plume	300	Y	N	,
GGOOSE 547 628547 Branch Plume 800 N N Well not operational. GOAR RANCH 610695 Goar Well Inventory 250 Y N Well identified for water level measurements only. Water level measurements only. Water level measurement taken in September 2012. HOBAN 805290 Copper Queen Branch Well Inventory 316 Y Y Water quality sample collected in July 2012.	GARNER 635	587635	Garner	Plume	680	Y	Y	Water quality sample collected in July 2012.
GOAR RANCH 610695 Goar Well inventory 250 Y N level measurement taken in September 2012. HOBAN 805290 Copper Queen Branch Well Inventory 316 Y Y Water quality sample collected in July 2012.	GGOOSE 547	628547		Plume	800	N	N	Well not operational.
HOBAN 805290 Branch Well Inventory 316 Y Y Water quality sample collected in July 2012.	GOAR RANCH	610695	Goar	Well Inventory	250	Y	Ν	
	HOBAN	805290		Well Inventory	316	Y	Y	Water quality sample collected in July 2012.
	HOWARD NR	NR	Howard	Well Inventory	200	Y	Y	Water quality sample collected in September 2012.



Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
HOWARD 312	221312	Howard	Plume	980	Y	Y	Water quality sample collected in August 2012.
KEEFER	209744	Keefer	Well Inventory	245	Y	Y	Water quality sample collected in July 2012.
MARCELL	NR	Marcell	Well Inventory	220	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead was not accessible.
MCCONNELL 265	539265	McConnell	Well Inventory	216	Y	Y	Water quality sample collected in July 2012.
MCCONNELL 459	221459	McConnell	Plume	863	Y	Y	Water quality sample collected in July 2012.
METZLER	35-71891	Metzler	Well Inventory	351	Y	Ν	Water level measurement collected July 2012. Unable to collect water quality sample because well is not operational.
MOORE	538847	Moore	Well Inventory	220	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead is not accessible.
NESS	509127	Ness	Well Inventory	812	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level due to obstruction in well.
NOTEMAN	212483	Bailey	Well Inventory	400	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level due to obstruction in well.
NWC-02	562944	Naco Water Company	Plume	312	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because the well was pumping.
NWC-03	203321	Naco Water Company	Plume	312	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because the well was pumping.
NWC-03 CAP	627684	Naco Water Company	Plume	179	Y	Ν	Well identified for water level measurements only. Water level measurement taken in July 2012.
NWC-04	551849	Naco Water Company	Well Inventory Sulfate Trend	795	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because well was pumping.
NWC-06	575700	Naco Water Company	Well Inventory	410	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because the well was pumping.
OSBORN	643436	Osborn	Plume	258	Y	Ν	Well is not in use. Collected water level only.
PALMER	578819	Palmer	Well Inventory	220	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead is inaccessible.
PANAGAKOS	35-76413	Panagakos	Well Inventory	200	Y	Y	Water quality sample collected in July 2012.
PARRA	576415	Parra	Plume	355	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead was not accessible.
PIONKE 395	613395	Pionke	Well Inventory	300	Y	Y	Water quality sample collected in July 2012.
PIONKE 517	221517	Pionke	Plume	604	Y	Y	Water quality sample collected in September 2012.
POOL	509518	Pool	Well Inventory	313	Ν	N	Unable to access well. Unable to contact well owner .
RAMIREZ	216425	Ramirez	Well Inventory	300	Y	Y	Water quality sample collected in July 2012.
RAY	803772	Ray	Well Inventory	100	Y	Y	Water quality sample collected in July 2012.
ROGERS 596	573596	Rogers, David	Plume	290	Y	Ν	Well is turned off. Rogers residence uses ROGERS 803. Water level measurement collected in July 2012.
ROGERS 803	641803	Rogers, Ernest M	Plume	140	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level measurement because of obstruction in well.



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Well Name	ADWR 55 Registry No.	Owner	Monitoring Purpose	Casing Depth (feet bls)	Water Level Measured?	Water Sample Collected?	Status
ROGERS E	216018	Rogers, Ernest M	Well Inventory	290	Y	Y	Water quality sample collected in July 2012.
RUIZ	531770	Ruiz	Well Inventory	312	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level measurement because of obstruction in well.
SCHWARTZ	210865	Schwartz	Well Inventory	305	Y	Y	Water quality sample collected in July 2012.
STEPHENS	808560	Stephens	Well Inventory	NR	Y	N	Well identified for water level measurements only. Water level measurement taken in July 2012.
SUNBELT	201531	Sunbelt Marketing, Inc.	Well Inventory	380	Ν	Ν	Well is dry.
SWAN	NR	Swan	Well Inventory	NR	Y	Y	Water quality sample collected in July 2012.
TM-02A	522574	Copper Queen Branch	Plume	925	Y	Y	Water quality sample collected in August 2012.
TM-06 MILLER	522695	Miller	Plume	200	Y	Y	Water quality sample collected in July 2012.
TM-07	522576	Copper Queen Branch	Plume	350	Ν	Y	Water quality sample collected in August 2012. Water level measurement not taken.
TM-15 MILLER	522699	Miller	Well Inventory	325	Ν	Y	Water quality sample collected in July 2012. Water level measurement not taken.
TM-16	522578	Copper Queen Branch	Plume	115	Y	Y	Water quality sample collected in July 2012.
TM-19A	522580	Copper Queen Branch	Plume	700	Y	Y	Water quality sample collected in July 2012.
TM-42	562554	Copper Queen Branch	Plume	250	Y	Y	Water quality sample collected in July 2012.
TVI 236	802236	Turquoise Valley, Inc.	Well Inventory	222	Y	Y	Water quality sample collected in July 2012.
TVI 713	567713	Turquoise Valley, Inc.	Well Inventory	200	Y	Ν	Well identified for water level measurements only. Water level measurement taken in July 2012.
TVI 875	568875	Turquoise Valley, Inc.	Plume	330	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead was not accessible.
WEED	544535	Weed	Plume	320	Ν	Y	Water quality sample collected in July 2012. Unable to collect water level because wellhead was not accessible.
WEISKOPF	641802	Weiskopf	Plume	200	Y	Y	Water quality sample collected in July 2012.
ZANDER	205126	Zander	Well Inventory	280	Y	Y	Water quality sample collected in July 2012.

ADWR = Arizona Department of Water Resources

ft bls = feet below land surface

NR = No Record

35-71891 = ADWR 35 Database

Y = Yes

N = No



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
ANDERSON 396	613396	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	562 609
	-	4/11/11 7/14/11	6.92 7.23	15.1 24.4	1485 1451	678
		10/11/11	6.65	24.4	1451	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
ANDERSON 458	221458	9/9/12	8.34	25.9	406.3	31
ANDERGON 450	221400	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
AWC-02	616586	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
	-	1/7/08	ND	ND	ND	41
		3/3/08 5/5/08	ND ND	ND ND	ND ND	<u>38</u> 37.3
		8/12/08	7.28	22.4	469	38.8
		10/23/08	7.48	22.4	469	41.8
		3/11/09	7.25	21.0	462	64.2
		4/22/09	7.30	21.2	452	42.4
	-	7/22/09	7.39	22.6	456	41.8
		10/21/09	7.48	22.0	540	50.5
		2/3/10	7.44	19.7	449	42.0
AWC-03	616585	4/23/10	7.57	19.7	468	44.4
		7/20/10	7.29	23.8	460	46.7
		11/4/10	7.80	20.8	452.3	46.3
		1/19/11	7.07	19.6	560	49.0
		4/7/11	7.28	19.9	469.8	46.8
		7/13/11	6.33	23.1	458.8	47.6
		7/13/11 DUP	6.33	23.1	458.8	46.2
		10/13/11	6.69	23.8	463.6	48.8
		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



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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
AWC-04	616584	4/23/10	7.14	19.2	625	27.4
		7/20/10	7.02	24.1	600	26.6
		11/4/10	7.41	20.3	593.2	24.0
		1/19/11	8.15	20.5	690	26.2
		4/7/11	7.00	20.4	637.2	25.8
		7/13/11	6.88	20.4	610.1	25.7
		10/13/11	6.38	24.0	619.7	27.6
		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
		2/4/08	ND	ND	ND	13
		4/7/08	ND	ND	ND	
		6/2/08 8/12/08	ND 6.74	ND 23.3	ND 425	14.3 14.9
		10/23/08	7.45	23.3	425	14.9
		3/11/09	7.31	21.0	398	16.5
		6/3/09	7.33	22.0	418	12.1
		7/22/09	7.49	22.0	418	14.1
	-	10/21/09	7.37	21.1	433	16.5
	-	2/3/10	7.35	19.3	438	16.3
AWC-05	590620	4/23/10	7.62	18.9	430	17.6
		7/20/10	7.62	24.2	440	19.1
		11/4/10	7.92	20.7	427.1	18.4
		1/19/11	7.64	20.3	420	17.0
		4/7/11	7.22	20.8	438.3	17.6
		7/13/11	6.52	22.9	419.8	17.9
		10/13/11	6.82	26.0	427.5	19
		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
		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
BANKS 986	647986	4/20/10	7.71	22.8	1013	53.9
DAINKS 900	047980	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 25.4	965.0	64.5
		7/11/11 10/12/11	7.88	25.4	890.0 1551	<u>68.8</u> 172
		1/31/12	7.69	20.2	1017	64.3
		1/31/12 1/31/2012 DUP	7.69	20.2	1017	64.9
		4/11/12	7.69	20.2	1017	64.9
		7/6/12	7.66	22.0	940	78.6
	I –	7/6/12 DUP	7.66	23.7	940	77.9



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		3/4/08	6.46	21.9	2745	1320
		5/23/08	6.41	18.3	2698	1450
		8/5/08	6.11	22.4	3095	1330
		11/5/08	6.33	19.9	3027	1490
		2/20/09	6.42	19.2	1477	1330
		5/6/09	5.98	23.9	2632	1280
BF-01	539783	8/17/09 11/4/09	6.21 6.24	29.7 23.0	2948 2846	1250 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
		2/6/08	6.69	22.2	1335	210
		4/25/2008 ¹	6.37	23.1	1521	190
		5/13/2008 ¹	6.58	22.7	1489	195
		6/23/2008 ¹	6.30	23.3	1572	225
	_	6/23/08 DUP	6.30	23.3	1572	196
		7/29/2008 ¹	6.44 M	23.0	1647 1776	204
		8/28/2008 ¹	6.29	23.0 23.0	1776	256 296
		9/23/2008 ¹ 10/22/08	6.41	22.3	1801	290
		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
BIMA	577927	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	М	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 8/25/11	6.61 6.27	24.0 25.9	1643 1460	282 300
		10/10/11	6.5	25.9	1460	300
		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
		2/5/08	7.43	20.2	714	206
		4/21/2008 ¹	7.06	21.9	753	201
		5/15/2008 ¹	7.16	22.2	845	211
BLOMMER	633472	6/23/2008 ¹	6.93	21.5	903	193
DEGIMIEI	000172	7/29/2008 ¹	7.21	22.2	921	203
		8/27/2008 ¹	7.12	22.1	864	189
		9/23/2008 ¹	7.16	22.3	818	193
		10/22/08	7.17	21.3	873	200
		8/27/08 11/11/08	7.09 7.00	24.2 20.8	808 721	107 143
		2/25/09	7.00	20.8	860	143
		4/28/09	7.01	22.0	762	198
		8/4/09	7.23	22.8	950	190
		10/27/09	7.11	21.9	922	103
BMO-2008-1G	000474	2/17/10	7.36	20.5	899.3	98.4
DIVIO-2008-1G	909474	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



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
BMO-2008-3B	909147	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 7/12/11	6.98 7.04	20.6 21.4	698 672	169 148
		2/23/12	6.92	21.4	6.95	140
	1 F	7/10/12	7.02	21.0	651	173
	1	12/11/08	7.34	21.5	374	9.4
		2/18/09	7.17	23.2	374	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
BMO-2008-4B	910096	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	9.50
		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
BMO 2008 ED	000653	4/15/10	7.21	23.0	571	194
BMO-2008-5B	909653	7/7/10	6.94	22.2	551	183
		10/5/10	6.85	22.3 21.8	722 725	201 203
	1 F	2/14/11 5/12/11	6.90 7.06	21.0	725	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
	1 1	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
BMO-2008-5M	909552	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



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
	000110	4/15/10	7.47	21.0	362	37.0
BMO-2008-6B	909146	7/1/10	7.24	22.2	361	40.1
		10/5/10 2/14/11	7.05	21.0	407	37.2 40.2
	-	5/12/11	7.32	<u>21.8</u> 21.5	397 380	40.2
		7/12/11	7.27	21.3	390	37.8
	-	12/7/11	7.28	20.8	330	21.8
	-	2/3/12	7.28	20.8	346	23.0
	-	4/18/12	7.25	21.4	336	19.7
	-	7/10/12	6.86	21.4	328	21.9
		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
BMO-2008-6M	909019	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
	E	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
		7/14/08	7.63	25.2	500	31.4
	-	11/6/08 2/18/09	7.53 7.31	22.6 23.3	380 452	34.5 27.6
		5/11/09	7.43	23.3	432	26.0
	-	8/6/09	7.81	24.4	420	25.1
	-	10/27/09	7.53	23.0	470	26.1
		2/17/10	7.57	23.4	452	25.4
BMO-2008-7M	908794	2/17/10 DUP	7.57	23.4	452	25.0
2000 110		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
		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
D 10 (11/9/09 DUP	6.33	21.8	2889	1520
BMO-2008-8B	910097	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



Table 3 Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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 8/10/09	7.19 7.49	25.1 24.8	680 673	122 107
	-	11/5/09	7.30	25.4	675	107
BMO-2008-8M	909711	3/3/10	7.70	24.1	641	99.5
DIVIO-2000-OIVI	909711	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	<u>98.2</u> 79.9
	-	7/15/11 1/30/12	<u>6.89</u> 7.36	22.1 23.9	590 565	79.9
	-	7/12/12	7.15	24.2	554	73.1
		7/12/12 DUP	7.15	24.2	554	73.2
		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	482 449	28.8
	-	5/12/09 8/17/09	7.76	24.8 25.6	534	51.7 53.4
	-	11/3/09	7.82	24.9	552	56.9
BMO-2008-9M	909255	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 67.4
	-	2/1/12 7/12/12	7.54 7.68	22.4 24.2	516 513	68.9
		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
BMO-2008-10GL	909435	11/2/09	6.52	26.7	2565	1100
	-	3/4/10	6.76	24.1	2937	1080
		4/8/10 7/2/10	6.03 6.16	25.6 26.3	1575 1338	1260 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
		8/4/08	6.41	23.6	3660	2210
		11/5/08	6.15	20.2	3343	1890
	-	2/25/09 5/6/09	5.96 5.99	22.7 23.2	3426 3359	<u>1740</u> 1710
	-	8/11/09	6.28	22.5	3348	1690
BMO-2008-10GU	909272	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 2/1/12	6.12 6.09	22.3 19.2	3890 3820	1670 1870
	+ +	8/22/08	8.02	28.2	3820	1870
		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
BMO-2008-11G	909434	3/1/10 4/9/10	8.37 6.88	23.2 24.5	338 301	13.0 13.0
	F	7/1/10	6.97	24.5	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
		10/3/08 2/17/09	6.49	21.6 20.9	2180 1941	980 1000
	F	5/6/09	6.51 6.55	20.9	1891	930
	F	8/5/09	6.63	21.5	2137	950
		10/28/09	6.81	19.7	2259	1010
BMO-2008-13B	909551	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
	1 L	2/9/12	6.68	20.3	2180 2190	1060 1080



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
			. ,	,	. ,	,
		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
DMO 0000 40M	000700	10/28/09	8.12	21.4	1347	403
BMO-2008-13M	909760	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 207
		8/13/12 9/9/10	8.75 7.82	24.2 24.6	1311 727.0	397
	_				570	150 98
	_	11/11/10	8.68	19.9		
	_	2/11/11	8.15	20.8	589	138
BMO-2010-1M	219957	5/12/11 8/31/11	7.74	23.0	710 562	129 154
BIVIO-2010-1IVI	219937			23.2		
	-	12/13/11 2/8/12	7.63	21.3 22.0	713	149 158
	_		7.69		605	
	_	4/24/12	7.08	23.4	701	150
		7/9/12	6.37	24.3	715	161
	_	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
	040050	5/13/11	6.54	21.1	2160	887
BMO-2010-2M	219958	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	2.19	1030
	_	7/29/10	7.48	23.1	420	16.0
	-	11/10/10 1/20/11	7.43	21.2 20.9	370 416.1	<u>14.9</u> 14.4
	-		7.38	20.9	410.1	14.4
	-	4/7/11 7/13/11	7.68	20.1	424.6	13.8
BMO-2010-3B	219970	10/13/11	7.63	22.3	404.5	15.9
	-	2/2/12	7.52	20.4	411.2	16.9
		2/2/12 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	21.0	419.1	15.7
		7/31/10	7.73	24.3	390	14.8
		11/10/10	7.66	24.3	340	14.0
	_	11/10/10 DUP	7.66	21.8	340	12.0
	_	1/20/11	7.72	22.6	380.4	11.5
		4/7/11	7.38	23.5	376.5	12.3
BMO-2010-3M	219969	8/25/11	7.17	23.5	340	10.4
		10/13/11	7.73	23.6	375.8	10.4
	-	2/2/12	7.68	22.0	367.1	10.6
		4/24/12	7.49	23.9	370	10.0
		7/5/12	7.66	23.7	381.8	10.1
	+ +	2/7/08	7.17	23.0	411	29.5
		4/22/08	7.13	27.0	423	20.0
		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
BURKE	212268	4/28/09	7.16	26.1	369	23.9
Service	2.2200	8/19/09	7.36	26.7	486	22.5
		12/16/09	7.28	25.7	488	22.5
		3/2/10	7.56	12.3	432	23.8
		4/22/10	7.49	16.4	452	23.8
	-	7/21/10	7.56	25.6	423.7	33.1



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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 4/14/09	7.57 7.42	21.5 22.4	312 384	5.3 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
CHAMBERS	629807	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 4/23/12	7.43	21.8 22.7	434.6 460	9.08 8.84
	_	7/17/12	7.31	22.4	400	8.41
		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
COB MW-1	903992	7/22/09	6.94	21.6	1570	680
	000002	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 7/14/11	7.02 6.78	22.3 21.4	2004 1924	919 927
	_	7/12/12	6.74	23.4	1924	805
		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
	000004	10/22/09	7.24	21.0	454	32.2
COB MW-2	903984	3/3/10	7.55	19.7	450	33.5
		4/26/10 7/13/10	7.28 6.91	21.3 21.2	479.6 479.5	34.8 30.4
	_	7/13/10 DUP	6.91	21.2	479.5	30.4
		1/20/11	7.47	20.7	440	29.6
	l F	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
		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 7.42	ND 20.8	ND 507	52.5
		10/23/08 2/12/09	7.43 7.35	20.8 21.1	507 432	76.6
COB MW-3	906823	4/23/09	7.35	22.6	432	43.7
		7/22/09	7.38	21.5	460	52.3
	l F	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



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
	F	5/20/08 7/30/08	7.30 7.17	21.9 22.0	1053 1098	98 97.1
		7/30/08	ND	22.0 ND	ND	100
		10/15/08	ND	ND	ND	100
		10/23/08	7.23	21.4	1075	104
COB WL	593116	2/12/09	6.98	20.6	814	94
COD WL	333110	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 7.36	21.1	1030 1038	97.1 97.7
		4/26/10 4/26/10 DUP	7.36	21.9 21.9	1038	97.9
		7/13/10	7.18	22.3	1030	88.7
		7/14/11	6.91	21.6	1019	87.3
		7/12/12	7.07	23.2	1060	92.0
		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 2/11/09	8.44	24.7	1510	518
COLLINS	565260	4/21/09	6.68 6.92	21.4 22.5	<u>1147</u> 1150	567 499
OOLLING	303200	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
		2/14/08	7.02	20.8	371	33
		5/14/08	8.08	22.1	419	34.2
	F	7/31/08 10/20/08	7.81 8.44	28.4 24.7	455 448	33.7 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
COOPER	623564	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 4/11/11	8.83 7.65	18.4 21.0	410 442.6	32.1 34.3
		7/11/11	7.45	24.2	442.0	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
	Γ	7/18/12	7.45	22.9	430	33.4
		3/20/08	6.93	21.3	2081	880
		5/5/08	6.78	22.4	2139	990
		7/15/08 7/15/08 DUP	6.86	22.3 22.3	2162	<u>1040</u> 960
		7/15/08 DUP 10/16/08	6.86 6.80	22.3	2162 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
COOPER C	637069	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 1/17/11	7.16	20.9	1980	829 756
		4/11/11	6.95 6.82	20.5 21.0	1880 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



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

			(SU)	(deg C)	(µS/cm)	Sulfate, dissolve (mg/L)
		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
DODSON	644927	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 1/31/12	6.79 7.17	20.9 20.3	1280 1454	49.6 50.4
		4/12/12	7.06	20.3	1454	45.4
		7/11/12	7.10	20.0	1790	54.0
		2/10/09	7.10	18.8	848	386
	-	4/20/09	7.37	22.7	901	367
		7/15/09	7.57	22.8	1102	332
	F	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
DURAZO	NR	7/20/10	7.28	23.0	1070	405
DURAZO		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
		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 4/8/09	7.33 7.32	20.0 20.6	482 555	12.5 15.9
		7/13/09	7.33	20.6	613	13.8
		10/8/09	7.29	20.8	593	13.4
		1/25/10	7.08	19.0	585	10.4
		4/21/10	7.42	20.5	616	14.4
EAST	599796	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
FOLING	010110	2/1/12	7.39	20.7	390.0	26.7
ECHAVE	219449	4/23/12 7/17/12	7.50 7.44	22.5 22.2	440.0 430	26.4 26.1



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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
EPPELE 641	805641	10/20/10	7.66	21.0	572.1	17.2
	000011	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
		4/11/2012 DUP	7.74	20.6	563.8	19.6
	010000	7/6/12	7.60	21.7	560	18.8
FLEMING	218386	7/15/10	6.98	24.2	1390	573
		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 20.5	1586 1560	680 680
		10/15/08				
FRANCO 101	500101	1/22/09	7.19	20.1	1178	740
FRANCO IUI	500101	4/14/09 7/13/09	7.24 7.30	23.1 27.3	1416 1532	690 670
		10/12/09	7.16	24.2	1493	650
		1/26/10	6.91	18.5	1493	640
		4/23/10	7.43	15.8	1529	699
		7/13/10	7.48	28.6	901.6	188
FRANCO 383	221383	9/13/12	7.66	25.0	1005	318
TRANCO 303	221505	2/27/08	6.76	21.1	1827	152
		4/21/2008 ¹	6.74	22.0	1739	132
		5/14/2008 ¹	6.88	22.3	1532	131
		6/23/2008 ¹	6.74	22.0	1788	111
		7/29/2008 ¹	6.74	22.2	1989	152
		8/28/2008 ¹	M	21.6	1889	137
		9/23/2008 ¹	6.82	21.9	1821	137
		10/22/08	6.80	21.4	1940	145
		1/21/09	6.74	21.2	1481	82
		4/9/09	6.78	21.5	1695	138
		7/13/09	7.04	23.4	1452	81
FULTZ	212447	10/8/09	7.00	21.6	1262	72
		10/8/09 DUP	7.00	21.6	1262	71.8
	F F	1/25/10	7.11	21.8	1282	66.7
	F F	4/20/10	7.32	21.2	1202	68.3
	F F	7/14/10	7.75	22.2	1132	57.0
	T F	10/20/10	7.27	20.5	1091	54.7
	T F	1/18/11	7.23	20.4	1136	56.9
	F F	4/5/11	7.08	22.1	1082	49.5
	F	4/5/11 DUP	7.08	22.1	1082	51.7
	T F	8/25/11	6.45	23.3	940	50.6
	<u> </u> Г	10/12/11	7.22	21.7	870	48.5
GALLANT	502527	2/11/08	7.46	20.2	604	17.9
GALLANT	502527	7/23/08	7.26	21.2	925	20.9

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		2/4/08	7.61	22.7	479	37.8
		5/5/08	7.26	24.9	479	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
GARNER 635	587635	7/20/10	7.57	25.3	458.2	38.8
	F	10/19/10	8.23	25.4	510	37.9
	F	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
		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
GGOOSE 547	628547	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
		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
01 00	500700	5/5/09	6.91	28.1	682	43.9
GL-03	539782	8/1/09	7.12	27.4	768	43.1
		11/10/09 3/2/10	6.96	27.0 24.9	692 693	49 43.4
		3/2/10 3/2/2010 DUP	7.36 7.36	24.9	693	43.4
		4/9/10	6.17	25.6	556 546	48.1 44.4
		7/7/10 2/1/12	6.48 6.57	26.3 24.1	546 559	44.4
	+ +	2/1/12 2/27/08	6.93	24.1	1359	42.0
		5/7/08	6.88	22.1	1532	670
		7/14/08	6.88	22.3	1719	690
		10/16/08	6.98	23.1	1719	690
		1/28/09	6.82	22.4	1624	580
		4/15/09	7.07	21.3	1423	700
		7/14/09	6.78	22.6	1551	670
HOBAN	805290	10/15/09	6.75	22.0	1487	670
	000200	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	20.2	1900	993
		4/19/12	6.81	21.5	1805	868
		7/11/12	6.86	21.3	1906	1110

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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 1/28/09	7.00 6.82	20.6 21.0	1598 1203	683 640
		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
HOWARD NR	NR	1/27/10 DUP	7.35	20.0	1714	520
		4/21/10 7/19/10	7.16 6.94	20.8 24.6	1490 1350	710 548
		10/18/10	6.47	24.0	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 4/13/12	7.29 6.99	20.6 21.2	1367	630 632
		9/13/12	7.12	21.2	<u>1508</u> 1576	699
HOWARD 312	221312	8/14/12	8.35	26.3	629.3	69.2
		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 7/14/09	7.29 7.35	20.0 22.1	452	7.7
		10/13/09	7.24	20.7	533 516 483	8.7
		1/26/10	7.15	18.8		7.3
KEEFER	209744	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 7/18/11	7.48 7.19	19.1 23.2	546.2 492.3	8.04 7.79
		10/11/11	7.19	20.7	492.3	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
		8/26/11	7.12	25.1	1390	669
		9/26/11	6.63	22.1	1502	638
MARCELL	NR	11/22/11 2/1/12	7.29 7.42	21.0 20.8	1536 1557	687 705
		4/13/12	7.15	20.8	1560	668
		7/13/12	6.86	22.3	1730	650
	i i	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 7/15/09	7.04 7.01	21.3 22.2	1472 1607	657 662
		10/12/09	6.77	21.7	1594	666
		1/26/10	6.71	21.7	1641	685
MCCONNELL 265	539265	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 10/11/11	6.60 7.18	23.7 21.8	1702 1590	790 845
		2/7/12	7.18	21.8	1842	845
		4/11/12	6.82	20.0	1781	833
		7/6/12	6.88	22.4	1827	851
MCCONNELL 459	221459	7/27/12	8.25	26.5	510.0	41

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		2/5/00		,	· · · /	
		3/5/08 5/15/08	7.27 7.12	21.6 22.8		<u>317</u> 329
		7/31/08	7.12	22.0		317
		10/20/08	7.16	22.5		305
		10/20/08 DUP	7.24	22.2		326
		2/11/09	7.12	22.2		320
		4/20/09	7.12	23.2		313
		7/15/09	7.41	22.9		293
		7/15/09 DUP	7.41	22.9		309
		10/14/09	7.1	22.5		315
METZLER	35-71891	2/1/10	7.22	21.7		286
		5/18/10	7.56	21.0		330
		7/16/10	7.20	24.1		330
		10/19/10	7.15	22.6		319
		1/19/11	7.55	21.1		298
		4/4/11	7.03	23.3		323
		7/12/11	7.07	22.3		312
		10/12/11	7.27	22.1		301
		2/7/12	7.36	21.5		326
		4/12/12	7.34	21.0	1021 1053 1007 1006 930 910 1018 993.0 910 1019 1009 362 432 432 452 328 374 439 429 423 433 431.3 431.3 431.3 430 390 426.3	320
		2/20/08	7.69	22.2		7.1
		5/8/08	7.09	22.4		7.5
		7/16/08	7.34	23.0		9.8
		10/29/08	7.32	22.4		19.2
		1/29/09	7.11	21.7		6.6
		4/16/09	7.40	22.1		6.4
		7/15/09	7.44	23.3		5.8
		10/13/09	7.36	22.6		7.1
		1/26/10	7.54	19.6	423	6.3
		4/22/10	7.47	20.6	433	7.40
NOODE	5000.17	7/15/10	7.44	24.1	431.3	7.54
MOORE	538847	7/15/10 DUP	7.44	24.1	431.3	7.11
		10/19/10	6.79	22.1		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		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
		7/24/08	7.35	26.5	563	50.2
		10/16/08	7.47	21.4	542	48.9
	F F	1/26/09	7.39	17.2	422	52.3
	F F	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
NESS	509127	2/2/10	7.67	19.7	(μS/cm) 1055 1051 1078 1080 1080 818 845 1031 1031 1053 1007 1006 930 1017 1006 930 1018 993.0 910 1019 1009 362 432 482 452 328 374 439 429 423 433 431.3 431.3 431.3 430 390 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 423.4 419.0 430 426.3 535 518.9 524.7 536.6 520.0 538.2	48.7
INE 33	509127	4/21/10	7.70	23.5		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
	F F	2/3/12	7.58	21.1	538.2	49.0
	F F	7/10/12	7.20	26.8	380	40.1
		7/10/12 DUP	7.20	26.8	380	39.2

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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		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		260
		10/5/09	6.48	24.1		281
		1/20/10	6.79	20.3		289
NOTEMAN	010100	4/19/10	6.81	22.4		307
NOTEMAN	212483	7/19/10	6.77	24.6		309
		10/18/10	6.08	24.6		280
		1/19/11	6.84	22.3		266
		4/4/11 4/4/11 DUP	6.72 6.72	22.9 22.9		276 279
		7/11/11		23.9		279
		10/11/11	6.78 6.96	23.9		272
		2/3/12	6.68	21.3		301
		4/23/12	6.68	21.3		291
		7/9/12	6.57	24.7		265
		7/9/12 DUP	6.57	24.7		265
NOTEMAN HOUSE	212483	2/3/12	7.06	13.5		324
		2/5/08	ND	ND	ND	43
NSD-02	527587	7/7/08	8.02	21.0		44
	507500	2/5/08	ND	ND	ND	70.7
NSD-03	527586	7/7/08	7.64	21.0	570	58.9
		10/27/08	7.47	22.2	438	5.1
	Г	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		8.5
		4/21/10	7.57	22.1	-	7.26
NWC-02	562944	7/20/10	7.36	23.7		6.87
		10/19/10	7.42	22.5		7.39
		1/18/11	7.47	23.2		6.43
		4/6/11	7.27	22.9		6.4
		7/15/11	7.03	22.5		7.24
		10/13/11	7.45	21.9		7.31
		1/30/12	7.39	21.2 22.4		7.78
		4/25/12 7/18/12	7.33	22.4		<u>8.42</u> 6.99
		3/4/08	7.33 ND	ND		560
		6/9/08	ND	ND		524
		10/27/08	7.07	21.9		489
		2/12/09	7.06	20.2		412
		4/23/09	6.98	21.9		466
		4/23/09 DUP	6.98	21.9		460
		7/21/09	7.21	22.9	1194	458
		10/21/09	6.94	21.8	-	444
		2/3/10	7.24	20.7	1214	444
	202224	4/21/10	7.22	21.6	1178	433
NWC-03	203321	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
		4/25/2012 DUP	7.17	21.6	920	347
		7/18/12	7.05	22.1	(μS/cm) 1317 1445 1539 1643 1098 1375 1405 1442 1450 1446 1446 1446 1446 1446 1446 1446 1446 1446 1446 1446 1446 1446 1450 1370 1380 1360 1360 1360 1360 1360 1360 1360 1360 1360 1380 1370 1446 1446 1446 1425 1425 1420 10 1370 10 1370 10 10 10 10 10 10 10 10 10 1	354



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolv (mg/L)
		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 5/28/09	7.21 7.01	24.1 24.1	797 933	188 210
		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
NWC-04	551849	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	169 182
		3/17/11		24.1 23.4	888.1	
		4/5/11 5/11/11	7.32	23.4	878.7 868.1	196 175
		6/17/11	7.28	23.7	856.3	204
		7/15/11	7.06	23.5	875.1	204
		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
		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
		3/4/08	ND	ND	ND	7.9
		6/9/08	ND 7.25	ND 22.2	ND	7.2
		10/27/08	7.35 7.54	23.3	414	6.4
		2/12/09 4/23/09	7.54	21.8 24.5	306 354	8 7.3
	F	7/21/09	7.63	23.5	354 388	6.4
	F	10/21/09	7.26	23.5	413	8
	F	2/3/10	7.61	20.5	413	7.5
		2/3/10 DUP	7.61	20.5	404	7.4
		4/21/10	7.54	20.0	387	8.49
NWC-06	575700	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

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		2/25/00			. ,	
		2/25/08 5/13/08	7.35 7.22	22.4 22.2		<u>16.4</u> 17.2
		7/22/08	7.24	22.2		17.7
		7/22/08 DUP	7.24	22.9		17.5
		10/16/08	7.39	22.9		15.9
		1/20/09	7.33	22.4		16
		4/7/09	7.25	24.0		10
OSBORN	643436	8/18/09	7.16	24.6	-	17.4
		10/5/09	7.14	22.9		17.9
		1/21/10	7.47	19.5		15.6
		4/19/10	7.60	21.5		19.3
		7/12/10	7.69	24.2		18.4
		7/12/11	7.87	29.8		19.5
		2/3/12	8.15	15.3	618 618 595 469 542 643 599 591 601.9 594.0 575.9 390 435 508 548 527 441 475 521 538 510 520 518.8 511.9 517.0 499.2 517.6 510.4 521.4 519.8 390 1228 1386 1386 1328 1228 1469 1328 1228 1469 1328	19.2
		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
PALMER	578819	4/22/10	7.97	13.6	(μS/cm) 508 576 618 618 595 469 542 643 599 591 601.9 594.0 575.9 390 435 508 548 527 441 475 521 538 510 520 518.8 511.9 517.0 520 518.8 511.9 517.0 499.2 517.6 510.4 521 520 518.8 511.9 517.0 499.2 517.6 510.4 521 520 518.8 511.9 517.0 499.2 517.6 510.4 521 520 518.8 511.9 517.0 499.2 517.6 510.4 521.4 519.8 390 1228 1386	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		15.7
		4/5/11	8.04	19.0		15.8
		7/12/11	7.65	26.6	517.6	16.4
		10/11/11	7.85	22.0		17
		2/3/12	7.94	10.0		17.1
		4/11/12	7.52	18.7		17.3
	_	7/10/12	7.30	27.9		16.6
		4/21/08	6.80	20.5		410
		7/21/08	6.95	21.9		444
		10/13/08	6.86	21.2		480
		10/13/08 DUP	6.86	21.2		500
		1/22/09	6.92	19.7		397
		4/9/09	6.81	21.7	-	431
		4/9/09 DUP	6.81	21.7		426
		7/9/09	6.89	22.3		490
		10/6/09	6.83	21.1		472
PANAGAKOS	35-76413	1/21/10	7.06	18.8		318
PANAGAKUS	35-76413	4/20/10 7/20/10	7.25	21.0	(μS/cm) 508 576 618 618 595 469 542 643 599 591 601.9 594.0 575.9 390 435 508 548 527 441 475 521 538 510 520 518.8 511.9 517.0 499.2 517.6 510.4 521.4 517.0 499.2 517.6 510.4 521.4 517.0 499.2 517.6 510.4 521.4 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 517.6 510.4 522.5 510.4 523.5 510.4 523.5 510.4 523.5 510.4 525.5 510.4 525.5 510.4 525.5 510.4 525.5 510.4 525.5 510.4 528.5 530 530 1028 530 1028 530 1028 11208 112	608 706
			6.90	24.0		
		10/18/10 7/14/11	<u>6.38</u> 6.93	22.1 23.3		568 223
		8/25/11	7.17	23.3		223
		2/6/12		23.4		166
			6.98			362
		2/29/12 3/15/12	7.09 7.02	20.3		282
		4/12/12	6.90	21.4 20.9		346
		4/12/12 4/12/2012 DUP				
		4/12/2012 DUP 7/9/12	6.90 6.82	20.9 22.2	1265	352 292



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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		405
		4/20/09	7.10	22.6		372
		7/20/09	7.17	23.9		375
		10/20/09	6.80	22.5		388
		2/1/10	7.07	21.5		353
		4/22/10	6.91	20.3		417
PARRA	576415	7/14/10	7.13	20.3		403
	57 64 15	7/14/10 DUP	7.13	22.2		391
			7.51	21.4		411
		10/20/10 1/19/11	7.49	21.4		391
		4/4/11	6.90	20.8		382
		7/12/11	6.76	23.7		404
		10/12/11	7.44	22.3		406
		2/7/12	7.64	21.4		428
		4/13/12	7.49	21.1		402
		4/13/12 DUP	7.49	21.1		390
		7/18/12	7.03	22.6	965 971 1174 1188 1197 1219 1201 1201 1201 1201 1201 1201 1201 1201 1201 1201 1201 1201 1201 1202 1204 1204 1204 1204 1204 1204 1205 1100 1209 1175 847 1053 1165 1100 1224 1158 1277 1222 1230 1230 1230 1230 1218 1280 395.8 497 585 599	418
		7/18/12 DUP	7.03	22.6		419
		2/6/08	7.53	19.9		394
		5/7/08	7.08	21.4		391
		7/17/08	6.99	21.9		420
		10/27/08	7.03	20.8		460
		1/29/09	7.13	19.9	-	385
		4/14/09	7.58	20.7		411
		7/13/09	7.35	21.5	1165	472
		10/7/09	7.43	21.1		403
		3/8/10	7.72	18.6		406
		4/26/10	7.22	21.9	1224	438
PIONKE 395	613395	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		481
		2/1/2012 DUP	7.25	17.5		495
		4/12/12	7.17	22.1		508
		7/11/12	6.59	22.9		439
PIONKE 517	221517	9/18/12	7.91	23.4		14
		2/20/08	7.95	20.9		134
		5/19/08	7.40	22.2		122
		7/31/08	7.47	22.3		117
		10/21/08	7.51	21.4	598	120
		2/13/09	7.62	20.8	473	141
		4/21/09	7.73	20.0	470	124
		7/20/09	7.76	22.0	579	124
POOL	509518	10/20/09	7.22	21.2	575	122
1 UOL	000010	2/24/10	7.56	21.2	577	122
		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
	021000	7/22/08	7.10	21.7	795	20.2



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolver (mg/L)
	_	2/4/08	7.47	21.7	408	7.6
		5/6/08 7/17/08	7.19 7.32	22.7 24.5	405 439	8.3 8.8
		10/27/08	7.41	24.5	439	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
0.000007		1/25/10	7.48	22.4	390	7.8
RAMIREZ	216425	4/21/10	7.45	22.6	397	9.04
		7/21/10 10/19/10	7.38 7.91	25.1 23.7	420 450	<u>8.98</u> 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
		2/15/08	7.30	19.1 21.3	1540 1418	159 125
	F	4/21/2008 ¹ 5/13/2008 ¹	6.92 7.05	21.3 20.9	1418	125
		6/23/2008 ¹	6.87	21.1	1593	130
		7/29/2008 ¹	6.98	21.8	1411	120
		8/28/2008 ¹	М	21.1	1519	129
		9/23/2008 ¹	6.90	22.2	1519	125
		10/22/08	6.96	20.8	1604	145
		1/20/09	6.92	20.6	1355	88
		4/8/09	6.85	21.4	1759	178
		7/9/09	6.93 6.98	22.3	1434 1288	126 127
RAY	803772	10/7/09 1/26/10	6.82	21.3 20.6	1352	127
		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 1/31/12	7.06 7.28	21.6 20.5	1250 1360	130 131
		4/11/12	7.03	20.5	1359	131
		7/6/12	7.11	22.1	1430	129
		10/19/09	6.89	23.3	1360	590
ROGERS 596	573596	11/5/09	6.79	21.9	1418	540
NOOLNO 330	373330	2/25/10	6.99	19.6	1603	520
		4/22/10	7.21	18.2	1641	710
		2/7/08	7.45	18.6	601	138
		4/21/2008 ¹ 5/8/2008 ¹	7.32 7.14	21.4 21.2	552 622	128 141
	F	6/23/2008 ¹	7.14	21.2	660	141
		7/29/2008 ¹	6.78	23.1	339	134
		8/28/2008 ¹	7.18	21.6	635	128
	F					133
	F	9/23/2008 ¹	7.24	21.9	599	
		9/23/2008 ¹ 10/22/08	7.36	21.3	650	144
		9/23/2008 ¹ 10/22/08 2/10/09	7.36 7.42	21.3 17.9	650 475	144 141
		9/23/2008 ¹ 10/22/08 2/10/09 4/29/09	7.36 7.42 7.52	21.3 17.9 21.9	650 475 506	144 141 211
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09	7.36 7.42 7.52 7.39	21.3 17.9 21.9 24.2	650 475 506 674	144 141 211 150
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10	7.36 7.42 7.52 7.39 7.46	21.3 17.9 21.9 24.2 23.9	650 475 506 674 643.4	144 141 211 150 169
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10	7.36 7.42 7.52 7.39 7.46 7.32	21.3 17.9 21.9 24.2 23.9 21.1	650 475 506 674 643.4 643.8	144 141 211 150 169 154
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10 10/19/10 DUP	7.36 7.42 7.52 7.39 7.46 7.32 7.32	21.3 17.9 21.9 24.2 23.9 21.1 21.1	650 475 506 674 643.4 643.8 643.8	144 141 211 150 169 154 154
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10	7.36 7.42 7.52 7.39 7.46 7.32	21.3 17.9 21.9 24.2 23.9 21.1	650 475 506 674 643.4 643.8	144 141 211 150 169 154
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10 10/19/10 DUP 1/20/11	7.36 7.42 7.52 7.39 7.46 7.32 7.32 7.44	21.3 17.9 21.9 24.2 23.9 21.1 21.1 18.1	650 475 506 674 643.4 643.8 643.8 643.8 610	144 141 211 150 169 154 154 154 143
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10 10/19/10 DUP 1/20/11 4/8/11 7/14/11 10/12/11	7.36 7.42 7.52 7.39 7.46 7.32 7.32 7.32 7.44 7.30 7.12 7.41	21.3 17.9 21.9 24.2 23.9 21.1 21.1 18.1 20.2	650 475 506 674 643.4 643.8 643.8 610 658.2	144 141 211 150 169 154 154 154 143 160 166 175
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10 10/19/10 10/19/10 1/20/11 4/8/11 7/14/11 10/12/11 1/30/12	7.36 7.42 7.52 7.39 7.46 7.32 7.32 7.32 7.44 7.30 7.12 7.41 7.40	21.3 17.9 21.9 24.2 23.9 21.1 21.1 18.1 20.2 23.5 21.8 20.0	650 475 506 674 643.4 643.8 643.8 643.8 610 658.2 653.5 665.3 580	144 141 211 150 169 154 154 160 166 175 171
ROGERS 803	641803	9/23/2008 ¹ 10/22/08 2/10/09 4/29/09 8/3/09 7/16/10 10/19/10 10/19/10 DUP 1/20/11 4/8/11 7/14/11 10/12/11	7.36 7.42 7.52 7.39 7.46 7.32 7.32 7.32 7.44 7.30 7.12 7.41	21.3 17.9 21.9 24.2 23.9 21.1 21.1 21.1 20.2 23.5 21.8	650 475 506 674 643.4 643.8 643.8 643.8 610 658.2 653.5 665.3	144 141 211 150 169 154 154 160 166 175

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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 2/10/09	7.38 7.51	21.4 20.7	434 322	<u>15.7</u> 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
ROGERS E	216018	4/21/10	7.44	21.1	421	6.04
	- I	7/21/10	7.37	23.8	430 460	<u>6.47</u> 5.92
		10/19/10 1/18/11	7.80 7.39	22.8 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
		2/5/08 5/15/08	7.73 7.23	18.2 25.9	445 965	263 265
		7/30/08	6.99	25.9	905	265
		10/20/08	7.04	22.0	995	238
	F	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
	- I	2/1/10	7.08	20.9	934	236 240
RUIZ	531770	4/26/10 7/20/10	7.01 7.08	22.5 22.5	920.1 880	240
		10/20/10	7.52	20.7	970	240
		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
	- I - F	2/7/12 2/7/12 DUP	7.28 7.28	20.7 20.7	915.6 915.6	230 228
		4/13/12	7.04	20.7	896.5	203
		7/18/12	6.87	21.6	900	214
		2/8/08	7.52	21.5	506	158
	F	4/21/2008 ¹	7.23	21.7	563	122
		5/19/2008 ¹	7.38	22.4	629	130
		6/23/2008 ¹	7.02	22.1	674	129
		7/29/20081	7.25	22.4	955	245
	- I	8/28/2008 ¹ 9/23/2008 ¹	M 7.27	22.3 22.2	669 607	131 124
		10/22/2008 ¹	7.31	22.2	653	124
	l F	11/19/20081	7.38	21.1	612	140
		12/17/2008 ¹	6.78	21.6	472	144
		1/29/2009 ¹	7.08	22.0	475	124
		2/23/2009 ¹	7.33	22.1	610	123
		4/17/09	7.46	22.2	520	120
SCHWARTZ	210865	7/10/09	7.52	22.8	651	116
		10/6/09	7.52	22.8	651 613	117
		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 7/18/11	7.20	21.5	656.9	128
		10/12/11	7.36 7.35	23.7 22.4	612.4 635.8	116 124
		2/6/12	7.35	22.4 21.3	629.7	124
		2/6/2012 DUP	7.32	21.3	629.7	110
		4/10/12	7.48	21.6	626.1	120
		7/16/12	7.31	21.9	710	117
SRC	211345	4/23/08	7.57	25.8	380	19
0110		8/5/08	7.40	27.2	452	15.4

Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolve (mg/L)
		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 4/7/09	7.05	20.4 21.5	391 447	<u>19.8</u> 19.9
	-	7/8/09	7.18	23.1	447	18.5
		10/5/09	7.18	21.4	496	19.7
SWAN	NR	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
	-	2/3/2012 DUP 7/10/12	7.40 7.00	20.5 22.7	484.5	19.5 19.4
		3/4/08	8.67	22.6	370 302	19.4
	-	5/23/08	7.75	22.0	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
TM-02A	522574	11/4/09	8.16	26.3	381	21.8
	_	3/10/10	8.13	25.2	351	21.4
	-	3/10/10 DUP	8.13	25.2	351	21.3
	-	4/6/10 7/6/10	6.96 7.38	24.6 24.6	363 343	25.6 22.1
	-	2/10/11	6.93	24.0	359	22.1
	-	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
		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
TM-03	522575	5/13/09 8/18/09	7.47 7.48	22.2 22.4	695 822	109 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
		2/27/08	7.44	19.6	457	13.9
	_	5/20/08	7.50	20.7	506	32.7
	_	8/4/08	7.41	20.7	529	31.3
	-	10/29/08	7.55	20.2	531	34.5
	F	2/26/09 5/13/09	7.18 7.35	20.4 20.9	574 465	32.7 30.6
TM-06 MILLER	522695	8/18/09	7.50	20.9	560	30.9
	022000	8/18/09 DUP	7.50	20.9	560	29.9
	l F	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
		3/6/08	7.54	20.8	726	22.5
		5/22/08	6.96	20.1	385	22.9 22.2
	I F	8/6/08 11/4/08	7.04 7.76	22.8 20.6	519 347	31.2
		2/20/09	7.77	19.9	376	22.5
	l F	5/13/09	7.30	22.9	559	130
		8/17/09	7.60	22.6	442	134
TM-07	522576	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 21.7	670 415	<u>171</u> 25.4



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		2/13/08	7.63	24.1	511	24.1
TM-08 SWAN	522817	5/14/08	7.44	24.4	480	12.6
		7/23/08	7.76	28.1	522	12.6
		12/8/11	6.95	19.6	381	16.8
	500000	3/15/12	7.85	20.2	382.3	15.1
TM-10 USBP	522696	4/24/12	7.88	21.0	280	13.4
		4/24/2012 DUP	7.88	21.0	280	13.3
	_	9/13/12	8.09	21.1	407.0	13.3
		2/27/08	7.66	21.9	344	14
		5/23/08 8/5/08	7.54 7.42	22.1	371 413	<u>14.4</u> 13.7
		10/28/08	7.63	23.3 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
TM-15 MILLER	522699	8/17/09	7.73	23.2	398	14.2
	F	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
	-	3/5/08	7.17	20.6	1351	497
		5/22/08 8/6/08	7.05 6.67	20.5 20.9	1304 1410	522 466
		11/5/08	7.14	19.8	1410	547
		2/20/09	6.90	21.1	1292	492
	500570	5/13/09	6.93	21.1	1179	484
TN 40		8/19/09	7.08	21.2	1354	468
TM-16	522578	11/10/09	7.02	21.0	1310	505
	T F	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
		3/6/08	8.02	22.2	240	56.1
		5/22/08 8/6/08	7.36	24.0 22.6	501 494	64.5 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
TM-19A	522581	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	498 505	62.2 63.7
	+ +	7/11/12 3/5/08	7.12	23.5 20.8	1342	482
		5/22/08	7.05	20.8	1270	482
		8/6/08	6.69	21.4	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
TM-42	562554	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 2/9/12	<u>6.83</u> 6.76	22.0 20.5	1205 1172	441 444
		7/11/12	6.72	20.5	1172	444 449



Table 3
Compilation of Analytical Results For Sulfate and Field Parameters

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
T 14 40	50.1500	3/3/08	8.57	21.0	341	2.1
TM-43	564729	8/4/08	8.14	25.7	436	<5
TM-43A	564726	3/3/08	6.17	19.9	2788	1420
110-457	304720	8/4/08	6.03	21.6	3149	1320
		3/3/08	6.79	20.6	514	0.7
TM-43B	565004	8/5/08	6.89	21.0	507	31.8
		8/5/08 DUP	6.89	21.0	507	32.5
		3/20/08	7.48	20.0	488	31.3
		5/7/08	7.13	20.4	494	32.6
	- I	7/15/08 10/15/08	7.39 7.45	21.9 22.3	532 490	37.6 36.6
	- I	2/11/09	7.32	22.3	391	27.6
		4/17/09	7.36	19.3	418	28.1
		4/17/09 DUP	7.36	19.3	418	28.3
TVI 236	802236	7/21/09	7.59	22.9	484	31.3
	F	10/19/09	7.31	22.1	513	33.2
	F	2/2/10	7.39	20.4	497	26
	F	4/23/10	7.46	20.0	504.6	30.9
	F	7/15/10	7.37	21.5	499.4	39.3
	F	7/15/11	6.80	22.4	499.6	42.9
	F	7/16/12	7.30	21.1	500	36.3
	1	2/21/08	7.28	21.1	739	244
	F	5/7/08	7.09	21.2	833	250
	F	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
TVI 875	568875	4/23/10	7.34	20.2	930.4	294
11075	508875	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
WALKER	200393	2/13/08	7.05	20.2	650	20
		7/23/08	7.25	20.7	740	45.4
		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
WEED	544535	4/26/10 7/21/10	7.69 7.36	22.1	366	13.4 13.6
				22.1	354.9	
		7/21/10 DUP 10/19/10	7.36 7.63	22.1	354.9	13.5 11.7
		1/19/11	7.62	21.2	378.8 383.6	12.2
		4/11/11	7.44	21.1	386.6	12.2
		7/18/11	7.56	21.5	379.3	12.7
		10/12/11	7.02	22.0	379.3	13.3
		2/6/12	7.60	21.7	385.0	13.5
		4/25/12	7.60	21.4	360	12.7
		7/5/12	7.64	21.7	385.8	12.7



Table 3 **Compilation of Analytical Results For Sulfate and Field Parameters**

Well Name	ADWR 55 Registry No.	Sample Date	pH (SU)	Temp (deg C)	SC (µS/cm)	Sulfate, dissolved (mg/L)
		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
	641802	4/22/10	7.30	19.3	1329	572
WEISKOPF	641802	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
WMD-2011-03M	913037	2/2/12	6.66	22.0	1190	391
		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
ZANDER	205126	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
		4/10/2012 DUP	7.49	21.9	420.1	6.65
		7/17/12	7.34	22.2	430	6.38

ADWR = Arizona Department of Water Resources

deg C = degrees Celsius M = Multi-Meter Malfunctior

NR = No Record

ND = No Data

SC = Specific Conductance

SU = Standard Units

 μ S/cm = microsiemens per centimeter

¹ Verified drinking water supply well, sample collected for sulfate trend analysis and interim action evaluatio

mg/L = milligrams per liter DUP = Blind duplicate



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
ANDERSON 396	613396	601134.729	3468816.065	4588.51	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
ANDERSON 458	221458	601118.690	3468826.284	4585.37	9/7/12	173.76	4411.61
			3468549.357	4547.64	8/27/08	121.12	4426.52
					4/8/08 ¹	116	4431.64
AWC-02	616586	598907.911			10/23/08 ²	115	4432.64
	0.0000	0000011011			4/22/09 ²	118	4429.64
					10/9/09 ²	117	4430.64
					4/23/10 ²	119	4428.64
					8/27/08	119.40	4420.12
					4/8/2008 ¹	112	4427.52
AWC-03	616585	599090.322	3468681.898	4539.52	10/23/08 ²	106	4433.52
					4/22/09 ²	114	4425.52
					10/9/09 ²	116	4423.52
					4/23/10 ²	116	4423.52
					8/18/08	112.56	4427.92
					4/8/2008 ¹	108	4432.48
AWC-04	616584	598949.929	3468717.084	4540.48	10/23/08 ²	111.31	4429.17
					4/22/09 ²	110	4430.48
					10/9/09 ²	110	4430.48
				 	4/23/10 ²	109	4431.48
					8/27/08	299.65	4242.86
					4/8/08	284	4258.51
					10/23/08	284	4258.51
AWC-05	590620	599269.904	3468541.692	4542.51	4/22/09	286	4256.51
					6/3/09	125	4417.51
					10/9/09 ²	289	4253.51
					4/23/10 ²	278	4264.51



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BANKS 987	647987	606981.921	3469206.175	4648.18	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
					5/12/08	113.71	4578.65
	644919	9 606243.850	3469076.689		7/23/08	113.56	4578.80
BARTON 919				4692.36	10/16/08	113.20	4579.16
DARTON 919					3/11/09	112.92	4579.44
					4/10/09	112.89	4579.47
					7/7/09	112.86	4579.50
					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
BF-01	539783	604169.077	3472151.593	4835.23	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
					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
BIMA	577927	606001.245	3471852.804	4802.05	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-1G	909474	606467.681	3471723.644	4805.10	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
					7/18/08	138.05	4445.92
					11/4/08	137.95	4446.02
				4583.97	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
BMO-2008-3B	909147	602012.923	3467919.582		3/3/10	140.03	4443.94
					4/8/10	140.07	4443.90
				i F	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
					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
BMO-2008-4B	910096	601099.405	3468383.430	4573.17	2/24/10	131.82	4441.35
BIVIO-2008-4B	910096	601099.405	3408383.430	45/3.1/	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
				1	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
DMO 2008 ED	000653	600429 450	2468004 715	4595 10	7/7/10	146.59	4438.51
BMO-2008-5B	909653	600438.159	3468994.715	4585.10	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
				1	4/18/12	149.02	4436.08
					7/10/12	149.65	4435.45
					10/2/08	146.65	4438.37
				1	2/18/09	145.97	4439.05
				1	4/27/09	146.46	4438.56
					8/4/09	147.13	4437.89
				1	10/29/09	147.68	4437.34
				1	2/15/10	147.07	4437.95
		600445.071	3468994.282	4585.02	4/16/10	147.34	4437.68
BMO-2008-5M	909552				7/7/10	148.28	4436.74
DIVIO-2000-5IVI	909552				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
					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
BMO-2008-6B	909146	600366.523	3469820.644	4627.44	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-6M	909019	600367.943	3469813.885	4626.90	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
					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
BMO-2008-7M	908794	603099.165	3470029.283	4688.33	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
	1			1	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
BMO-2008-8B	910097	604171.347	3471141.719	4753.25	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	4453.25
					7/12/12	301.15	4452.10
	1			1	1112/12	501.15	77 JZ.10



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-8M	909711	604167.912	3471127.902	4752.45	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
					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
BMO-2008-9M	909255	604668.669	3471121.675	4762.61	3/4/10	287.45	4475.16
DIVIO-2000-3141	303233	004000.000	3471121.073	4702.01	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
					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
BMO-2008-10GL	909435	605264.072	3471702.043	4792.21	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
				<u> </u>	7/13/12	510.90	4281.31
					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
BMO-2008-10GU	909272	605267.551	3471731.866	4793.45	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2008-11G	909434	603800.995	3472626.482	4844.67	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
					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
BMO-2008-13B	909551	601657.612	3470076.358	4649.21	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
					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
BMO-2008-13M	909760	601650.495	3470040.455	4647.15	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
					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
BMO-2010-1M	219957	605581.263	3469935.750	4718.55	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
BMO-2010-2M	219958	605685.549	3470564.646	4746.16	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
					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
BMO-2010-3B	219970	599977.962	3468347.363	4550.59	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
					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
BMO-2010-3M	219969	599970.801	3468353.543	4550.53	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 4/22/08	122.05	4428.48 4249.75
						606.55	4249.75
					8/5/08 10/28/08	605.86 604.88	4250.44
BURKE	212268	602230.087	3473029.816	4856.30	2/19/09	603.91	4252.39
					4/28/09	603.70	4252.39
					8/19/09	602.66	4253.64
	+				2/22/08	232.47	4450.79
					5/20/08	232.47	4450.79
					7/30/08	233.12	4450.14
					10/23/08	233.62	4449.64
					2/12/09	233.02	4449.21
					4/21/09	234.99	4448.27
COB MW-1	903992	603153.259	3469889.889	4683.26	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
COB MW-2	903984	600973.257	3468114.836	4566.21	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
					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
COB MW-3	906823	599169.225	3468726.000	4538.63	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
					2/22/08	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
COB WL	593116	606357.506	3472502.012	4832.06	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
					2/12/08	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
COLLINS	565260	602551.286	3471341.335	4733.72	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 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
COOPER C	637069	601349.987	3468913.011	4599.14	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
					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
		605594.560	3469063.772	4686.34	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
DODSON	644927				4/19/10	89.53	4596.81
5050011	011021				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
					7/11/12	Locked Out	-
					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
DOUGLASS 791	592791	607632.993	3470222.677	4703.27	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
	500700	007007 544	2400000 445	4004 70	10/5/09	86.19	4595.54
DOUGLASS 792	592792	607607.541	3469829.115	4681.73	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
					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
EAST	599796	607076.365	3468712.215	4626.01	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
ECHAVE	219449	599701	3470168	4648	2/1/12	216.71	4431.29



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Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
EPPELE 641	805641	607165.354	3469229.942	4642.86	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
					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
FLEMING	218386	605565.701	3469342.523	4693.68	4/20/10	315.26	4378.42
FLEWING	210300	005505.701	3409342.523	4095.08	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
FRANCO 383	221383	602817.854	3468831.563	4636.88	9/13/12	195.19	4441.69
					10/22/08	40.59	4602.33
					1/21/09	40.66	4602.26
					4/9/09	42.88	4600.04
	010447	607452 200	2460002 002	4640.00	7/13/09	54.94	4587.98
FULTZ	212447	607153.306	3469063.892	4642.92	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
GARNER 557	558557	602659.240	3468962.415	4638.45	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
					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
GARNER 635	587635	602665.352	3468967.902	4640.74	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
					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
GGOOSE 547	628547	606256.657	3469820.260	4717.11	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
GL-03	539782	604386.940	3473747.943	4924.31	8/12/09	656.56	4267.75
GL-03	539782	604386.940	3473747.943	4924.31	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
	1				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
GOAR RANCH	610695	602454.751	3468892.471	4631.13	10/12/09	185.72	4445.41
		002101.701			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
					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
HOBAN ³	805290	601705.848	3468880.329	4607.60	3/2/10	165.32	4442.00
HODAN	000200	001100.040	0100000.020	1001.00	5/18/10	165.71	4442.28
					7/20/10	166.17	4441.43
					10/19/10	166.45	4441.43
					8/31/11	166.45	4441.15
					8/31/11	167.76	4439.84
					2/14/11		4439.47
						168.09	
					4/19/12	168.32	4439.28
					7/11/12	169.10	4438.50



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
HOWARD NR ⁴	NR	601281.159	3468770.377	4593.91	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
HOWARD 312	221312	601308.920	3468772.630	4594.9356	8/14/12	188.36	4406.58
					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
KEEFER	209744	599879.175	3468119.015	4572.03	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					2/20/08	156.15	4444.55
					5/6/08	156.40	4444.30
				1	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
MCCONNELL 265	539265	601463.094	3468840.139	4600.70	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
MCCONNELL 459	221459	601471.708	3468840.682	4601.55	7/27/12	170.50	4431.05
					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
METZLER	35-71891	602091.308	3471381.176	4728.53	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
					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
NESS	509127	607866.391	3471419.494	4761.23	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
					7/10/12	Obstruction	-



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Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
				1	5/13/08	339.77	4460.91
			3471576.400	4800.68	8/27/08	344.34	4456.34
NOTEMAN	212483	606053.800			11/22/08	322.26	4478.42
					2/25/09	327.54	4473.14
					7/9/12	Obstruction	-
					10/7/09	101.17	4430.21
					3/16/10	99.43	4431.95
					5/25/10	101.63	4429.75
NSD-02	527587	598820.051	3468821.474	4531.38	8/25/10	102.38	4429.00
	021001	000020.001	0100021.111	1001.00	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
					10/7/09	85.62	4432.66
					3/16/10	83.51	4434.77
					5/25/10	84.49	4433.79
NSD-03	527586	598070.538	3468694.259	94.259 4518.28	8/25/10	85.70	4432.58
					3/17/11 86.7	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
					10/27/08	160.51	4439.93
NWC-02	562944	600177.435	3467474.673	4600.44	4/29/09 ⁵	160.5	4439.94
					9/10/09 ⁵	155	4445.44
					4/2010 ⁵	131	4469.44
			357 3468350.838	4574.99	11/3/08	131.48	4443.51
NWC-03	203321	601153.857			4/29/095	130	4444.99
					9/10/09 ⁵	126	4448.99
					10/9/09 ⁵	125	4449.99
					2/2/09	130.03	4442.79
					4/23/09 7/21/09	130.62 131.26	4442.20 4441.56
					10/21/09	131.60	4441.36
					2/3/10	131.34	4441.48
					4/21/10	131.86	4440.96
NWC-03 CAP ⁶	627684	601151.704	3468343.653	4572.82	7/20/10	131.50	4441.32
	021004	001101.704	0100040.000	1012.02	1/18/11	132.91	4441.32
					7/15/11	134.42	4438.40
					10/13/11	134.73	4438.09
				1	1/31/12	134.50	4438.32
					4/25/12	135.09	4437.73
				1 H	7/18/12	135.73	4437.09
L	1 1		1	1 1	12/2/08	352.11	4338.66
					4/29/095	328	4362.77
NWC-04	551849	605829.808	3469071.959	4690.77	9/10/09 ⁵	324	4366.77
					4/2010 ⁵	216	4474.77
	1 1			1 1	4/29/095	156	4436.50
				1000	9/10/09 ⁵	155	4437.50
NWC-06	575700	599822.821	3467749.954	4592.50	10/9/09 ⁵	148	4444.50
					4/2010 ⁵	140	4452.50



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Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
OSBORN	643436	607031.823	3470270.548	4711.95	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
					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	1/21/10	166.92	4524.48
					4/20/10	167.11 171.78	4524.29
PANAGAKOS	35-76413	605304.234	3469323.140	4691.40	10/18/10 176.39 7/14/11 173.78	4519.62	
PANAGAKUS	35-76413		3469323.140	4691.40		4515.01	
							4517.62
				1	8/25/11 2/6/12	172.89 169.09	4518.51 4522.31
					2/29/12	169.09	4522.08
				1	3/15/12	169.64	4521.76
					4/12/12	168.85	4522.55
					7/9/12	170.38	4521.02
					5/15/08	279.78	4447.43
			3471263.549	4727.21	8/18/08	280.06	4447.15
					11/3/08	280.39	4446.82
PARRA	576415	602170.716			2/13/09	280.75	4446.46
					4/28/09	280.88	4446.33
					7/20/09	280.99	4446.22
					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
PIONKE 395	613395	601045.471	3468960.981	4592.13	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



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Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
PIONKE 517	221517	600909.967	3468866.654	4587.20792	9/18/12	152.00	4435.21
					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
DOOL	500540	500000 000	0.4700.40.000	1000.00	4/21/09	204.87	4434.22
POOL	509518	599683.603	3470013.823	4639.09	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
				1 1	10/20/10	206.74	4432.35
					10/27/08	159.45	4437.16
					1/29/09	158.74	4437.87
					4/16/09	158.74 158.66	4437.95
		599730.649			7/10/09	159.64	4436.97
					10/6/09	160.36	4436.25
					1/25/10160.104/21/10159.96	4436.51	
						4436.65	
RAMIREZ	216425		3467584.363	4596.61	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
					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
RAY	803772	607083.422	3469195.147	4647.91	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



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ROGERS 596	573596				11/11/09		
ROGERS 596	573596				11/11/03	135.46	4441.89
ROGERS 596	573596				2/25/10	135.89	4441.46
ROGERS 596	573596				4/22/10	135.62	4441.73
ROGERS 596	573596				7/16/10	136.63	4440.72
ROGERS 596	573596				10/19/10	136.61	4440.74
RUGERS 596	573596	004004 500	2460404 620	4577.05	1/20/11	134.21	4443.14
		601001.503	3468491.639	4577.35	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
					2/7/08	129.85	4449.17
		0 600977.690			7/29/08	131.86	4447.16
	0.44750				10/22/08	132.08	4446.94
ROGERS 750 ⁷	641750		3468417.386	4579.02	2/10/09	130.62	4448.40
					4/29/09	131.33	4447.69
					8/3/09	135.07	4443.95
			3467636.029 4		7/17/08	149.65	4441.01
					11/3/08	150.15	4440.51
					2/10/09	149.02	4441.64
				4590.66	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
ROGERS E	216018	600449.648			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 1	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
RUIZ	531770	602857.357	3471424.219	4735.18	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
						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 4564.49 4/21/10 124.65	4440.17	
SCHWARTZ ⁸	210865	600811.014	3468269.622	4564.49			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	0/12/11 127.51 2/6/12 127.34 4/10/12 127.78 7/16/12 128.84 5/13/08 44.94 8/5/08 46.61 0/16/08 46.60	4436.98
							4437.15
							4436.71
						4435.65	
		606981.766					
						44.94 4606.28 46.61 4604.61	
					1/21/09		
					4/8/09	47.19 4604.0 48.45 4602.7	
	808560			4/0/09 40.43 7/7/09 49.41 10/7/09 50.33 1/26/10 51.13	4601.81		
					4600.89		
STEPHENS			3469072.799 4651.22				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
					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
SUNBELT	201531	605998.250	3471735.149	4806.52	10/5/09	Dry	<4426
JUNDELI	201001	003330.200	547 17 55. 148	+000.02	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
SWAN	NR	607378.547	3470648.298	4716.59	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 40.39 346.62 346.16 353.91 349.45 348.64	4678.73
					7/10/12	40.39	4676.20
		604152.059			3/4/08	346.62	4461.81
					5/23/08	346.16 4462.27 353.91 4454.52 349.45 4458.98	4462.27
					8/15/08		4454.52
				10/30/08 349.45	4458.98		
					2/24/09	348.64	4459.79
	522574				5/6/09 349.38	349.38	4459.05
					8/12/09	349.13	4459.30
TM-02A			3472008.794	4808.43	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
					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
TM-03	522575	606366.130	3473711.046	4897.85	5/13/09	113.86	4783.99
111-00	022070	000000.100	0110111.040	1001.00	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)	
					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	
TM-06 MILLER	522695	606055.975	3468376.658	4707.88	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 7/9/12	159.88 161.40	4548.00 4546.48	
							4546.48	
TM-10 USBP	522696	601586.268	3471816.397	4741.18	3/15/12 4/24/12	279.30 279.03	4461.88	
	522090	001500.200	347 1010.337	4741.10	9/13/12	279.00	4462.88	
					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	
	522578				2/26/09	81.88	4635.83	
					5/13/09	82.01	4635.70	
TM-16		605588.075	3469842.199	4717.71		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	
					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	
TM-19A	522581	602458.710	3469197.426	4645.87	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	203.30 203.84	4442.57	
					2/2/12		4442.03	
				{	7/11/12	204.75	4441.12	
					3/5/08 5/22/08	211.04 210.98	4455.63 4455.69	
					8/6/08	210.98	4455.69	
					11/6/08	207.05	4455.12	
					2/18/09	207.05	4459.02	
					5/7/09	212.37	4454.30	
TM-42	562554	603698.271	3469104.903	4666.67	8/18/09	212.37	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



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
TVI 236	802236	600552.215	3467978.431	4561.98	7/21/09	123.96	4438.02
1 1 2 30	802230	000552.215	3407978.431	4501.96	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
					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
TVI 713	567713	600729.095	3468412.946	4567.22	4/23/10	127.53	4439.69
11110	001110	000720.000	0100112.010	1001.22	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
					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
WEISKOPF	641802	601154.951	3468658.855	4586.89	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
WMD-2011-03M	913037	605360.830	3470671.273	4746.28	2/2/12	226.66	4519.62



Table 4Compilation of Groundwater Elevation Data

Well Name	ADWR 55 Registry No.	UTM East (meters)	UTM North (meters)	Measuring Point Elevation (ft amsl)	Date	Depth To Water (feet)	Groundwater Elevation (ft amsl)
					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
ZANDER	205126	599678.880	3467998.486	4580.94	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	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

ADWR = Arizona Department of Water Resources

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

ft amsl = feet above mean sea level

NR = No Record

ND = No Data

¹ Measuring point elevation for third quarter 2008 changed to reflect well survey completed on September 18, 2008

² Depth to Water measurement provided by Arizona Water Company

³ Measuring point elevation changed to reflect survey results June 2012 and applied to all measurements collected

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

⁵ Depth to Water measurement provided by Naco Water Company

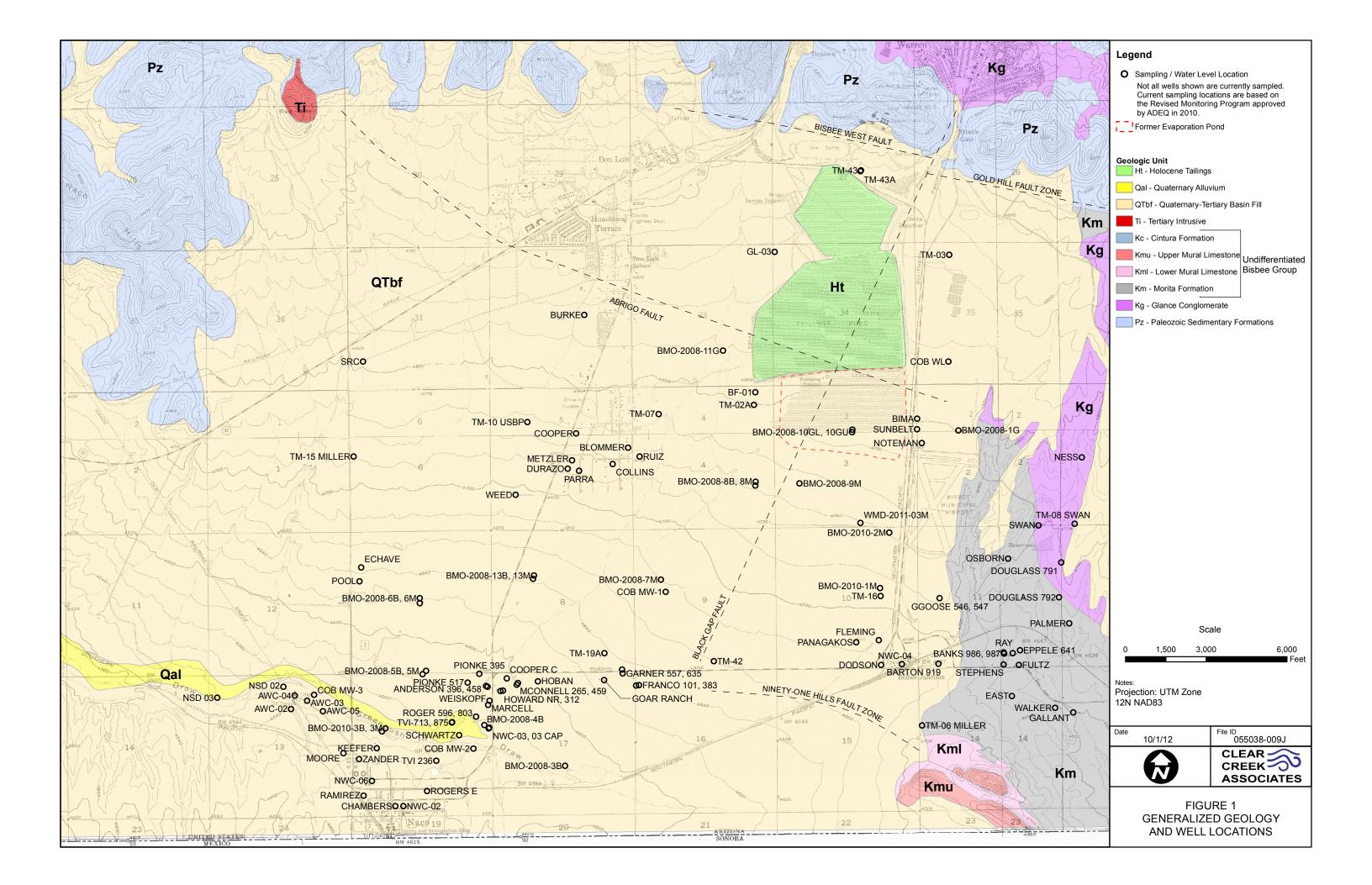
⁶ Measuring point elevation for second quarter 2009 changed to reflect well survey completed on April 27, 2009

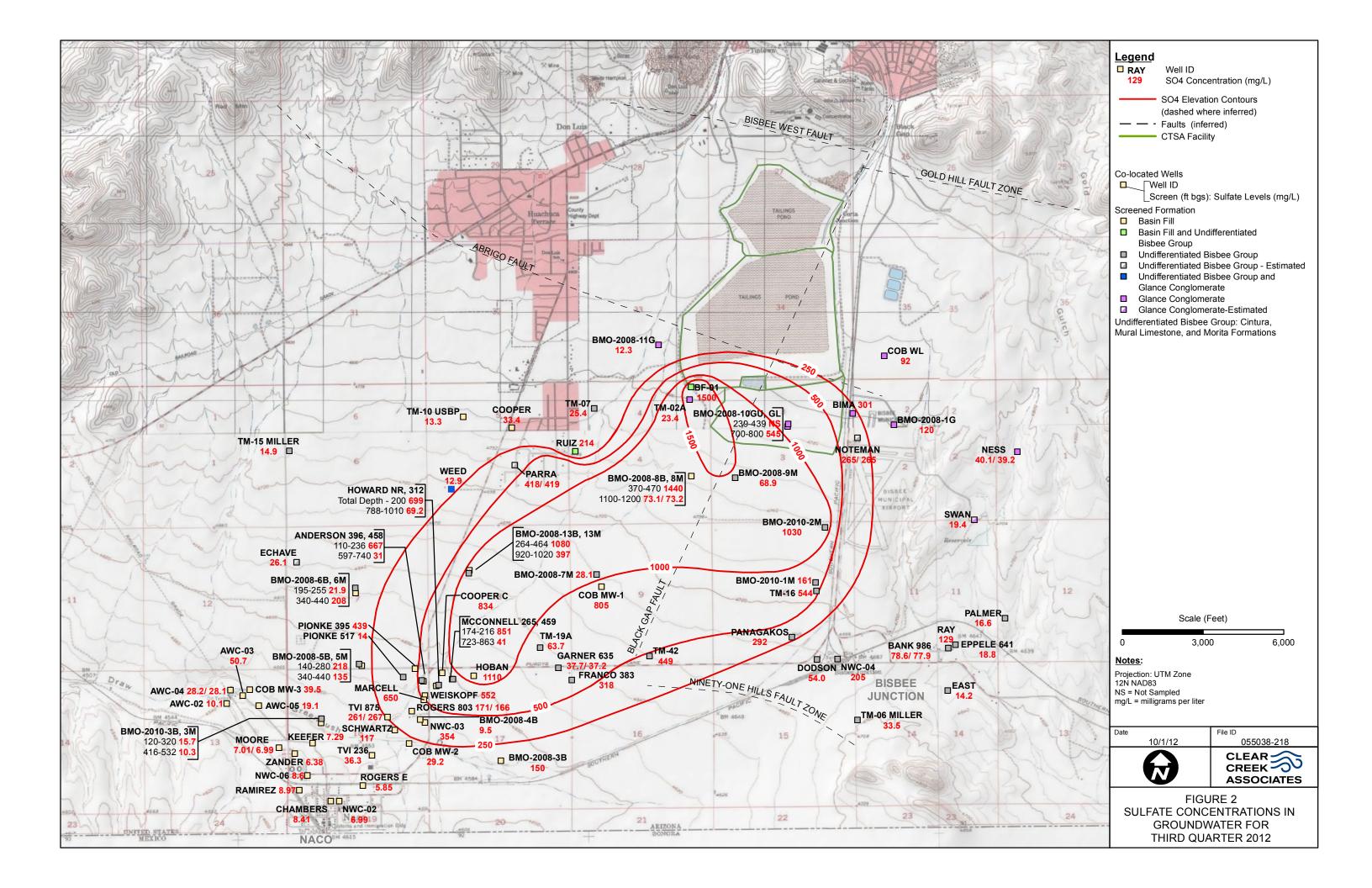
⁷ Well previously identified as ROGERS 803

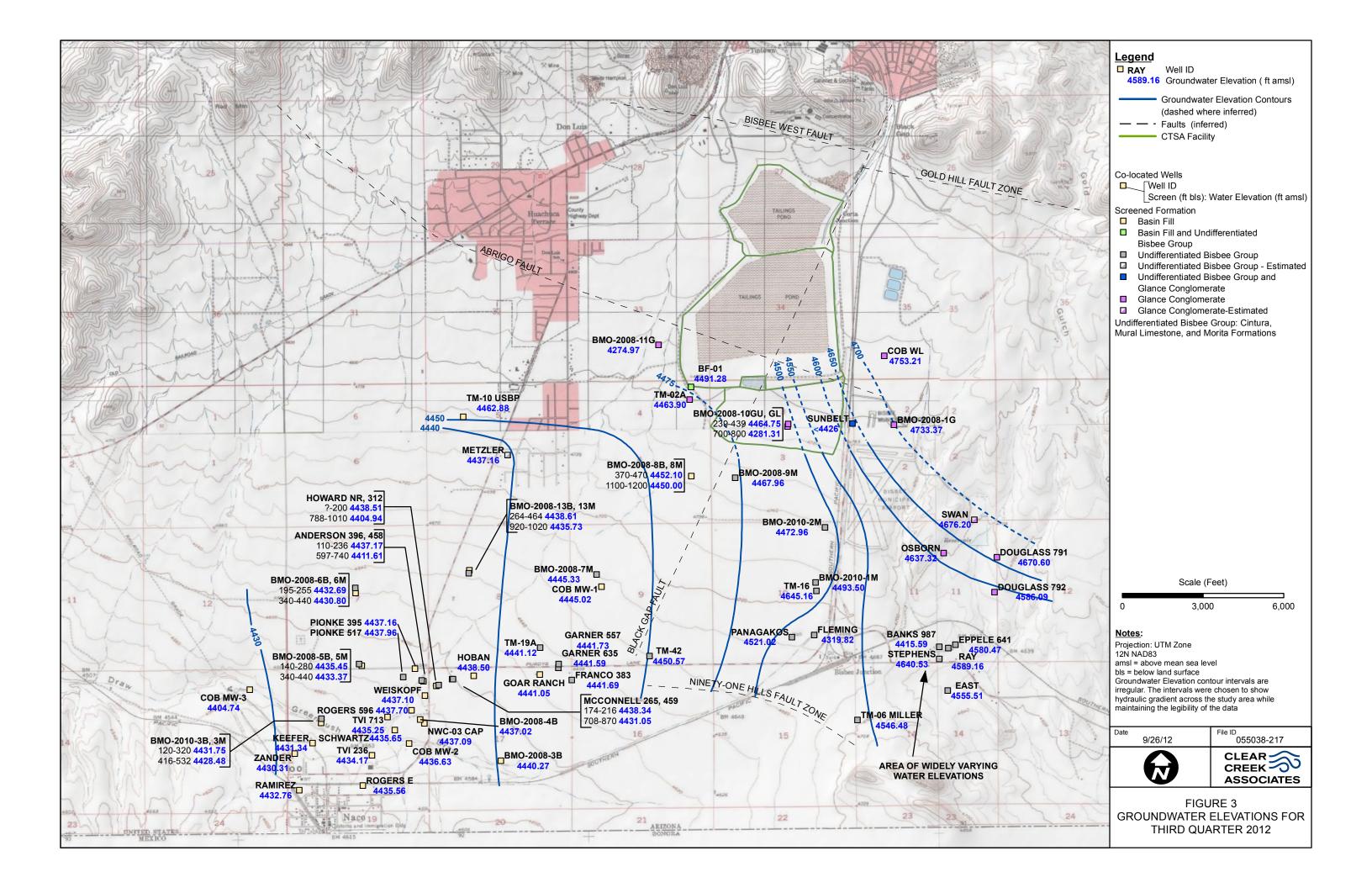
⁸ Measuring point elevation changed to reflect survey results September 10, 2010 and applied to all measurements collected

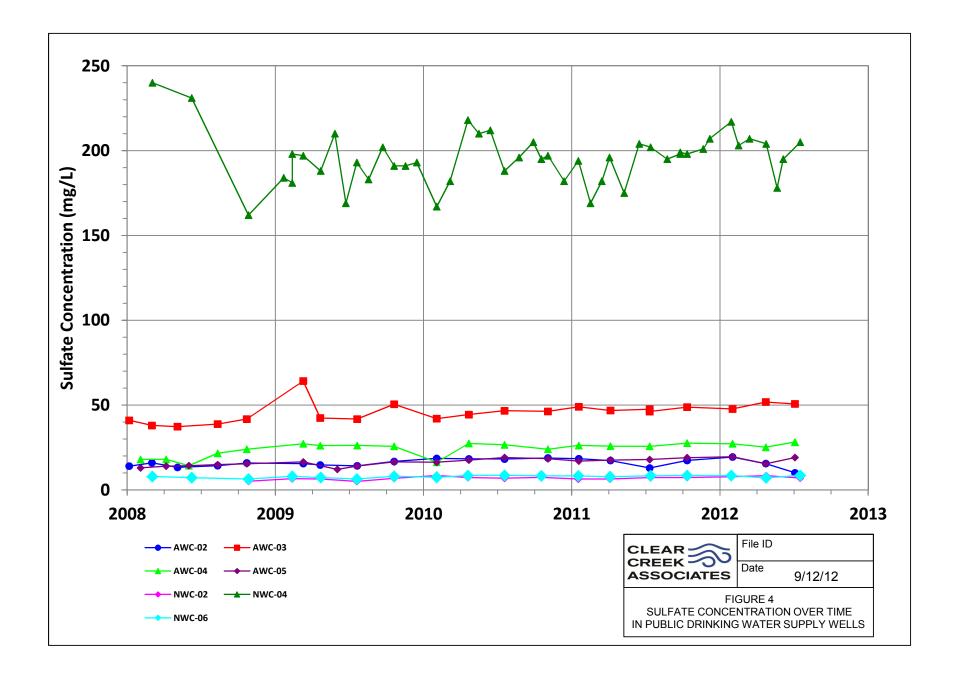


FIGURES

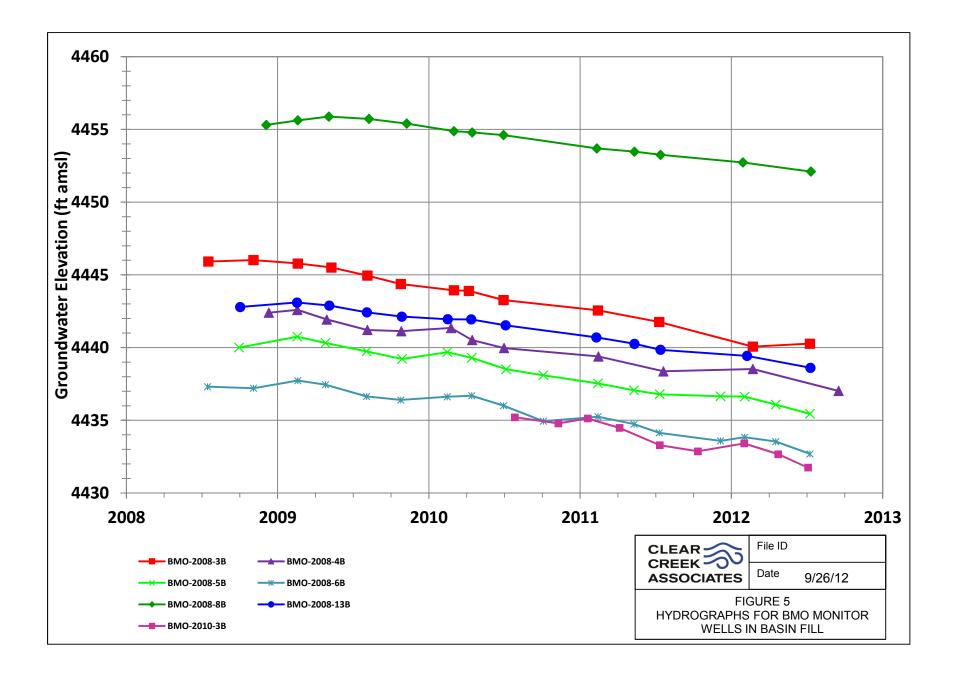




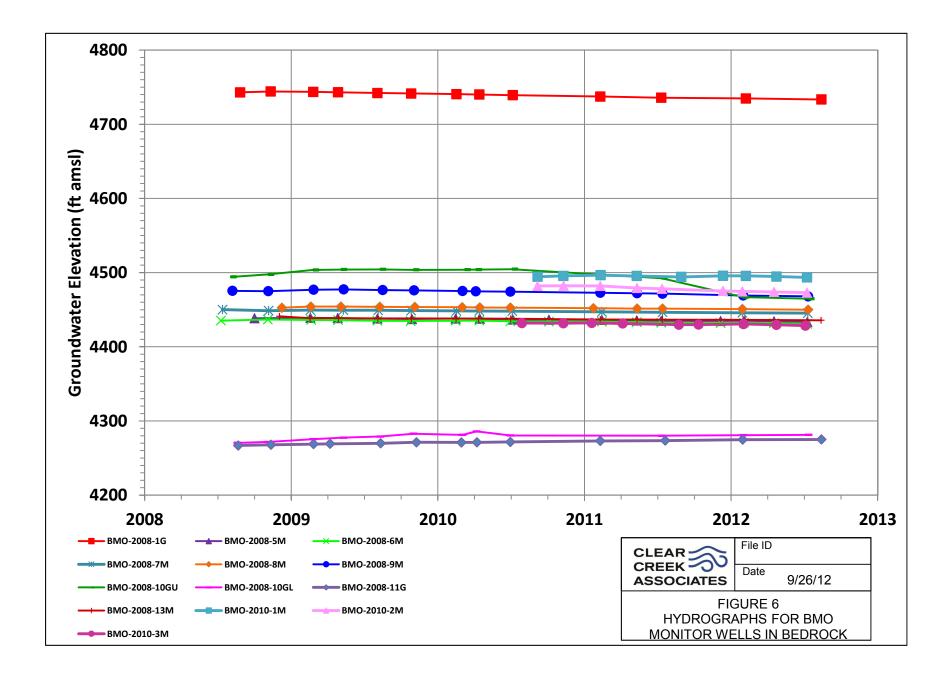




V:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q3 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q3 2012



V:\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Groundwater Monitoring Reports\2012 Q3 CQB Groundwater Monitoring Report\SO4 and GW elev Time Series for Select Q3 2012



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APPENDIX A

SURVEY DATA

APPENDIX A Survey Results for New Wells

Point ID	Survey Location	Northing (UTM meters)	Easting (UTM meters)	Elevation (meters)
ANDERSON 458	Top of Well Pad	3468826.284	601118.690	1397.447
ANDERSON 458	Top of Sounding Tube	3468826.023	601118.798	1397.980
FRANCO 383	Top of Well Pad	3468831.760	602817.741	1412.823
FRANCO 383	Top of Sounding Tube	3468831.563	602817.854	1413.683
HOWARD 312	Top of Well Pad	3468772.846	601308.670	1400.141
HOWARD 312	Top of Sounding Tube	3468772.630	601308.920	1400.895
MCCONNELL 459	Top of Well Pad	3468841.014	601471.606	1401.943
MCCONNELL 459	Top of Sounding Tube	3468840.682	601471.708	1402.556
PIONKE 517	Top of Well Pad	3468866.934	600909.936	1397.682
PIONKE 517	Top of Sounding Tube	3468866.654	600909.967	1398.539

All coordinates listed in UTM Zone 12n WGS84 Geoid 09 (Meters) Data Provide by CQB



APPENDIX B

DATA VERIFICATION REPORT

APPENDIX B

DATA VERIFICATION REPORT

THIRD QUARTER 2012 GROUNDWATER MONITORING REPORT

Prepared for:

FREEPORT-MCMORAN 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

October 19, 2012

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1. INTRODUCTION

This report summarizes the data verification review of groundwater samples collected and analyzed during the third quarter 2012 by Clear Creek Associates (Clear Creek) and Freeport-McMoRan Corporation Copper Queen Branch (CQB) pursuant to Mitigation Order on Consent Docket No. P-121-07 (ADEQ, 2007). Clear Creek and CQB collected groundwater samples pursuant to the groundwater monitoring program approved by ADEQ in April 2010 (CQB, 2010 and ADEQ, 2010). Analytical results for groundwater samples collected for this project during the third quarter 2012 were provided to Clear Creek by SVL Analytical, Inc. (SVL) of Kellogg, Idaho for preparation of the third quarter 2012 Groundwater Monitoring Report except for samples collected at four new wells. An analytical result for HOWARD 312 was provided to Clear Creek by Legend Technical Services, Inc. (Legend) of Tucson, Arizona. Analytical results for ANDERSON 458, MCCONNELL 459, and PIONKE 517 were provided to Clear Creek by Turner Laboratories Inc. (Turner) of Tucson, Arizona.

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

The laboratory reports for the third quarter 2012 samples including COC forms, laboratory correspondence, QC summaries, data qualifiers, internal QA/QC tests performed by two laboratories are presented with the laboratory reports included in Appendix C. Based on the results of laboratory control samples, matrix spike/recovery and blank spikes, SVL, Legend, and Turner did not advise any modifications be made regarding the usability and data validation status of the laboratory test results. The analytical results for all 106 samples collected by Clear Creek and CQB are contained in 14 reports having the Laboratory Project numbers identified in the following table.

SVL ID	WELLS REPORTED
Number of g Number of d Number of fig	rells sampled: 80 roundwater samples collected (including duplicates): 92 uplicate samples collected:10 eld and equipment blanks collected: 14 r of samples collected: 106
W2G0109	AWC-03, AWC-04, AWC-02, AWC-05, BMO-2010-3M, BMO-2010-3B, WEED, DUP07052012, FB07052012, EQB07052012, MCCONNELL 265, RAMIREZ, EPPELE 641, RAY, FB07062012, EQB07062012, BANKS 986, DUP07062012
W2G0296	DODSON
W2G0301	BMO-2010-1M, TM-16, BMO-2010-2M, TM-6, BMO-2008-6M, BMO-2008-6B, BMO-2008-5M, BMO-2008-5B, BMO-2008-3B, TM-15, TM-42, BMO-2008-7M, HOBAN, TM-19A, BMO-2008-13B, BMO-2008-8M, BMO-2008-8B, BMO-2008-9M, DUP071212
W2G0362	BMO-2008-10GL
W2G0364	EAST, PANAGAKOS, NOTEMAN, DUP07092012, NESS, DUP07102012, SWAN, BIMA, GARNER 635, EQB07132012, FB07132012, ROGERS 803, DUP07132012, COOPER C, EQB07112012, DUP07112012, FB07102012, EQB07102012, PALMER
W2G0366	COB MW-1, COB MW-2, PIONKE 395, FB07112012, MARCELL, WEISKOPF, ANDERSON 396, COB WL, COB MW-3
W2G0454	MOORE, KEEFER, EQB07172012, FB07172012, DUP07172012, ZANDER, ROGERS E, CHAMBERS, ECHAVE, NWC-04, NWC-06, NWC-03, SCHWARTZ, TVI 236, TVI 875, DUP07162012, COOPER, RUIZ, FB07182012, EQB07182012, NWC-02, DUP07182012, PARRA
W2H0468	BF-01, BMO-2008-1G, BMO-2008-4B, BMO-2008-11G, BMO-2008-13M, TM-2A, TM-7
W2I0207	NWC-04
W2I0392	FRANCO 383, HOWARD NR, NWC-04, TM-10 USBP
Turner ID	WELLS REPORTED
1210341	ANDERSON 458
12G0801	MCCONNELL 459
1210547	PIONKE 517
Legend ID	WELLS REPORTED
2081219	HOWARD 312
2001213	

2. FIELD OPERATIONS

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

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

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

2.1 Water Level Monitoring

Static water level measurements were attempted at each well that was sampled (where there are no known obstructions or lack of wellhead access to prevent static water level measurement) and at all wells where water level monitoring was conducted by Clear Creek and CQB. Water levels were measured while the well pump was off. However, it was not always possible to ascertain from the well owners how long the pump had been off. Before measuring the water level at each well, the battery on the water level indicator was checked and the sensitivity level was adjusted, if necessary. Each measurement was collected and verified by measuring the depth to water multiple times in order to obtain a consistent reading and accurate measurement. The water level measurement taken while water sampling at BMO-2008-4B on August 15, 2012 was inconsistent with historic results and determined to be affected by pumping prior to the measurement. A follow up measurement was made on September 17, 2012 after verifying the well had not been pumping. The August 15, 2012 measurement is not included in Table 4 because it is considered non-representative of the static water level condition.

CLEAR Third Quarter 2012 CREEK CREEK ASSOCIATES

2.2 Groundwater Sampling

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

2.2.1 Pre-Sampling Field Activities

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

2.2.2 Well Purging, Field Measurements, and Sample Collection

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

Field measurements were collected at varying intervals during well purging at each well where a water quality sample was collected. If possible, field parameters were monitored until the measurements stabilized within 0.3 standard units for pH, 2 degrees Celsius for temperature and 200 microSiemens/centimeter for specific conductance as described in Section 4.2.1.2 of the QAPP.

 2 Field SC meter was calibrated using a standard stock solution of 7000 $\mu S/cm$ or 12880 $\mu S/cm$

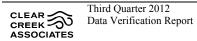
¹ Field pH meter was calibrated using a three point calibration and pH buffers 4, 7, and 10

During this monitoring period 92 groundwater samples (duplicate and multiple samples included) were collected for analysis from 80 wells. Groundwater samples were collected by filtering the sample into a 250 milliliter bottle using clean filtration apparatus and one disposable 0.45-micron filter. All bottles were provided by the laboratories and maintained in a clean and secure work area until used in the field.

2.2.3 Post-Sampling Field Activities

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

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

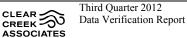


5

SAMPLE HANDLING 3.

All samples collected by Clear Creek and CQB were shipped to SVL, Legend or 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 the laboratory. As noted on the analytical data reports from each laboratory, all of the sample bottles were received intact, properly preserved, and in good condition except for the 18 samples included in SVL Work Order W2G0109 which arrived outside of published EPA guidelines for preservation temperatures $(0-6^{\circ}C)$. All samples were shipped within one to four days of sample collection and the time between sample collection and receipt of samples by the laboratory was one to eight days. Samples in work order W2G109 were shipped on a Friday and not received by the laboratory until the following Monday. Insufficient ice was packed with the samples of work order W2G109 for the samples to stay within temperature guidelines over the weekend. The samples were collected, shipped, and received by the laboratory within the established holding time for dissolved sulfate analysis in accordance with United States Environmental Protection Agency (EPA) Method 300.0.

The results for the samples that were received outside of published temperature guidelines were compared to historical results. The samples were in line with historical results and it is believed the samples results are usable for all 18 samples. Sample shipping protocol was reviewed with all field staff and samples will no longer be shipped on Friday but will be held until Monday to ensure that all samples are received within the published EPA temperature guidelines.



6

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.

Legend is licensed with the Arizona Department of Health Services (license number AZ0004) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

Turner is licensed with the Arizona Department of Health Services (license number AZ0066) and is accredited in accordance with the National Environmental Laboratory Accreditation Conference.

4.2 Analytical Method

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

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

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

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

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

The Practical Quantitation Limit (PQL) of the analytical method used (EPA 300.0) by both Legend and Turner is 5.0 mg/L.

4.4 Timeliness

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

4.5 Quality Control Measurements

The following QC samples were prepared and analyzed:

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

4.5.1 Calibration Blanks and Calibration Verification Standards

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

4.5.2 Analytical Spike

Analytical spike samples were analyzed for the EPA Method 300.0. The spike samples were prepared by adding a sulfate spike to randomly chosen samples. Instances in which analytical spike recoveries were unusable were qualified with an "M3" flag indicating that the analyte

concentration was disproportionate to the spike level or an "M1" flag indicating that the spike level was too high. In each case where an M1 or M3 qualifier was used the laboratory control sample recovery was acceptable and no corrective action was required. The laboratory control samples were prepared by adding a sulfate spike to de-ionized water. Equivalent analytical spikes were conducted on samples sent to Legend and Turner. No qualifiers were reported from Legend or Turner.

4.5.3 Laboratory Duplicate Samples

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

4.5.4 Sample Re-Analysis

No samples required re-analysis for the third quarter 2012.

4.5.5 Field Blank Samples

During the third quarter 2012, 14 field blank samples were collected, including seven field blanks (FB07052012, FB07062012, FB07102012, FB07112012, FB07132012, FB07172012 and FB07182012) and seven equipment blanks (EQB07052012, EQB07062012, EQB07102012, EQB07112012, EQB07132012, EQB07172012 and EQB07182012). Field blank samples were collected in accordance with procedures described in Section 4.2.1.5 of the QAPP. Field blank samples were collected and submitted along with other samples to evaluate the potential for contaminant introduction under field conditions. As required by Section 4.2.1.5 of the QAPP, a minimum of one field blank and one equipment blank sample was collected for every twenty samples.

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 third quarter 2012 groundwater sampling and analysis conducted by Clear Creek and CQB.

5.1 Precision

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

- Laboratory duplicate samples
- Field duplicate samples

As discussed in Section 4.5.3 there were no exceedances of RPD QA criteria for any laboratory duplicates. During this monitoring period 10 field filtered duplicate samples (DUP07052012, DUP07062012, DUP07092012, DUP07102012, DUP07112012, DUP071212, DUP07132012, DUP07162012, DUP07172012 and DUP07182012) were collected by Clear Creek and CQB for analysis. The collection of 10 duplicate samples meets the QA/QC method and quantity goal stated in Section 4.2.1.5 of the QAPP.

Sulfate results for the 10 duplicate samples collected are provided in the table below. The range of RPD values was between 0 and 2.97 percent, all within the 20 percent acceptance criteria for

CLEAR Third Quarter 2012 CREEK CREEK ASSOCIATES

SVL Project No.	Well ID	Duplicate ID	Sample (mg/l)	Duplicate (mg/l)	RPD
W2G0109	AWC-04	DUP07052012	28.2	28.1	0.36%
W2G0109	Banks 986	DUP07062012	78.6	77.9	0.89%
W2G0301	BMO-2008-8M	DUP071212	73.1	73.2	0.14%
W2G0364	Garner 635	DUP07112012	37.7	37.2	1.34%
W2G0454	Moore	DUP07172012	7.01	6.99	0.29%
W2G0364	Ness	DUP07102012	40.1	39.2	2.27%
W2G0364	Noteman	DUP07092012	265	265	0.00%
W2G0454	Parra	DUP07182012	418	419	0.24%
W2G0364	Rogers 803	DUP07132012	171	166	2.97%
W2G0454	TVI 875	DUP07162012	261	267	2.27%

field duplicates, as stated in Section 3.3.1 of the QAPP. Overall, the DQI for precision is deemed to be met.

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

5.2 Bias

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

5.3 Accuracy

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

5.4 Representativeness

All samples were taken from locations specified in the revised groundwater monitoring program (CQB, 2010) following sampling procedures specified in the QAPP. Therefore, the samples are

	Third Quarter 2012 Data Verification Report	11	October 19, 2012 055038-1.0
ASSOCIATES			

judged to provide a good representation of groundwater quality at the sampled locations. The sampling procedures are judged to be representative of groundwater quality at the sampled locations because no sulfate was detected in the field or equipment blanks. The analytical data are judged to be representative of groundwater conditions because the analyses used standard procedures and methods that met QA/QC guidelines of the QAPP.

5.5 Comparability

All samples were collected using standardized procedures (HGC, 2008) and were analyzed by SVL, Legend or 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, Legend, and Turner are judged to 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 method used to analyze the samples meet the MDL requirements specified in Table F.2 of the QAPP. Therefore, the analytical sensitivity is considered acceptable for use in aquifer characterization.

6. **REFERENCES**

- Arizona Department of Environmental Quality (ADEQ). 2007. Mitigation Order on Consent, Docket No. P-121-07, In the Matter of: Phelps Dodge Corporation, Copper Queen Branch, located at 36 West Highway 92, Bisbee, Arizona, ADEQ Identification Number 100531. November 14, 2007.
- ADEQ. 2010. Correspondence from Cynthia Campbell, ADEQ, to Rebecca Sawyer, CQB, Re: Request to Modify Groundwater Monitoring Program, Mitigation Order on Consent No. P-127-07, Your Letter Dated January 25, 2010. April 22, 2010.
- Freeport McMoRan Copper Queen Branch (CQB). 2010. Correspondence from Rebecca Sawyer, CQB, to Cynthia Campbell, ADEQ, Re: Request to Modify Groundwater Monitoring Program Mitigation Order on Consent No. P-121-07. January 25, 2010.
- Hydro Geo Chem, Inc. 2008. Revision 1, Work Plan to Characterize and Mitigate Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Concentrator Tailing Storage Area, Cochise County, Arizona. July 3, 2008.

APPENDIX C

ANALYTICAL REPORTS



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch 36 West Highway 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W210392 Reported: 21-Sep-12 12:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W2I0392-01	Ground Water	13-Sep-12 10:09	ML	17-Sep-2012
FRANCO 383	W2I0392-02	Ground Water	13-Sep-12 10:47	ML	17-Sep-2012
TM-10 USBP	W2I0392-03	Ground Water	13-Sep-12 12:39	ML	17-Sep-2012
HOWARD NR	W2I0392-04	Ground Water	13-Sep-12 13:35	ML	17-Sep-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government C	ne Government Gulch - PO Box 929 Kellogg ID 83837-0929					(208) 784-1258			Fax (208) 783-0891			
Freeport McMo	oRan - Copper Queen Branch	1			Proj	ect Name: Co	pper Quee	n Branch	n Sulfate Mitigati	ion Order		
36 West Highw	vay 92							Work (Order: W2I0392			
Bisbee, AZ 856	603							Rep	orted: 21-Sep-12	2 12:48		
	Client Sample ID: NWC SVL Sample ID: W210		Vater)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Sep-12 ceived: 17-Sep-12 led By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ons by Ion Chromatograp	ohy										
EPA 300.0	Sulfate as SO4	205	mg/L	3.00	0.47	10	W238116	AEW	09/18/12 15:02	D2		





One Government Gulch - PO Box 929 Kellogg ID 83837-0929				(208) 784-1258				Fax (208) 783-0891			
Freeport McMo	Ran - Copper Queen Brar	nch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order	
36 West Highw	ay 92							Work (Order: W2I0392		
Bisbee, AZ 856	03							Rep	orted: 21-Sep-12	2 12:48	
	Client Sample ID: FR SVL Sample ID: W2	ANCO 383 210392-02 (Ground V	/ater)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Sep-12 ceived: 17-Sep-12 led By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ns by Ion Chromatog	raphy									
EPA 300.0	Sulfate as SO4	318	mg/L	7.50	1.18	25	W238116	AEW	09/18/12 15:12	D2	





One Government Gulch - PO Box 929Kellogg ID 83837-0929					(208) 784-1258				Fax (208) 783-0891			
Freeport McMo	Ran - Copper Queen Bra	nch		Project Name: Copper Queen Branch Sulfate Mitigation (
36 West Highwa	ny 92				Work Order: W2I0392							
Bisbee, AZ 8560)3							Repo	orted: 21-Sep-1	2 12:48		
	Client Sample ID: TN SVL Sample ID: W	M-10 USBP 2l0392-03 (Ground V	Vater)	Sa	ample Report	Page 1 of 1		Rec	mpled: 13-Sep-12 ceived: 17-Sep-12 ed By: ML			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromatog	raphy										
EPA 300.0	Sulfate as SO4	13.3	mg/L	0.30	0.05		W238116	AEW	09/18/12 15:23			

Birby Gray



One Government Gulch - PO Box 929 Kellogg ID 83837-0929				(208) 784-1258				Fax (208) 783-0891			
Freeport McMo	Ran - Copper Queen Bra	inch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order	
36 West Highw	ay 92							Work (Order: W2I0392		
Bisbee, AZ 856	03							Rep	orted: 21-Sep-12	2 12:48	
	Client Sample ID: H SVL Sample ID: W	OWARD NR 2l0392-04 (Ground W	/ater)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Sep-12 ceived: 17-Sep-12 led By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ons by Ion Chromatog	graphy									
EPA 300.0	Sulfate as SO4	699	mg/L	7.50	1.18	25	W238116	AEW	09/18/12 15:33	D2	

Birby Gray



	nent Gulch - PO Box 929	Kellogg ID 83837	-0929		(20	08) 784-1258		Fax (208) 783-0891			
-	IcMoRan - Copper Queen Bran lighway 92 Z 85603	ch				Project Nar	ne: Copper Que	Work Orc	 Branch Sulfate Mitigation Order Work Order: W210392 Reported: 21-Sep-12 12:48 		
Quality (Control - BLANK Data										
Method	Analyte	Units	Resul	lt	MDL]	MRL	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	<0.30)	0.05		0.30	W238116	18-Sep-12		
Quality (Control - LABORATORY (CONTROL SA	AMPLE Data								
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	10.4		10.0	104	90 - 110	W238116	18-Sep-12		
- •	Control - DUPLICATE Dat		Duplica	ıte	Sample		RPD				
Method	Analyte	Units	Result		Result	RPD	Limit	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	7.99		8.10	1.3	20	W238116	18-Sep-12		
Quality (Control - MATRIX SPIKE	Data									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved .	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	19.8	8.10 38.6	10.0 10.0	117 115	90 - 110 90 - 110	W238116 W238116	18-Sep-12 18-Sep-12	M1 M1	
EPA 300.0	Sulfate as SO4	mg/L	50.2	38.0	10.0	115	90 - 110				
EPA 300.0		mg/L		s and Defi		115	90 - 110		F		
EPA 300.0 EPA 300.0			Note	s and Defi		115	90 - 110				
EPA 300.0 EPA 300.0 D2	Sulfate as SO4	to high concen	Note	s and Defi analyte.		115	90 - 110				
EPA 300.0 EPA 300.0 D2 M1	Sulfate as SO4	to high concen gh, but the LCS	Note	s and Defi analyte.		113	90 - 110				
EPA 300.0 EPA 300.0 D2 M1 LCS	Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi	to high concen gh, but the LCS	Note	s and Defi analyte.		113	90 - 110				
EPA 300.0 EPA 300.0 D2 M1 LCS RPD	Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi Laboratory Control Sample (to high concen igh, but the LCS Blank Spike)	Note	s and Defi analyte.			90 - 110				
EPA 300.0 EPA 300.0 D2 M1 LCS RPD UDL	Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi Laboratory Control Sample (Relative Percent Difference	to high concen igh, but the LCS Blank Spike) tion limit	Note tration of target : recovery was a	s and Defi analyte. cceptable.	nitions		90 - 110				
EPA 300.0 EPA 300.0 D2 M1 LCS RPD UDL R > 4S	Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi Laboratory Control Sample (Relative Percent Difference A result is less than the detect	to high concen igh, but the LCS Blank Spike) tion limit ample concentra	Note tration of target : recovery was a	s and Defi analyte. cceptable.	nitions		90 - 110				
EPA 300.0 EPA 300.0 D2 M1 LCS RPD UDL R > 4S <rl MRL</rl 	Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi Laboratory Control Sample (Relative Percent Difference A result is less than the detec % recovery not applicable, sa	to high concen igh, but the LCS Blank Spike) tion limit ample concentra	Note tration of target : recovery was a	s and Defi analyte. cceptable.	nitions		90 - 110				
EPA 300.0 EPA 300.0 D2 M1 LCS RPD UDL R > 4S <rl< td=""><td>Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi Laboratory Control Sample (Relative Percent Difference A result is less than the detect % recovery not applicable, sa A result is less than the report</td><td>to high concen igh, but the LCS Blank Spike) tion limit ample concentra</td><td>Note tration of target : recovery was a</td><td>s and Defi analyte. cceptable.</td><td>nitions</td><td></td><td>90 - 110</td><td></td><td></td><td></td></rl<>	Sulfate as SO4 Sample required dilution due Matrix spike recovery was hi Laboratory Control Sample (Relative Percent Difference A result is less than the detect % recovery not applicable, sa A result is less than the report	to high concen igh, but the LCS Blank Spike) tion limit ample concentra	Note tration of target : recovery was a	s and Defi analyte. cceptable.	nitions		90 - 110				



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

Freeport McMoRan - Copper Queen Branch 36 West Highway 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W210207 Reported: 18-Sep-12 13:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
NWC-04	W2I0207-01	Ground Water	28-Aug-12 10:32	BD	11-Sep-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government Gu	ulch - PO Box 929 Ke			(208) 784	4-1258		Fax (208) 783-0891				
Freeport McMo	rt McMoRan - Copper Queen Branch at Highway 92				Proj	ect Name: Co	opper Quee	n Branch	Sulfate Mitigati	ion Order	
36 West Highwa	ny 92						Work (Order: W2I0207			
Bisbee, AZ 8560)3							Rep	orted: 18-Sep-12	2 13:15	
	Client Sample ID: NWC-04 SVL Sample ID: W2I0207-01 (Ground Water)					Page 1 of 1		Re	ampled: 28-Aug-12 ceived: 11-Sep-12 led By: BD		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ns by Ion Chromatogra	phy									
EPA 300.0	Sulfate as SO4	208	mg/L	3.00	0.47	10	W237208	AEW	09/12/12 21:15	D2	

John Ken



	nent Gulch - PO Box 929	Kellogg ID 83837	-0929		(20	8) 784-1258		Fa	x (208) 783-089	1
-	IcMoRan - Copper Queen Bran lighway 92 Z 85603	ch				Project Nan	ne: Copper Que	Work Ore	ulfate Mitiga der: W210207 ted: 18-Sep-1	7
Quality (Control - BLANK Data									
Method	Analyte	Units	Resu	lt	MDL]	MRL	Batch ID	Analyzed	Notes
Dissolved A	Anions by Ion Chromatogr Sulfate as SO4	raphy mg/L	<0.30)	0.05	().30	W237208	12-Sep-12	
Quality (Control - LABORATORY (CONTROL S	AMPLE Data							
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	raphy mg/L	10.0		10.0	100	90 - 110	W237208	12-Sep-12	
Quality C	Control - DUPLICATE Dat	a	Duplica	nte	Sample		RPD			
Method	Analyte	Units	Result		Result	RPD	Limit	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	9.56		9.64	0.8	20	W237208	12-Sep-12	
Quality C	Control - MATRIX SPIKE	Data								
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A	Anions by Ion Chromatogr Sulfate as SO4 Sulfate as SO4	r aphy mg/L mg/L	20.7 45.0	9.64 33.7	10.0 10.0	110 113	90 - 110 90 - 110	W237208 W237208	12-Sep-12 12-Sep-12	M1
	Sunde do So i									
			Note	s and Defi	nitions					
EPA 300.0	Sample required dilution due	e to high concen			nitions					
EPA 300.0 D2		-	tration of target	analyte.	nitions					
D2 D1 D2	Sample required dilution due	igh, but the LCS	tration of target	analyte.	nitions					
D2 LCS	Sample required dilution due Matrix spike recovery was h	igh, but the LCS	tration of target	analyte.	nitions					
D2 D2 LCS RPD	Sample required dilution due Matrix spike recovery was h Laboratory Control Sample (igh, but the LCS (Blank Spike)	tration of target	analyte.	nitions					
D2 M1 LCS RPD UDL	Sample required dilution due Matrix spike recovery was h Laboratory Control Sample (Relative Percent Difference	igh, but the LCS (Blank Spike) ction limit	tration of target	analyte. cceptable.		evel				
D2 M1 LCS RPD UDL R > 4S	Sample required dilution due Matrix spike recovery was h Laboratory Control Sample (Relative Percent Difference A result is less than the detect	igh, but the LCS (Blank Spike) ction limit ample concentra	tration of target	analyte. cceptable.		evel				
D2 M1 LCS RPD UDL R > 4S <rl MRL</rl 	Sample required dilution due Matrix spike recovery was h Laboratory Control Sample (Relative Percent Difference A result is less than the detec % recovery not applicable, se	igh, but the LCS (Blank Spike) ction limit ample concentra	tration of target	analyte. cceptable.		evel				
D2 M1 LCS RPD UDL R > 4S <rl< td=""><td>Sample required dilution due Matrix spike recovery was h Laboratory Control Sample (Relative Percent Difference A result is less than the detec % recovery not applicable, sa A result is less than the report</td><td>igh, but the LCS (Blank Spike) ction limit ample concentra</td><td>tration of target</td><td>analyte. cceptable.</td><td></td><td>evel</td><td></td><td></td><td></td><td></td></rl<>	Sample required dilution due Matrix spike recovery was h Laboratory Control Sample (Relative Percent Difference A result is less than the detec % recovery not applicable, sa A result is less than the report	igh, but the LCS (Blank Spike) ction limit ample concentra	tration of target	analyte. cceptable.		evel				



Freeport McMoRan - Bisbee

36 West Hwy 92

Bisbee, AZ 85603

One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2H0468 Reported: 23-Aug-12 18:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
TM-7	W2H0468-01	Ground Water	13-Aug-12 10:23	CLS	16-Aug-2012
BMO-2008-13M	W2H0468-02	Ground Water	13-Aug-12 15:30	CLS	16-Aug-2012
BMO-2008-11G	W2H0468-03	Ground Water	14-Aug-12 07:35	CLS	16-Aug-2012
TM-2A	W2H0468-04	Ground Water	14-Aug-12 09:00	CLS	16-Aug-2012
BF-1	W2H0468-05	Ground Water	14-Aug-12 09:31	CLS	16-Aug-2012
BMO-2008-1G	W2H0468-06	Ground Water	14-Aug-12 12:40	CLS	16-Aug-2012
BMO-2008-4B	W2H0468-07	Ground Water	15-Aug-12 10:00	CLS	16-Aug-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government G	ulch - PO Box 929 K		(208) 784-1258					Fax (208) 783-0891				
Freeport McMo 36 West Hwy 92 Bisbee, AZ 856	2				Proj	ect Name: Co	pper Quee	Work (Sulfate Mitigati Order: W2H0468 orted: 23-Aug-12	}		
	Client Sample ID: TM- SVL Sample ID: W2H	-	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Aug-12 ceived: 16-Aug-12 led By: CLS			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromatogra	phy										
		25.4	mg/L	3.00	0.47	10	W234205	AEW	08/22/12 18:03			





One Government Gul	lch - PO Box 929			(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMoR	an - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order	
36 West Hwy 92							Work C	Order: W2H0468	3		
Bisbee, AZ 85603	3						Rep	orted: 23-Aug-12	2 18:19		
	Client Sample ID: BMO-2008-13M SVL Sample ID: W2H0468-02 (Ground Water)					Page 1 of 1		Re	ampled: 13-Aug-12 ceived: 16-Aug-12 led By: CLS		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anion	s by Ion Chromato	graphy									

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		Fax (208) 783-0891				
Freeport McM	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order		
36 West Hwy 9	92						Work C	order: W2H046	8			
Bisbee, AZ 850	603							Repo	orted: 23-Aug-1	2 18:19		
	Client Sample ID: SVL Sample ID:	Vater)	Sa	mple Report	t Page 1 of 1		Rec	mpled: 14-Aug-1 ceived: 16-Aug-1 ed By: CLS				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ons by Ion Chromat	ography										
EPA 300.0	Sulfate as SO4	12.3	mg/L	0.30	0.05		W234205	AEW	08/22/12 18:23			

John Ken



One Government G	Government Gulch - PO Box 929 Kellogg ID 83837-0929					4-1258		Fax (208) 783-0891				
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Orde		
36 West Hwy 92	2							Work O	rder: W2H046	8		
Bisbee, AZ 856	03							Repo	orted: 23-Aug-1	2 18:19		
	Client Sample ID: TM - SVL Sample ID: W2H		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 14-Aug-1 eived: 16-Aug-1 ed By: CLS			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromatogra	phy										
EPA 300.0	Sulfate as SO4	23.4	mg/L	0.30	0.05		W234205	AEW	08/22/12 18:33			

John Ken



One Government Gu	ulch - PO Box 929			(208) 78	4-1258			Fax (208) 783-0891		
Freeport McMol 36 West Hwy 92	2				Proj	ect Name: Co	opper Quee	Work (Sulfate Mitigati	3
Bisbee, AZ 8560	Client Sample ID: BF	-1						Sa	ampled: 14-Aug-12	2 09:31
	SVL Sample ID: W2	H0468-05 (Ground	Water)	Sa	ample Report	Page 1 of 1			ceived: 16-Aug-12 led By: CLS	2
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	1500	mg/L	30.0	4.70	100	W234205	AEW	08/22/12 18:43	D2

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMc	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order		
36 West Hwy 9	2						Work (Order: W2H0468	3			
Bisbee, AZ 856	603							Rep	orted: 23-Aug-1	2 18:19		
	Client Sample ID: SVL Sample ID:	Vater)	S	ample Report	Page 1 of 1		Re	ampled: 14-Aug-12 ceived: 16-Aug-12 led By: CLS				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ons by Ion Chromat	ography										
EPA 300.0	Sulfate as SO4	120	mg/L	3.00	0.47	10	W234205	AEW	08/22/12 18:53	D2		

John Ken



One Government G	ulch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 92	2							Work C	order: W2H046	8
Bisbee, AZ 856	03							Repo	orted: 23-Aug-1	2 18:19
	Client Sample ID: BMO SVL Sample ID: W2H		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 15-Aug-1 ceived: 16-Aug-1 ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	9.50	mg/L	0.30	0.05		W234205	AEW	08/22/12 19:03	





One Governm	nent Gulch - PO Box 929	Kellogg ID 83837-	0929		(20	08) 784-1258		Fa	x (208) 783-089	1
Freeport M 36 West H Bisbee, AZ						Project Nan	ne: Copper Que	Work Ore	der: W2H046 ted: 23-Aug-1	68
Quality C	Control - BLANK Data									
Method	Analyte	Units	Resul	lt	MDL	I	MRL	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromat Sulfate as SO4	ography mg/L	<0.30)	0.05	().30	W234205	22-Aug-12	
Quality C	Control - LABORATOR	RY CONTROL SA	MPLE Data							
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromat Sulfate as SO4	ography mg/L	9.99		10.0	99.9	90 - 110	W234205	22-Aug-12	
Quality C	Control - DUPLICATE	Data								
Method	Analyte	Units	Duplica Result	te	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0	Anions by Ion Chromat Sulfate as SO4	t ography mg/L	0.37		0.37	0.5	20	W234205	22-Aug-12	
Quality C	Control - MATRIX SPII	KE Data	0.1				• .			
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Dissolved A EPA 300.0 EPA 300.0	Anions by Ion Chromat Sulfate as SO4 Sulfate as SO4	mg/L mg/L	11.4 37.0	0.37 25.6	10.0 10.0	110 114	90 - 110 90 - 110	W234205 W234205	22-Aug-12 22-Aug-12	M1
			Note	s and Defi	nitions					
D1	Sample required dilution	due to matrix.								
D2	Sample required dilution	due to high concent	ration of target a	analyte.						
M1	Matrix spike recovery w	as high, but the LCS	recovery was a	cceptable.						
LCS	Laboratory Control Sam	ple (Blank Spike)								
RPD	Relative Percent Differen	nce								
UDL	A result is less than the c	letection limit								
R > 4S	% recovery not applicable	le, sample concentrat	ion more than f	our times gre	eater than spike lo	evel				
<rl< td=""><td>A result is less than the r</td><td>eporting limit</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></rl<>	A result is less than the r	eporting limit								
MRL	Method Reporting Limit									
MDL	Method Detection Limit									
N/A	Not Applicable									



One Government Gulch - PO Box 929

Freeport McMoRan - Bisbee

36 West Hwy 92

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0454 Reported: 01-Aug-12 10:17

Bisbee, AZ 85603

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
MOORE	W2G0454-01	Ground Water	17-Jul-12 11:14	VH	19-Jul-2012
KEEFER	W2G0454-02	Ground Water	17-Jul-12 10:06	VH	19-Jul-2012
EQB07172012	W2G0454-03	Water	17-Jul-12 09:42	VH	19-Jul-2012
FB07172012	W2G0454-04	Water	17-Jul-12 09:41	VH	19-Jul-2012
DUP07172012	W2G0454-05	Ground Water	17-Jul-12 11:15	VH	19-Jul-2012
ZANDER	W2G0454-06	Ground Water	17-Jul-12 12:52	VH	19-Jul-2012
ROGERS, E	W2G0454-07	Ground Water	17-Jul-12 15:41	VH	19-Jul-2012
CHAMBERS	W2G0454-08	Ground Water	17-Jul-12 15:50	VH	19-Jul-2012
ECHAVE	W2G0454-09	Ground Water	17-Jul-12 17:52	VH	19-Jul-2012
NWC-04	W2G0454-10	Ground Water	18-Jul-12 08:41	VH	19-Jul-2012
NWC-06	W2G0454-11	Ground Water	18-Jul-12 10:06	VH	19-Jul-2012
NWC-03	W2G0454-12	Ground Water	18-Jul-12 09:30	VH	19-Jul-2012
SCHWARTZ	W2G0454-13	Ground Water	16-Jul-12 14:40	VH	19-Jul-2012
TVI 236	W2G0454-14	Ground Water	16-Jul-12 15:55	VH	19-Jul-2012
TVI 875	W2G0454-15	Ground Water	16-Jul-12 16:40	VH	19-Jul-2012
DUP07162012	W2G0454-16	Ground Water	16-Jul-12 16:40	VH	19-Jul-2012
COOPER	W2G0454-17	Ground Water	18-Jul-12 14:08	VH	19-Jul-2012
RUIZ	W2G0454-18	Ground Water	18-Jul-12 13:09	VH	19-Jul-2012
FB07182012	W2G0454-19	Water	18-Jul-12 14:15	VH	19-Jul-2012
EQB07182012	W2G0454-20	Water	18-Jul-12 14:16	VH	19-Jul-2012
NWC-02	W2G0454-21	Ground Water	18-Jul-12 10:37	VH	19-Jul-2012
DUP07182012	W2G0454-22	Ground Water	18-Jul-12 12:08	VH	19-Jul-2012
PARRA	W2G0454-23	Ground Water	18-Jul-12 12:08	VH	19-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government Gu	lch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		1	Fax (208) 783-089	1
Freeport McMoR					Proj	ect Name: Co	pper Quee		Sulfate Mitigat	
36 West Hwy 92									Order: W2G045	
Bisbee, AZ 8560	3							Repo	orted: 01-Aug-1	2 10:17
	Client Sample ID: MC SVL Sample ID: W2	DORE 2G0454-01 (Ground	Water)	Sa	mple Report	Page 1 of 1		Rec	ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	7.01	mg/L	0.30	0.05		W230131	AEW	07/24/12 14:36	

John Ken



One Government Gu	Ilch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		Fax (208) 783-0891				
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order		
36 West Hwy 92								Work C	order: W2G045	4		
Bisbee, AZ 8560)3							Repo	orted: 01-Aug-1	2 10:17		
	Client Sample ID: KE SVL Sample ID: W2		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 17-Jul-12 evived: 19-Jul-12 ed By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromatogr	aphy										
EPA 300.0	Sulfate as SO4	7.29	mg/L	0.30	0.05		W230131	AEW	07/24/12 14:46			

John Ken



One Government	Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-089	1
Freeport McM	oRan - Bisbee				Proj	ect Name: Co	pper Quee		Sulfate Mitigat	
36 West Hwy	92							Work C	Order: W2G045	4
Bisbee, AZ 85	603							Repo	orted: 01-Aug-1	2 10:17
	-	EQB07172012 W2G0454-03 (Water)		Sa	ample Report	Page 1 of 1		Red	ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	4 < 0.30	mg/L	0.30	0.05		W230289	AEW	07/26/12 16:55	

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-089	1
Freeport McM					Proj	ect Name: Co	pper Quee		Sulfate Mitigat	
36 West Hwy 9	92							Work (Order: W2G045	4
Bisbee, AZ 850	603							Rep	orted: 01-Aug-1	2 10:17
	Client Sample ID: SVL Sample ID:	FB07172012 W2G0454-04 (Water)		Sa	ample Report	Page 1 of 1		Re	mpled: 17-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	4 < 0.30	mg/L	0.30	0.05		W230289	AEW	07/26/12 17:04	

John Ken



One Government Gu	ulch - PO Box 929 Ke			(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order	
36 West Hwy 92	2							Work C	Order: W2G045	4	
Bisbee, AZ 8560)3							Repo	orted: 01-Aug-1	2 10:17	
	Client Sample ID: DUP SVL Sample ID: W2G		Water)	Sa	ample Report	t Page 1 of 1		Rec	ed By: VH		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anior	ns by Ion Chromatogra	phy									
EPA 300.0	Sulfate as SO4	6.99	mg/L	0.30	0.05		W230131	AEW	07/24/12 14:56		

John Ken



One Government Gu	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		I	Fax (208) 783-089	1
Freeport McMol 36 West Hwy 92					Proj	ect Name: Co	pper Quee		Sulfate Mitigat	
Bisbee, AZ 8560									orted: 01-Aug-1	-
	Client Sample ID: ZA SVL Sample ID: W 2	NDER 2G0454-06 (Ground	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 17-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	6.38	mg/L	0.30	0.05		W230131	AEW	07/24/12 15:26	

John Ken



One Government Gu	Ilch - PO Box 929 Ke	ellogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMoF	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92								Work C	Order: W2G045	4
Bisbee, AZ 8560)3							Repo	orted: 01-Aug-1	2 10:17
	Client Sample ID: ROO SVL Sample ID: W2G	,	Water)	Sa	mple Report	Page 1 of 1		Rec	mpled: 17-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anior	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	5.85	mg/L	0.30	0.05		W230131	AEW	07/24/12 15:35	

John Ken



One Government Gu	Ilch - PO Box 929 K	ellogg ID 83837-0929			(208) 78	4-1258		Η	Fax (208) 783-089	1
Freeport McMoI	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	order: W2G045	4
Bisbee, AZ 8560)3							Repo	orted: 01-Aug-1	2 10:17
	Client Sample ID: CHA SVL Sample ID: W2G		Water)	Sa	mple Report	Page 1 of 1		Rec	mpled: 17-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anior	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	8.41	mg/L	0.30	0.05		W230131	AEW	07/24/12 15:45	

John Ken



One Government Gu	lch - PO Box 929 K	ellogg ID 83837-0929			(208) 784	4-1258		Fax (208) 783-0891				
Freeport McMoR	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order		
36 West Hwy 92								Work C	order: W2G045	4		
Bisbee, AZ 8560	13							Repo	orted: 01-Aug-1	2 10:17		
	Client Sample ID: ECH SVL Sample ID: W20		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 17-Jul-12 eeived: 19-Jul-12 ed By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anion	ns by Ion Chromatogra	phy										
EPA 300.0	Sulfate as SO4	26.1	mg/L	0.30	0.05		W230131	AEW	07/24/12 15:55			

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo					Proj	ect Name: Co	pper Quee		sulfate Mitigati	
36 West Hwy 92	2							Work (Order: W2G0454	1
Bisbee, AZ 856	03							Rep	orted: 01-Aug-12	2 10:17
	Client Sample ID: SVL Sample ID:	NWC-04 W2G0454-10 (Ground V	Vater)	Sa	ample Report	Page 1 of 1		Re	ampled: 18-Jul-12 ceived: 19-Jul-12 led By: VH	08:41
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chroma	tography								

John Ken



One Government Gu	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		1	Fax (208) 783-089	1
Freeport McMo					Proj	ect Name: Co	pper Quee		Sulfate Mitiga	
36 West Hwy 92	2							Work C	Order: W2G045	54
Bisbee, AZ 8560	03							Repo	orted: 01-Aug-1	2 10:17
	Client Sample ID: N SVL Sample ID: N	NWC-06 V2G0454-11 (Ground N	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 18-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromato	ography								
EPA 300.0	Sulfate as SO4	8.60	mg/L	0.30	0.05		W230131	AEW	07/24/12 16:15	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo					Proj	ect Name: Co	pper Quee		n Sulfate Mitigati	
36 West Hwy 92 Bisbee, AZ 8560									Order: W2G0454 orted: 01-Aug-12	-
,	Client Sample ID: SVL Sample ID:	NWC-03 W2G0454-12 (Ground V	Vater)	Sa	ample Report	Page 1 of 1		Re	ampled: 18-Jul-12 cceived: 19-Jul-12 led By: VH	09:30
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromat	tography								
EPA 300.0	Sulfate as SO4	4 354	mg/L	7.50	1.18	25	W230131	AEW	07/24/12 16:35	D2

John Ken



One Government Gulch -	PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		1	Fax (208) 783-0891	l
Freeport McMoRan	- Bisbee				Proje	ect Name: Co	pper Quee		Sulfate Mitigat	
36 West Hwy 92									Order: W2G045	
Bisbee, AZ 85603								кер	orted: 01-Aug-1	2 10:17
Clie	nt Sample ID: S	CHWARTZ						Sa	ampled: 16-Jul-12	14:40
SV	L Sample ID: W	/2G0454-13 (Ground V	Vater)	Sa	ample Report	Page 1 of 1			ceived: 19-Jul-12 led By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions b	y Ion Chromato	graphy								

John Ken



One Government Gulc	ch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMoRa	nn - Bisbee				Proj	ect Name: Co	pper Quee		n Sulfate Mitigati	
36 West Hwy 92								Work (Order: W2G0454	4
Bisbee, AZ 85603								Rep	orted: 01-Aug-1	2 10:17
	lient Sample ID: TV SVL Sample ID: W2	236 2G0454-14 (Ground	Water)	S	ample Report	Page 1 of 1		Re	ampled: 16-Jul-12 ceived: 19-Jul-12 led By: VH	15.55
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions	by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	36.3	mg/L	1.50	0.24	5	W230131	AEW	07/24/12 16:55	D1

John Ken



One Government Gulch - 1	PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258]	Fax (208) 783-0891	
Freeport McMoRan -	Bisbee				Proje	ect Name: Co	pper Quee		Sulfate Mitigati	
36 West Hwy 92									Order: W2G0454	
Bisbee, AZ 85603								Кер	orted: 01-Aug-1	2 10.17
Clien	nt Sample ID: TV	1 875							ampled: 16-Jul-12	16:40
SVI	L Sample ID: W2	2G0454-15 (Ground \	Nater)	Sa	mple Report	Page 1 of 1			ceived: 19-Jul-12 led By: VH	
					1.001		D 1			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions by			Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

John Ken



One Government Gulch	n - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258			Fax (208) 783-0891	
Freeport McMoRan	1 - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Hwy 92								Work (Order: W2G045	4
Bisbee, AZ 85603								Rep	orted: 01-Aug-1	2 10:17
	ent Sample ID: D VL Sample ID: W	UP07162012 /2G0454-16 (Ground \	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 16-Jul-12 ceived: 19-Jul-12 led By: VH	10.40
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions	by Ion Chromato	graphy								

John Ken



One Government Gul	Ich - PO Box 929 K	ellogg ID 83837-0929			(208) 784	4-1258		1	Fax (208) 783-089	1
Freeport McMoR	an - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 92								Work C	Order: W2G045	54
Bisbee, AZ 85603	3							Repo	orted: 01-Aug-1	12 10:17
	Client Sample ID: COC SVL Sample ID: W2G		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 18-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	33.4	mg/L	0.30	0.05		W230131	AEW	07/24/12 17:44	

John Ken



One Government C	Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258			Fax (208) 783-0891	
Freeport McMc 36 West Hwy 9					Proj	ect Name: Co	pper Quee		Sulfate Mitigati Drder: W2G0454	
Bisbee, AZ 856	503							Rep	orted: 01-Aug-1	2 10:17
	Client Sample ID: SVL Sample ID:	RUIZ W2G0454-18 (Ground V	Vater)	Sa	ample Report	Page 1 of 1		Re	ampled: 18-Jul-12 ceived: 19-Jul-12 led By: VH	13:09
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromat	tography								

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-089	1
Freeport McM					Proj	ect Name: Co	pper Quee		Sulfate Mitiga	
36 West Hwy 9	92							Work (Order: W2G045	4
Bisbee, AZ 85	603							Rep	orted: 01-Aug-1	2 10:17
	Client Sample ID: SVL Sample ID:	FB07182012 W2G0454-19 (Water)		Sa	ample Report	Page 1 of 1		Re	umpled: 18-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	4 < 0.30	mg/L	0.30	0.05		W230289	AEW	07/26/12 17:14	

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-089	1
Freeport McM					Proj	ect Name: Co	pper Quee		Sulfate Mitiga	
36 West Hwy	92							Work C	Order: W2G045	4
Bisbee, AZ 85	603							Repo	orted: 01-Aug-1	2 10:17
	-	EQB07182012 W2G0454-20 (Water)		Sa	ample Report	Page 1 of 1		Ree	mpled: 18-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	4 < 0.30	mg/L	0.30	0.05		W230289	AEW	07/26/12 17:24	

John Ken



One Government Gu	llch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		I	Fax (208) 783-089	1
Freeport McMol					Proj	ect Name: Co	pper Quee		Sulfate Mitigat	
36 West Hwy 92 Bisbee, AZ 8560									Order: W2G045 Orted: 01-Aug-1	-
	Client Sample ID: NV SVL Sample ID: W2	VC-02 G0454-21 (Ground	Water)	Sa	mple Report	Page 1 of 1		Rec	mpled: 18-Jul-12 ceived: 19-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	6.99	mg/L	0.30	0.05		W230131	AEW	07/24/12 18:04	

John Ken



One Government C	Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	l
Freeport McMo	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	n Sulfate Mitigat	ion Order
36 West Hwy 9	92							Work (Order: W2G045	4
Bisbee, AZ 856	603							Rep	orted: 01-Aug-1	2 10:17
	Client Sample ID: SVL Sample ID:	DUP07182012 W2G0454-22 (Ground \	Water)	Sampled: 18 Received: 19 Sample Report Page 1 of 1 Sample By: V.						
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chroma	tography								
	•••• »J •••• ••••	··· 8 ·· []								

John Ken



One Government Gu	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee		Sulfate Mitigat	
36 West Hwy 92	2							Work (Order: W2G0454	1
Bisbee, AZ 8560)3							Rep	orted: 01-Aug-1	2 10:17
	Client Sample ID: SVL Sample ID: N	PARRA W2G0454-23 (Ground V	Vater)	Sa	ample Report	Page 1 of 1		Re	ampled: 18-Jul-12 ceived: 19-Jul-12 led By: VH	12:08
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromat	ography								
EPA 300.0	Sulfate as SO4	418	mg/L	7.50	1.18	25	W230234	AEW	07/25/12 21:01	D2

John Ken



ne Government C	Gulch - PO Box 929	Kellogg ID 83837-	0929		(208) 784-1258		Fax	x (208) 783-089	1
Freeport McMo 36 West Hwy 9 Bisbee, AZ 856	02				Р	Project Nam	e: Copper Que	Work Ord	ulfate Mitiga ler: W2G045 ed: 01-Aug-1	54
Quality Cont	rol - BLANK Data									
Method	Analyte	Units	Result		MDL	Ν	IRL	Batch ID	Analyzed	Notes
•	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	< 0.30		0.05	0	30	W230289	26-Jul-12	
	ons by Ion Chromato						•			
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	<0.30 <0.30		0.05 0.05		30 30	W230131 W230234	24-Jul-12 25-Jul-12	
2FA 500.0	Sunate as 504	ilig/L	~0.50		0.05	0	.50	W 230234	23 -Jul- 12	
Quality Cont	rol - LABORATOR	Y CONTROL SA								
Method	Analyte	Units	LCS Result		CS rue	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
	<i>c</i> 1									
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/I	9.62	1	0.0	96.2	90 - 110	W230289	26-Jul-12	
LIA 300.0	Suitate as 504	mg/L	9.02	I	0.0	90.2	<i>y</i> 0 - 110	W 230289	20-Jui-12	
	ons by Ion Chromate									
EPA 300.0	Sulfate as SO4	mg/L	9.73		0.0	97.3	90 - 110	W230131	24-Jul-12	
EPA 300.0	Sulfate as SO4	mg/L	10.1		0.0	101	90 - 110	W230234	25-Jul-12	
Quality Cont	rol - DUPLICATE I	Data								
Method	Analyte	Units	Duplicate Result		ample esult	RPD	RPD Limit	Batch ID	Analyzed	Notes
nions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	15.2	1:	5.2	0.1	20	W230289	26-Jul-12	
500.0	Sundo us so i	ing E	10.2	1.		0.1	20	11250205	20 541 12	
	ons by Ion Chromato	ography								
EPA 300.0	Sulfate as SO4	mg/L	49.8		0.1	0.6	20	W230234	26-Jul-12	D2
EPA 300.0	Sulfate as SO4	mg/L	655	60	67	1.9	20	W230131	24-Jul-12	D2
Quality Cont	rol - MATRIX SPIK	E Data								
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
	Chromatography									
nions by Ion	01.	mg/L	26.4	15.2	10.0	111	90 - 110	W230289	26-Jul-12	M1
Anions by Ion EPA 300.0	Sulfate as SO4			180	10.0	R > 4S	90 - 110	W230289	26-Jul-12	D2,M3
Anions by Ion EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L	192	100						
EPA 300.0 EPA 300.0 Dissolved Anio	Sulfate as SO4	ography			10.0	D . 17	00 110		04 T 1 40	D
EPA 300.0 EPA 300.0 Dissolved Anic EPA 300.0	Sulfate as SO4 Ons by Ion Chromato Sulfate as SO4	ography mg/L	667	667	10.0	R > 4S	90 - 110 90 - 110	W230131	24-Jul-12	D2,M3
EPA 300.0 EPA 300.0 Dissolved Anio	Sulfate as SO4	ography			10.0 10.0 10.0	R > 4S 107 R > 4S	90 - 110 90 - 110 90 - 110	W230131 W230131 W230234	24-Jul-12 24-Jul-12 25-Jul-12	D2,M3 D2,M3



One Government Gulch - PO Box 929 k

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0454 Reported: 01-Aug-12 10:17

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

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



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

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

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0366 Reported: 26-Jul-12 13:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
COB MW-1	W2G0366-01	Ground Water	12-Jul-12 13:19	VH	17-Jul-2012
COB MW-2	W2G0366-02	Ground Water	12-Jul-12 10:06	VH	17-Jul-2012
PIONKE	W2G0366-03	Ground Water	11-Jul-12 18:15	VH	17-Jul-2012
FB07112012	W2G0366-04	Ground Water	11-Jul-12 15:37	VH	17-Jul-2012
MARCELL	W2G0366-05	Ground Water	13-Jul-12 11:07	VH	17-Jul-2012
WEISKOPF	W2G0366-06	Ground Water	13-Jul-12 09:24	VH	17-Jul-2012
ANDERSON	W2G0366-07	Ground Water	12-Jul-12 16:36	VH	17-Jul-2012
COB WL	W2G0366-08	Ground Water	12-Jul-12 15:30	VH	17-Jul-2012
COB MW-3	W2G0366-09	Ground Water	12-Jul-12 09:09	VH	17-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL. Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government G	ulch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Branch				Proj	ect Name: Co	pper Quee	n Branch	ion Order	
36 West Highwa	ay 92							Work (Order: W2G0366	5
Bisbee, AZ 856	03							Rep	orted: 26-Jul-12	13:32
	Client Sample ID: COB MW-1 SVL Sample ID: W2G0366-01 (Ground Water) Method Analyte Result Unit solved Anions by Ion Chromatography				Sample Report Page 1 of 1 Sampled: 12-Jul Received: 17-Jul Sample Bey: VH					
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	805	mg/L	30.0	4.70	100	W230028	AEW	07/23/12 20:10	D2

Birby Gray



ne Government Gul	Ich - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		Fax (208) 783-089 1 Branch Sulfate Mitigat Work Order: W2G036 Reported: 26-Jul-12 Sampled: 12-Jul-12 Received: 17-Jul-12 Sampled By: VH		1
Freeport McMoR	an - Copper Queen Branch				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highway	y 92							Work C	rder: W2G036	66
Bisbee, AZ 85602	3							Repo	orted: 26-Jul-12	2 13:32
	Client Sample ID: COB SVL Sample ID: W2G	Water)	Sa	ample Report	Page 1 of 1		Rec	eived: 17-Jul-12		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
issolved Anion	s by Ion Chromatogra	ohy								
PA 300.0	Sulfate as SO4	29.2	mg/L	0.30	0.05		W230028	AEW	07/23/12 20:20	

Birby Gray



One Government G	ılch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
1	Ran - Copper Queen Brar	nch			Proj	ect Name: Co	pper Quee		n Sulfate Mitigati Order: W2G0366	
36 West Highwa Bisbee, AZ 8560	5								orted: 26-Jul-12	-
,	Client Sample ID: Pl(SVL Sample ID: W2	ONKE 2G0366-03 (Ground)	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 cceived: 17-Jul-12 led By: VH	18:15
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	439	mg/L	15.0	2.35	50	W230028	AEW	07/23/12 20:30	D2

Birby Gray



One Government Gu	lch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		I	91	
Freeport McMoF	Ran - Copper Queen Branch	I			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highwa	y 92							Work C	order: W2G030	56
Bisbee, AZ 8560	3							Repo	orted: 26-Jul-12	2 13:32
(Client Sample ID: FB0 SVL Sample ID: W2G		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 11-Jul-12 eeived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion C	Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W230018	AEW	07/23/12 15:28	





One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Bran	ch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Highwa	ay 92							Work (Order: W2G0360	5
Bisbee, AZ 856	03							Rep	orted: 26-Jul-12	13:32
	Client Sample ID: MA SVL Sample ID: W2	RCELL G0366-05 (Ground V	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Jul-12 ceived: 17-Jul-12 led By: VH	11:07
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	650	mg/L	15.0	2.35	50	W230028	AEW	07/23/12 20:41	D2





One Government G	ulch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Branch				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Highwa	ay 92							Work (Order: W2G036	6
Bisbee, AZ 856	03							Rep	orted: 26-Jul-12	13:32
	Client Sample ID: WEIS SVL Sample ID: W2G	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Jul-12 ceived: 17-Jul-12 led By: VH	09:24	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatograp	ohy								
EPA 300.0	Sulfate as SO4	552	mg/L	7.50	1.18	25	W230028	AEW	07/23/12 20:51	D2

Birby Gray



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMc	Ran - Copper Queen Bran	ch			Proj	ect Name: Co	pper Quee	n Branch	n Sulfate Mitigati	ion Order
36 West Highw	ay 92							Work (Order: W2G0360	5
Bisbee, AZ 856	03							Rep	orted: 26-Jul-12	13:32
	Client Sample ID: AN SVL Sample ID: W2		Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 12-Jul-12 ceived: 17-Jul-12 led By: VH	16:36
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	667	mg/L	7.50	1.18	25	W230131	AEW	07/24/12 13:46	D2





One Government Gu	ulch - PO Box 929 Ke	llogg ID 83837-0929			(208) 784	4-1258			Fax (208) 783-0891		
Freeport McMol	Ran - Copper Queen Branch	l			Proj	ect Name: Co	pper Quee	n Branch	n Sulfate Mitigati	ion Order	
36 West Highwa	ny 92							ween Branch Sulfate Mitigatio Work Order: W2G0366 Reported: 26-Jul-12 1 Sampled: 12-Jul-12 15 Received: 17-Jul-12 Sampled By: VH			
Bisbee, AZ 8560)3							Rep	13:32		
	Client Sample ID: COB SVL Sample ID: W2G		Water)	Sa	ample Report	Page 1 of 1		Re	ceived: 17-Jul-12	15:30	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ns by Ion Chromatograj	phy									
EPA 300.0	Sulfate as SO4	92.0	mg/L	3.00	0.47	10	W230131	AEW	07/24/12 14:16	D2	



Kirby Gray Technical Director



One Government G	ulch - PO Box 929 Ke	ellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Branch	l			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Highw	ay 92							Work (Order: W2G0360	<u>5</u>
Bisbee, AZ 856	03							Rep	13:32	
	Client Sample ID: COE SVL Sample ID: W2G	-	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 12-Jul-12 ceived: 17-Jul-12 led By: VH	09:09
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	39.5	mg/L	3.00	0.47	10	W230131	AEW	07/24/12 14:26	D1



Kirby Gray Technical Director



One Government G	ulch - PO Box 929	Kellogg ID 83837-	0929		(2	208) 784-1258		Fa	x (208) 783-089	01
			-		(-	,				
	Ran - Copper Queen Bran	nch				Project Nam	e: Copper Que		-	
36 West Highwa									ler: W2G03	
Bisbee, AZ 856	03							Report	ted: 26-Jul-12	2 13:32
Quality Contr	rol - BLANK Data									
Method	Analyte	Units	Result		MDL	Ν	4RL	Batch ID	Analyzed	Notes
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	< 0.30		0.05	0	.30	W230018	23-Jul-12	
	ons by Ion Chromatog									
EPA 300.0	Sulfate as SO4	mg/L	< 0.30		0.05		.30	W230028	23-Jul-12	
EPA 300.0	Sulfate as SO4	mg/L	<0.30		0.05	0	.30	W230131	24-Jul-12	
Quality Conti	rol - LABORATORY	CONTROL SA	AMPLE Data							
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
niong h T-	Chromotogenet									
EPA 300.0	Chromatography Sulfate as SO4	mg/L	10.3		10.0	103	90 - 110	W230018	23-Jul-12	
Dissolved Anio	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	mg/L	9.91		10.0	99.1	90 - 110	W230028	23-Jul-12	
EPA 300.0	Sulfate as SO4	mg/L	9.73		10.0	97.3	90 - 110	W230131	24-Jul-12	
0.10.0										
Quality Contr	rol - DUPLICATE Da	ta	Duplicate	2	Sample		RPD			
Method	Analyte	Units	Result		Result	RPD	Limit	Batch ID	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	264		272	2.8	20	W230018	23-Jul-12	D2
	ons by Ion Chromatog		522		5.45	2.2	20	W220020	22 L 1 12	5.4
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	533 655		545 667	2.3 1.9	20 20	W230028 W230131	23-Jul-12 24-Jul-12	D2 D2
EFA 500.0	Sunate as 504	nig/L	055		007	1.9	20	w230131	24-Jui-12	D2
Quality Contr	rol - MATRIX SPIKE	Data								
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	273	272	10.0	R > 4S	90 - 110	W230018	23-Jul-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	80.5	70.9	10.0	96.6	90 - 110	W230018	23-Jul-12	D2,1115 D2
Dissolved Anio	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	mg/L	544	545	10.0	R > 4S	90 - 110	W230028	23-Jul-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	182	171	10.0	107	90 - 110	W230028	23-Jul-12	D2
EPA 300.0	Sulfate as SO4	mg/L	667	667	10.0	R > 4S	90 - 110	W230131	24-Jul-12	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	19.3	8.60	10.0	107	90 - 110	W230131	24-Jul-12	-
		0								



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch 36 West Highway 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0366 Reported: 26-Jul-12 13:32

Notes and Definitions

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



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

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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: W2G0364 Reported: 25-Jul-12 12:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
EAST	W2G0364-01	Ground Water	09-Jul-12 10:04	VH	17-Jul-2012
PANAGAKAS	W2G0364-02	Ground Water	09-Jul-12 11:34	VH	17-Jul-2012
NOTEMAN	W2G0364-03	Ground Water	09-Jul-12 13:16	VH	17-Jul-2012
DUP07092012	W2G0364-04	Ground Water	09-Jul-12 13:16	VH	17-Jul-2012
NESS	W2G0364-05	Ground Water	10-Jul-12 11:22	VH	17-Jul-2012
DUP07102012	W2G0364-06	Ground Water	10-Jul-12 11:22	VH	17-Jul-2012
SWAN	W2G0364-07	Ground Water	10-Jul-12 13:26	VH	17-Jul-2012
BIMA	W2G0364-08	Ground Water	10-Jul-12 15:32	VH	17-Jul-2012
GARNER 635	W2G0364-09	Ground Water	11-Jul-12 13:43	VH	17-Jul-2012
EQB07132012	W2G0364-10	Other	13-Jul-12 13:22	VH	17-Jul-2012
FB07132012	W2G0364-11	Other	13-Jul-12 13:20	VH	17-Jul-2012
ROGERS 803	W2G0364-12	Ground Water	13-Jul-12 13:06	VH	17-Jul-2012
DUP07132012	W2G0364-13	Ground Water	13-Jul-12 13:17	VH	17-Jul-2012
COOPER C	W2G0364-14	Ground Water	11-Jul-12 15:43	VH	17-Jul-2012
EQB07112012	W2G0364-15	Other	11-Jul-12 15:39	VH	17-Jul-2012
DUP07112012	W2G0364-16	Ground Water	11-Jul-12 13:44	VH	17-Jul-2012
FB07102012	W2G0364-17	Other	10-Jul-12 10:45	VH	17-Jul-2012
EQB07102012	W2G0364-18	Other	10-Jul-12 10:46	VH	17-Jul-2012
PALMER	W2G0364-19	Ground Water	10-Jul-12 12:16	VH	17-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL. Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government Gul	Ich - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		Ι	Fax (208) 783-089	1
Freeport McMoR	an - Copper Queen Branch	l			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highway	y 92							Work C	rder: W2G036	54
Bisbee, AZ 8560	3							Repo	orted: 25-Jul-12	2 12:18
	Client Sample ID: EAS SVL Sample ID: W2G	-	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 09-Jul-12 eived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	14.2	mg/L	0.30	0.05		W230028	AEW	07/23/12 16:52	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Bran	nch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Highwa	ay 92							Work (Order: W2G0364	4
Bisbee, AZ 856	03							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: PA SVL Sample ID: W 2	NAGAKAS 2G0364-02 (Ground	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 09-Jul-12 ceived: 17-Jul-12 led By: VH	11:34
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	292	mg/L	15.0	2.35	50	W230028	AEW	07/23/12 17:02	D2

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Bra	nch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Highw	ay 92							Work (Order: W2G0364	1
Bisbee, AZ 856	03							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: No. SVL Sample ID: W	OTEMAN 2G0364-03 (Ground \	Water)	Sa	ample Report	t Page 1 of 1		Re	ampled: 09-Jul-12 ceived: 17-Jul-12 led By: VH	13:10
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatog	graphy								
EPA 300.0	Sulfate as SO4	265	mg/L	15.0	2.35	50	W230028	AEW	07/23/12 17:12	D2

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
36 West Highw	5	nch			Proj	ect Name: Co	opper Quee	Work (n Sulfate Mitigati Order: W2G0364	ŧ.
Bisbee, AZ 856	503							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: DL SVL Sample ID: W2	JP07092012 2G0364-04 (Ground V	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 09-Jul-12 ceived: 17-Jul-12 led By: VH	13:16
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	265	mg/L	15.0	2.35	50	W230028	AEW	07/23/12 17:23	D2

John Ken



One Government G	ulch - PO Box 929 Kel	logg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Branch				Proj	ect Name: Co	pper Quee	n Branch	n Sulfate Mitigati	ion Order
36 West Highw	ay 92							Work (Order: W2G0364	4
Bisbee, AZ 856	03							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: NESS SVL Sample ID: W2GC	-	Water)	Sa	imple Report	Page 1 of 1		Re	ampled: 10-Jul-12 ceived: 17-Jul-12 led By: VH	11:22
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	40.1	mg/L	3.00	0.47	10	W230028	AEW	07/23/12 17:33	D1

John Ken



One Government C	Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo 36 West Highw	oRan - Copper Queen Bran vay 92	nch			Proj	ect Name: Co	pper Quee		Sulfate Mitigati Order: W2G036 4	
Bisbee, AZ 856	603							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: DL SVL Sample ID: W2	JP07102012 2G0364-06 (Ground \	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 10-Jul-12 ceived: 17-Jul-12 led By: VH	11:22
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	39.2	mg/L	3.00	0.47	10	W230028	AEW	07/23/12 18:04	D1

John Ken



One Government Gu	lch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMoF	Ran - Copper Queen Branch	L			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highwa	y 92							Work O	rder: W2G036	64
Bisbee, AZ 8560	13							Repo	orted: 25-Jul-12	2 12:18
(Client Sample ID: SWA SVL Sample ID: W2G		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 10-Jul-12 eived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anior	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	19.4	mg/L	0.30	0.05		W230028	AEW	07/23/12 18:15	

John Ken



One Government G	ulch - PO Box 929 Kell	ogg ID 83837-0929			(208) 78	4-1258				
-	Ran - Copper Queen Branch				Proj	ect Name: Co	pper Quee		n Sulfate Mitigati	
36 West Highw Bisbee, AZ 856	5								Order: W2G036 4 orted: 25-Jul-12	
	Client Sample ID: BIMA SVL Sample ID: W2G0	-	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 10-Jul-12 ceived: 17-Jul-12 led By: VH	15:32
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatograp	hy								
EPA 300.0	Sulfate as SO4	301	mg/L	3.00	0.47	10	W230028	AEW	07/23/12 18:25	D2

John Ken



One Government Gu	lch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMoF	Ran - Copper Queen Bran	ch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Highwa	y 92							Work C	order: W2G036	4
Bisbee, AZ 8560	3							Repo	orted: 25-Jul-12	2 12:18
(Client Sample ID: GA SVL Sample ID: W2		Water)	Sa	mple Repor	t Page 1 of 1		Rec	mpled: 11-Jul-12 eeived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
bissolved Anion	is by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	37.7	mg/L	0.30	0.05		W230028	AEW	07/23/12 18:36	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258]	Fax (208) 783-089	1
Freeport McMo 36 West Highwa Bisbee, AZ 856	5	anch			Proj	ect Name: Co	pper Quee	Work C	Sulfate Mitigat Order: W2G036 orted: 25-Jul-12	4
	Client Sample ID: E SVL Sample ID: W	QB07132012 /2G0364-10 (Other)		Sa	mple Report	Page 1 of 1		Ree	ampled: 13-Jul-12 ceived: 17-Jul-12 led By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W230018	AEW	07/23/12 14:15	

John Ken



One Government Gu	Ilch - PO Box 929 Kel	logg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMol	Ran - Copper Queen Branch				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highwa	iy 92							Work C	order: W2G036	54
Bisbee, AZ 8560)3							Repo	orted: 25-Jul-12	2 12:18
	Client Sample ID: FB07 SVL Sample ID: W2G			Sa	ample Report	Page 1 of 1		Rec	mpled: 13-Jul-12 eeived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion (Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W230018	AEW	07/23/12 14:26	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Brar	nch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Highw	ay 92							Work (Order: W2G0364	4
Bisbee, AZ 856	03							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: RC SVL Sample ID: W2	OGERS 803 2G0364-12 (Ground)	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 13-Jul-12 ceived: 17-Jul-12 led By: VH	13:06
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	caphy								
EPA 300.0	Sulfate as SO4	171	mg/L	3.00	0.47	10	W230028	AEW	07/23/12 18:46	D2

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
1	Ran - Copper Queen Bra	nch			Proj	ect Name: Co	opper Quee		n Sulfate Mitigati	
36 West Highwa Bisbee, AZ 856	5								Order: W2G036 4 orted: 25-Jul-12	-
	Client Sample ID: DU SVL Sample ID: W2	JP07132012 2G0364-13 (Ground ¹	Water)	Si	ample Report	Page 1 of 1		Re	ampled: 13-Jul-12 ceived: 17-Jul-12 led By: VH	13:17
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	166	mg/L	3.00	0.47	10	W230028	AEW	07/23/12 19:07	D2

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
	Ran - Copper Queen Bra	anch			Proj	ect Name: Co	pper Quee		n Sulfate Mitigati Order: W2G0364	
36 West Highw Bisbee, AZ 856	5								orted: 25-Jul-12	-
	Client Sample ID: C SVL Sample ID: W	OOPER C /2G0364-14 (Ground V	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 17-Jul-12 led By: VH	15:43
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromato	graphy								
EPA 300.0	Sulfate as SO4	834	mg/L	30.0	4.70	100	W230028	AEW	07/23/12 19:17	D2

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258]	Fax (208) 783-089	1
Freeport McMo 36 West Highwa Bisbee, AZ 856	5	ranch			Proj	ect Name: Co	pper Quee	Work C	Sulfate Mitigat Order: W2G036 orted: 25-Jul-12	4
	Client Sample ID: E SVL Sample ID: V	EQB07112012 V2G0364-15 (Other)		Sa	mple Report	Page 1 of 1		Ree	ampled: 11-Jul-12 ceived: 17-Jul-12 led By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W230018	AEW	07/23/12 14:36	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMo	Ran - Copper Queen Bran	ch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Highw	ay 92							Work (Order: W2G0364	4
Bisbee, AZ 856	03							Rep	orted: 25-Jul-12	12:18
	Client Sample ID: DU SVL Sample ID: W2	P07112012 G0364-16 (Ground)	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 17-Jul-12 led By: VH	13:44
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	37.2	mg/L	1.50	0.24	5	W230028	AEW	07/24/12 10:53	D1

John Ken



One Government Gu	lch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMoF	Ran - Copper Queen Branch				Proj	ect Name: Co	opper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highwa	y 92							Work O	rder: W2G036	64
Bisbee, AZ 8560	13							Repo	orted: 25-Jul-12	2 12:18
(Client Sample ID: FB07 SVL Sample ID: W2G			Sa	ample Report	Page 1 of 1		Rec	mpled: 10-Jul-12 eived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion (Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W230018	AEW	07/23/12 15:07	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		I	Fax (208) 783-089	1
36 West Highwa	5	anch			Proj	ect Name: Co	opper Quee	Work C	Sulfate Mitigat	4
Bisbee, AZ 856	03							Repo	orted: 25-Jul-12	2 12:18
	Client Sample ID: E	-							mpled: 10-Jul-12 eived: 17-Jul-12	
	SVL Sample ID: W	2G0364-18 (Other)		Sa	ample Report	Page 1 of 1		Sampl	ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W230018	AEW	07/23/12 15:18	

John Ken



One Government Gul	Ich - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMoR	an - Copper Queen Branch				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Highway	y 92							Work C	Order: W2G036	64
Bisbee, AZ 8560	3							Repo	orted: 25-Jul-12	2 12:18
	Client Sample ID: PAL SVL Sample ID: W2G		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 10-Jul-12 ceived: 17-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatogra	ohy								
EPA 300.0	Sulfate as SO4	16.6	mg/L	0.30	0.05		W230028	AEW	07/23/12 19:38	

John Ken



Dne Government Gulch - PO	Box 929 Kellog	g ID 83837-0929)		(.	208) 784-1258		Fax (208) 783-0891		
Freeport McMoRan - Co 36 West Highway 92 Bisbee, AZ 85603	opper Queen Branch					Project Nam	e: Copper Que	Work Ord	ulfate Mitiga ler: W2G036 ed: 25-Jul-12	64
Quality Control - BL	ANK Data									
Method	Analyte	Units	Result		MDL	N	IRL	Batch ID	Analyzed	Notes
Anions by Ion Chrome EPA 300.0 Sub	atography fate as SO4	mg/L	<0.30		0.05	0.	30	W230018	23-Jul-12	
Dissolved Anions by Id EPA 300.0 Sult	on Chromatography fate as SO4	mg/L	<0.30		0.05	0.	30	W230028	23-Jul-12	
Quality Control - LA	BORATORY CON	FROL SAM	PLE Data							
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chrom EPA 300.0 Sult	atography fate as SO4	mg/L	10.3		10.0	103	90 - 110	W230018	23-Jul-12	
Dissolved Anions by I EPA 300.0 Sult	on Chromatography fate as SO4	mg/L	9.91		10.0	99.1	90 - 110	W230028	23-Jul-12	
Quality Control - DU	JPLICATE Data									
Method	Analyte	Units	Duplicate Result	9	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Anions by Ion Chrome EPA 300.0 Sub	atography fate as SO4	mg/L	264		272	2.8	20	W230018	23-Jul-12	D2
Dissolved Anions by I EPA 300.0 Sult	on Chromatography fate as SO4	mg/L	533		545	2.3	20	W230028	23-Jul-12	D2
Quality Control - MA	ATRIX SPIKE Data									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Anions by Ion Chrom EPA 300.0 Sult	atography fate as SO4	mg/L	273	272	10.0	R > 4S	90 - 110	W230018	23-Jul-12	D2,M3
	fate as SO4	mg/L	80.5	70.9	10.0	96.6	90 - 110	W230018	23-Jul-12	D2
Dissolved Anions by I EPA 300.0 Sult	on Chromatography fate as SO4	mg/L	544	545	10.0	R > 4S	90 - 110	W230028	23-Jul-12	D2,M3
	fate as SO4	mg/L	182	171	10.0	107	90 - 110	W230028	23-Jul-12	D2,1015 D2



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Copper Queen Branch 36 West Highway 92 Bisbee, AZ 85603 Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0364 Reported: 25-Jul-12 12:18

Notes and Definitions

D1 Sample required dilution due to matrix.	
D2 Sample required dilution due to high concentration of target analyte.	
M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LC acceptable.	S was
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="" is="" less="" limit<="" reporting="" result="" td="" than="" the=""><td></td></rl>	
MRL Method Reporting Limit	
MDL Method Detection Limit	
N/A Not Applicable	



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

 Freeport McMoRan - Copper Queen Branch
 Project Name: Copper Queen Branch Sulfate Mitigation Order

 36 West Highway 92
 Work Order: W2G0362

 Bisbee, AZ 85603
 Reported: 25-Jul-12 12:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMD-2008-106L	W2G0362-01	Ground Water	13-Jul-12 10:20	CLS	17-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		Fax (208) 783-0891			
Freeport McMc	Ran - Copper Queen Brar	nch			Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order	
36 West Highw	ay 92							Work (Order: W2G0362	2	
Bisbee, AZ 856	03							Rep	orted: 25-Jul-12	12:16	
	Client Sample ID: BMD-2008-106L SVL Sample ID: W2G0362-01 (Ground Water)					Page 1 of 1		Re	ampled: 13-Jul-12 ceived: 17-Jul-12 led By: CLS	10:20	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ons by Ion Chromatog	raphy									
EPA 300.0	Sulfate as SO4	545	mg/L	15.0	2.35	50	W230028	AEW	07/23/12 16:20	D2	

John Ken



One Governm	nent Gulch - PO Box 929	Kellogg ID 83837-	0929		(20)	8) 784-1258		Fax (208) 783-0891			
-	AcMoRan - Copper Queen Bran lighway 92 Z 85603	ch]	Project Nam	e: Copper Que	Work Orc	ulfate Mitiga ler: W2G036 ed: 25-Jul-12	52	
Quality C	Control - BLANK Data										
Method	Analyte	Units	Resul	lt	MDL	Ν	1RL	Batch ID	Analyzed	Notes	
Dissolved A	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	<0.30)	0.05	0	.30	W230028	23-Jul-12		
Quality (Control - LABORATORY (CONTROL SA	MPLE Data								
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	raphy mg/L	9.91		10.0	99.1	90 - 110	W230028	23-Jul-12		
Quality C	Control - DUPLICATE Dat	a Units	Duplica Result	te	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes	
			Kesun		Result	Id D	Linit	Duten ID	ThuryZou	10005	
Dissolved A EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4	aphy mg/L	533		545	2.3	20	W230028	23-Jul-12	D2	
Quality C	Control - MATRIX SPIKE	Data									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0 EPA 300.0	Anions by Ion Chromatogr Sulfate as SO4 Sulfate as SO4	mg/L mg/L	544 182	545 171	10.0 10.0	R > 4S 107	90 - 110 90 - 110	W230028 W230028	23-Jul-12 23-Jul-12	D2,M3 D2	
			Note	s and Defi	nitions						
D2	Sample required dilution due	e to high concent	ration of target a	analyte.							
M3	The spike recovery value is u acceptable.	inusable since th	e analyte concer	ntration in th	e sample is dispro	oportionate to	o spike level. T	he LCS was			
LCS	Laboratory Control Sample (Blank Spike)									
RPD	Relative Percent Difference										
UDL	A result is less than the detec	ction limit									
R > 4S	% recovery not applicable, sa	ample concentra	tion more than f	our times gre	eater than spike le	evel					
<rl< td=""><td>A result is less than the report</td><td>rting limit</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></rl<>	A result is less than the report	rting limit									
MRL	Method Reporting Limit										
MDL	Method Detection Limit										
N/A	Not Applicable										



One Government Gulch - PO Box 929

Freeport McMoRan - Bisbee

36 West Hwy 92

Bisbee, AZ 85603

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0301 Reported: 24-Jul-12 14:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
BMO-2010-1M	W2G0301-01	Ground Water	09-Jul-12 11:30	CLS	13-Jul-2012
TM-16	W2G0301-02	Ground Water	09-Jul-12 12:15	CLS	13-Jul-2012
BMO-2010-2M	W2G0301-03	Ground Water	09-Jul-12 13:05	CLS	13-Jul-2012
TM-6	W2G0301-04	Ground Water	09-Jul-12 14:35	CLS	13-Jul-2012
BMO-2008-6M	W2G0301-05	Ground Water	10-Jul-12 06:50	CLS	13-Jul-2012
BMO-2008-6B	W2G0301-06	Ground Water	10-Jul-12 07:45	CLS	13-Jul-2012
BMO-2008-5M	W2G0301-07	Ground Water	10-Jul-12 09:25	CLS	13-Jul-2012
BMO-2008-5B	W2G0301-08	Ground Water	10-Jul-12 10:10	CLS	13-Jul-2012
BMO-2008-3B	W2G0301-09	Ground Water	10-Jul-12 11:30	CLS	13-Jul-2012
TM-15	W2G0301-10	Ground Water	10-Jul-12 13:00	CLS	13-Jul-2012
TM-42	W2G0301-11	Ground Water	11-Jul-12 06:45	CLS	13-Jul-2012
BMO-2008-7M	W2G0301-12	Ground Water	11-Jul-12 08:20	CLS	13-Jul-2012
HOBAN	W2G0301-13	Ground Water	11-Jul-12 09:30	CLS	13-Jul-2012
TM-19A	W2G0301-14	Ground Water	11-Jul-12 12:40	CLS	13-Jul-2012
BMD-2008-13B	W2G0301-15	Ground Water	11-Jul-12 13:55	CLS	13-Jul-2012
BMD-2008-8M	W2G0301-16	Ground Water	12-Jul-12 09:10	CLS	13-Jul-2012
BMD-2008-8B	W2G0301-17	Ground Water	12-Jul-12 10:25	CLS	13-Jul-2012
BMD-2008-9M	W2G0301-18	Ground Water	12-Jul-12 12:20	CLS	13-Jul-2012
DUP 071212	W2G0301-19	Ground Water	12-Jul-12 09:10	CLS	13-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL. Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government G	e Government Gulch - PO Box 929 Kellogg ID 83837-0929					4-1258		Fax (208) 783-0891				
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order		
36 West Hwy 92	2							Work (Order: W2G030	1		
Bisbee, AZ 856	03							Rep	orted: 24-Jul-12	14:11		
	Client Sample ID: BMO-2010-1M SVL Sample ID: W2G0301-01 (Ground Water)					Page 1 of 1		Re	ampled: 09-Jul-12 ceived: 13-Jul-12 led By: CLS	11.30		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chroma	tography										

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		Fax (208) 783-0891				
Freeport McMo					Proje	ect Name: Co	pper Quee		Sulfate Mitigati			
36 West Hwy 9	2							Work (Order: W2G0301	1		
Bisbee, AZ 856	03							Rep	orted: 24-Jul-12	14:11		
	Client Sample ID: TM-16 SVL Sample ID: W2G0301-02 (Ground Water)					Page 1 of 1		Re	ampled: 09-Jul-12 ceived: 13-Jul-12 led By: CLS	12:15		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ons by Ion Chroma	atography										

John Ken



ne Government Gulch - PO Box 929 Kellogg ID 83837-0929					(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order		
36 West Hwy 92	2							Work C	Order: W2G030	1		
Bisbee, AZ 8560	03							Repo	orted: 24-Jul-12	14:11		
	Client Sample ID: BMO-2010-2M SVL Sample ID: W2G0301-03 (Ground Water)					Sample Report Page 1 of 1						
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromat	ography										
EPA 300.0	Sulfate as SO4	1030	mg/L	7.50	1.18	25	W229276	AEW	07/20/12 11:35	D2		





One Government G	e Government Gulch - PO Box 929 Kellogg ID 83837-0929				(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMc	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order		
36 West Hwy 9	2							Work O	rder: W2G030	1		
Bisbee, AZ 856	03							Repo	rted: 24-Jul-12	2 14:11		
Client Sample ID: TM-6 SVL Sample ID: W2G0301-04 (Ground Water)					ample Report	t Page 1 of 1		Rec	mpled: 09-Jul-12 eived: 13-Jul-12 ed By: CLS			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ons by Ion Chromatogra	phy										
EPA 300.0	Sulfate as SO4	33.5	mg/L	0.30	0.05		W229276	AEW	07/19/12 16:24			





One Government C	Gulch - PO Box 929	Kellogg ID 83837-0929		(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMo	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order	
36 West Hwy 9	92							Work (Order: W2G030	1	
Bisbee, AZ 856	603							Rep	orted: 24-Jul-12	14:11	
	Client Sample ID: BMO-2008-6M SVL Sample ID: W2G0301-05 (Ground Water)					t Page 1 of 1		Re	ampled: 10-Jul-12 ceived: 13-Jul-12 led By: CLS		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved Anio	ons by Ion Chroma	tography									
EPA 300.0	Sulfate as SO4	4 208	mg/L	3.00	0.47	10	W229276	AEW	07/20/12 11:45	D2	

John Ken



One Government G	ulch - PO Box 929 Ke		(208) 78	4-1258		Fax (208) 783-0891				
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 92	2							Work O	rder: W2G030	1
Bisbee, AZ 856	03							Repo	rted: 24-Jul-12	2 14:11
	Client Sample ID: BMO-2008-6B SVL Sample ID: W2G0301-06 (Ground Water)					Page 1 of 1		Rec	mpled: 10-Jul-12 eived: 13-Jul-12 ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	21.9	mg/L	0.30	0.05		W229276	AEW	07/19/12 16:45	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		1	Fax (208) 783-0891	
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Hwy 9	2							Work C	Order: W2G0301	l
Bisbee, AZ 856	03							Rep	orted: 24-Jul-12	14:11
	Client Sample ID: SVL Sample ID:	BMO-2008-5M W2G0301-07 (Ground \	Water)	Sa	ample Report	Page 1 of 1		Re	mpled: 10-Jul-12 ceived: 13-Jul-12 ed By: CLS	09:25
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromat	tography								
EPA 300.0	Sulfate as SO4	135	mg/L	3.00	0.47	10	W229276	AEW	07/20/12 11:56	D2

John Ken



One Government C	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-0891	l
Freeport McMo	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Hwy 9	2							Work C	Order: W2G030	1
Bisbee, AZ 856	503							Rep	orted: 24-Jul-12	14:11
	Client Sample ID: SVL Sample ID:	BMO-2008-5B W2G0301-08 (Ground \	Water)	Sa	ample Report	t Page 1 of 1		Re	ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromat	tography								
EPA 300.0	Sulfate as SO4	218	mg/L	3.00	0.47	10	W229276	AEW	07/20/12 12:06	D2

John Ken



One Government C	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-0891	
Freeport McMo	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Hwy 9	2							Work C	Order: W2G030	1
Bisbee, AZ 856	503							Rep	orted: 24-Jul-12	14:11
	Client Sample ID: SVL Sample ID:	BMO-2008-3B W2G0301-09 (Ground \	Water)	S	ample Report	Page 1 of 1		Re	ampled: 10-Jul-12 ceived: 13-Jul-12 led By: CLS	11:30
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromat	tography								
EPA 300.0	Sulfate as SO4	4 150	mg/L	3.00	0.47	10	W229276	AEW	07/20/12 12:17	D2

John Ken



One Government	Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		F	ax (208) 783-089	1
Freeport McN	IoRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Orde
36 West Hwy	92							Work O	rder: W2G030	1
Bisbee, AZ 8	5603							Repo	rted: 24-Jul-12	2 14:11
	Client Sample ID: SVL Sample ID:	TM-15 W2G0301-10 (Ground V	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 10-Jul-12 eived: 13-Jul-12 ed By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
)issolved An	ions by Ion Chroma	tography								
EPA 300.0	Sulfate as SO4	4 14.9	mg/L	0.30	0.05		W229276	AEW	07/19/12 17:48	

John Ken



One Government Gu	llch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258			Fax (208) 783-0891	
Freeport McMoI					Proj	ect Name: Co	pper Quee		Sulfate Mitigati	
36 West Hwy 92								Work (Order: W2G0301	l
Bisbee, AZ 8560)3							Rep	orted: 24-Jul-12	14:11
(Client Sample ID: TN SVL Sample ID: W 2	//-42 2G0301-11 (Ground V	Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 13-Jul-12 led By: CLS	06:45
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anior	ns by Ion Chromatog	raphy								

John Ken



One Government Gu	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		Η	Fax (208) 783-089	1		
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order		
36 West Hwy 92	2							Fax (208) 783-0891 r Queen Branch Sulfate Mitigation Or Work Order: W2G0301 Reported: 24-Jul-12 14:11 Sampled: 11-Jul-12 08:20 Received: 13-Jul-12 Sampled By: CLS Batch Analyst Analyzed No				
Bisbee, AZ 8560	03							Repo	orted: 24-Jul-12	14:11		
	Client Sample ID: BN SVL Sample ID: W2	10-2008-7M 2G0301-12 (Ground	Water)	Sa	ample Report	Page 1 of 1		Rec	eived: 13-Jul-12			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromatog	raphy										
EPA 300.0	Sulfate as SO4	28.1	mg/L	0.30	0.05		W229276	AEW	07/19/12 18:20			

John Ken



One Government Guld	ch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMoRa	an - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Hwy 92		isbee Sample ID: HOBAN						Work (Order: W2G0301	l
Bisbee, AZ 85603								Rep	orted: 24-Jul-12	14:11
	-		Water)	Sa	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 13-Jul-12 led By: CLS	09:30
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anions	s by Ion Chromatog	graphy								
EPA 300.0	Sulfate as SO4	1110	mg/L	7.50	1.18	25	W229276	AEW	07/20/12 12:48	D2

John Ken



One Government Gu	Ilch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		-	Fax (208) 783-0891	
Freeport McMol 36 West Hwy 92 Bisbee, AZ 8560	2				Proj	ect Name: Co	pper Quee	Work (Sulfate Mitigati Order: W2G0301 orted: 24-Jul-12	l
	Client Sample ID: TM SVL Sample ID: W2		Water)	S	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 13-Jul-12 led By: CLS	12:40
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogra	aphy								
EPA 300.0	Sulfate as SO4	63.7	mg/L	1.50	0.24	5	W229276	AEW	07/20/12 13:20	D2

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McM 36 West Hwy 9					Proj	ect Name: Co	pper Quee		Sulfate Mitigati	
Bisbee, AZ 850	603							Rep	orted: 24-Jul-12	14:11
	Client Sample ID: SVL Sample ID:	BMD-2008-13B W2G0301-15 (Ground V	Vater)	Sa	ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 13-Jul-12 led By: CLS	13:55
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromat	tography								
EPA 300.0	Sulfate as SO4	1080	mg/L	7.50	1.18	25	W229276	AEW	07/20/12 13:33	D2

John Ken



One Government Gu	Ilch - PO Box 929 k	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-0891	
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Hwy 92	!							Work C	Order: W2G030	1
Bisbee, AZ 8560)3							Rep	orted: 24-Jul-12	14:11
	Client Sample ID: BM SVL Sample ID: W2		Water)	Sa	ample Report	t Page 1 of 1		Re	ampled: 12-Jul-12 ceived: 13-Jul-12 led By: CLS	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogra	aphy								
EPA 300.0	Sulfate as SO4	73.1	mg/L	1.50	0.24	5	W229276	AEW	07/20/12 13:43	D2

John Ken



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Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	me: Copper Queen Branch Sulfate Mitigation Ord						
36 West Hwy 92	2						Work Order: W2G0301 Reported: 24-Jul-12 14:1 Sampled: 12-Jul-12 10:25 Received: 13-Jul-12 Sampled By: CLS						
Bisbee, AZ 8560)3							Rep	orted: 24-Jul-12	14:11			
	Client Sample ID: SVL Sample ID:	BMD-2008-8B W2G0301-17 (Ground V	Vater)	S	ample Report	Page 1 of 1		Re	ceived: 13-Jul-12				
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes			
Dissolved Anio	ns by Ion Chromat	ography											
EPA 300.0	Sulfate as SO4	1440	mg/L	15.0	2.35	50	W229276	AEW	07/20/12 13:54	D2			

John Ken



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Freeport McMoR	an - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Hwy 92			Project Name: Copper Queen Branch Sulfate Mi Work Order: W20 Reported: 24-J 008-9M Sampled: 12-J 01-18 (Ground Water) Sample Report Page 1 of 1 Sampled By: CLS						Order: W2G030	1
Bisbee, AZ 85603	3							Rep	orted: 24-Jul-12	14:11
	Slient Sample ID: BI SVL Sample ID: W		Water)	Sa	ample Report	t Page 1 of 1		Re	ceived: 13-Jul-12	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatog	graphy								





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Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order		
36 West Hwy 92	2							Work (Order: W2G030	1		
Bisbee, AZ 8560	03							Rep	orted: 24-Jul-12	14:11		
	Client Sample ID: DUP 071212 SVL Sample ID: W2G0301-19 (Ground Water)				ample Report	Page 1 of 1		Re	ampled: 12-Jul-12 ceived: 13-Jul-12 led By: CLS	09:10		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes		
Dissolved Anio	ns by Ion Chromat	ography										
EPA 300.0	Sulfate as SO4	73.2	mg/L	1.50	0.24	5	W229276	AEW	07/20/12 14:15	D2		

John Ken



One Governm	rrnment Gulch - PO Box 929 Kellogg ID 83837-0929				(20	08) 784-1258		Fax (208) 783-0891			
Freeport M 36 West H Bisbee, AZ	-					Project Nam	ne: Copper Que	Work Orc	ulfate Mitiga ler: W2G030 ed: 24-Jul-12)1	
Quality (Control - BLANK Data										
Method	Analyte	Units	Resul	lt	MDL	Ν	/IRL	Batch ID	Analyzed	Notes	
Dissolved EPA 300.0	Anions by Ion Chromatog Sulfate as SO4	r aphy mg/L	<0.30)	0.05	0	.30	W229276	19-Jul-12		
Quality (Control - LABORATORY	CONTROL SA	AMPLE Data								
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved . EPA 300.0	Anions by Ion Chromatog Sulfate as SO4	raphy mg/L	10.1		10.0	101	90 - 110	W229276	19-Jul-12		
- •	Control - DUPLICATE Da		Duplica	ite	Sample		RPD	D-t-h ID	Angland	Neter	
Method	Analyte	Units	Result		Result	RPD	Limit	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0	Anions by Ion Chromatog Sulfate as SO4	raphy mg/L	158		161	2.4	20	W229276	19-Jul-12	D2	
Quality (Control - MATRIX SPIKE	2 Data									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved A EPA 300.0 EPA 300.0	Anions by Ion Chromatog Sulfate as SO4 Sulfate as SO4	mg/L mg/L	168 444	161 449	10.0 10.0	R > 4S R > 4S	90 - 110 90 - 110	W229276 W229276	19-Jul-12 20-Jul-12	D2,M3 D2,M3	
			Note	s and Defi	nitions						
D2	Sample required dilution du	e to high concent	tration of target	analyte.							
M3	The spike recovery value is acceptable.	unusable since th	ne analyte conce	ntration in th	e sample is disp	roportionate to	o spike level. T	he LCS was			
LCS	Laboratory Control Sample	(Blank Spike)									
RPD	Relative Percent Difference										
UDL	A result is less than the dete	ection limit									
R > 4S	% recovery not applicable,	sample concentra	tion more than f	our times gro	eater than spike l	evel					
<rl< td=""><td>A result is less than the repo</td><td>orting limit</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></rl<>	A result is less than the repo	orting limit									
MRL	Method Reporting Limit										
MDL	Method Detection Limit										
N/A	Not Applicable										



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Freeport McMoRan - BisbeeProject Name: Copper Queen Branch Sulfate Mitigation Order36 West Hwy 92Work Order:W2G0296Bisbee, AZ 85603Reported:16-Jul-12 11:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DODSON	W2G0296-01	Ground Water	11-Jul-12 10:34	13-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



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Freeport McMoR	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	ion Order
36 West Hwy 92								Work (Order: W2G0296	5
Bisbee, AZ 8560	13							Rep	orted: 16-Jul-12	11:49
	Client Sample ID: DODSON SVL Sample ID: W2G0296-01 (Ground Water)				ample Report	Page 1 of 1		Re	ampled: 11-Jul-12 ceived: 13-Jul-12 led By:	10:34
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	is by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	54.0	mg/L	3.00	0.47	10	W228327	AEW	07/13/12 14:35	D2

John Ken



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Freeport M 36 West H Bisbee, A2	-				Р	roject Nam	e: Copper Que	Work Ord	ulfate Mitiga ler: W2G029 ed: 16-Jul-12	96	
Quality (Control - BLANK Data										
Method	Analyte	Units	Result		MDL	Ν	ſRL	Batch ID	Analyzed	Notes	
Dissolved EPA 300.0	Anions by Ion Chromat Sulfate as SO4	tography mg/L	<0.30		0.05	0.	.30	W228327	13-Jul-12		
Quality (Control - LABORATO	RY CONTROL SA	MPLE Data								
Method	Analyte	Units	LCS Result		LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved . EPA 300.0	Anions by Ion Chromat Sulfate as SO4	tography mg/L	10.4		10.0	104	90 - 110	W228327	13-Jul-12		
Quality (Control - DUPLICATE	Data									
Method	Analyte	Units	Duplicate Result	9	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes	
Dissolved A	Anions by Ion Chromat Sulfate as SO4	tography mg/L	54.4		54.0	0.8	20	W228327	13-Jul-12	D2	
Quality (Control - MATRIX SPI	KE Data									
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes	
Dissolved A	Anions by Ion Chromat Sulfate as SO4	tography mg/L	65.3	54.0	10.0	R > 4S	90 - 110	W228327	13-Jul-12	D2,M3	
			Notes	and Defi	nitions						
D2	Sample required dilutior	due to high concent	ration of target a	nalyte.							
M3	The spike recovery valuation acceptable.	e is unusable since th	e analyte concen	tration in the	e sample is disproj	portionate to	spike level. T	ne LCS was			
LCS	Laboratory Control Sam	ple (Blank Spike)									
RPD	Relative Percent Differe										
UDL	A result is less than the	detection limit									
R > 4S	% recovery not applicab	le, sample concentrat	ion more than fo	ur times gre	ater than spike lev	el					
<rl< td=""><td>A result is less than the</td><td>reporting limit</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></rl<>	A result is less than the	reporting limit									
MRL	Method Reporting Limit	I									
MDL	Method Detection Limit										



One Government Gulch - PO Box 929

Freeport McMoRan - Bisbee

36 West Hwy 92

Bisbee, AZ 85603

Kellogg ID 83837-0929

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Fax (208) 783-0891

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0109 Reported: 16-Jul-12 12:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
AWC-03	W2G0109-01	Surface Water	05-Jul-12 08:47	ML	09-Jul-2012
AWC-04	W2G0109-02	Surface Water	05-Jul-12 09:04	ML	09-Jul-2012
AWC-02	W2G0109-03	Surface Water	05-Jul-12 09:46	VH	09-Jul-2012
AWC-05	W2G0109-04	Surface Water	05-Jul-12 14:23	VH	09-Jul-2012
BMO-2010-3M	W2G0109-05	Surface Water	05-Jul-12 15:19	ML	09-Jul-2012
BMO-2010-3B	W2G0109-06	Surface Water	05-Jul-12 12:11	ML	09-Jul-2012
WEED	W2G0109-07	Surface Water	05-Jul-12 16:18	ML	09-Jul-2012
DUP07052012	W2G0109-08	Surface Water	05-Jul-12 18:00	VH	09-Jul-2012
FB07052012	W2G0109-09	Surface Water	05-Jul-12 14:46	ML	09-Jul-2012
EQB07052012	W2G0109-10	Surface Water	05-Jul-12 14:49	ML	09-Jul-2012
MCCONNELL 265	W2G0109-11	Surface Water	06-Jul-12 11:18	ML	09-Jul-2012
RAMIREZ	W2G0109-12	Surface Water	06-Jul-12 13:56	ML	09-Jul-2012
EPPELE	W2G0109-13	Surface Water	06-Jul-12 10:22	VH	09-Jul-2012
RAY	W2G0109-14	Surface Water	06-Jul-12 11:29	VH	09-Jul-2012
FB07062012	W2G0109-15	Surface Water	06-Jul-12 13:28	VH	09-Jul-2012
EQB07062012	W2G0109-16	Surface Water	06-Jul-12 13:29	VH	09-Jul-2012
BANKS 986	W2G0109-17	Surface Water	06-Jul-12 14:00	VH	09-Jul-2012
DUP07062012	W2G0109-18	Surface Water	06-Jul-12 14:00	VH	09-Jul-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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

Default Cooler	(Received Temperature:	18.6°C)				
Labnumber	Container	Client ID	Labnumber	Container	Client ID	
W2G0109-01 A	Filtered Raw HDPE	AWC-03	W2G0109-02 A	Filtered Raw HDPE	AWC-04	
W2G0109-03 A	Filtered Raw HDPE	AWC-02	W2G0109-04 A	Filtered Raw HDPE	AWC-05	
W2G0109-05 A	Filtered Raw HDPE	BMO-2010-3M	W2G0109-06 A	Filtered Raw HDPE	BMO-2010-3B	
W2G0109-07 A	Filtered Raw HDPE	WEED	W2G0109-08 A	Filtered Raw HDPE	DUP07052012	
W2G0109-09 B	Raw HDPE	FB07052012	W2G0109-10 B	Raw HDPE	EQB07052012	
W2G0109-11 A	Filtered Raw HDPE	MCCONNELL 265	W2G0109-12 A	Filtered Raw HDPE	RAMIREZ	
W2G0109-13 A	Filtered Raw HDPE	EPPELE	W2G0109-14 A	Filtered Raw HDPE	RAY	
W2G0109-15 B	Raw HDPE	FB07062012	W2G0109-16 B	Raw HDPE	EQB07062012	
W2G0109-17 A	Filtered Raw HDPE	BANKS 986	W2G0109-18 A	Filtered Raw HDPE	DUP07062012	



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Freeport McMoR	an - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigati	on Order	
36 West Hwy 92								Work (Order: W2G0109	1	
Bisbee, AZ 8560	3						Rep	orted: 16-Jul-12	12:14		
	Client Sample ID: AWC-03 SVL Sample ID: W2G0109-01 (Surface Water)				mple Report	Page 1 of 1		Re	ampled: 05-Jul-12 ceived: 09-Jul-12 led By: ML	08:47	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
	Analyte s by Ion Chromatos		Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	

John Ken



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Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	order: W2G010	9
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: AW SVL Sample ID: W2	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 05-Jul-12 eeived: 09-Jul-12 ed By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	28.2	mg/L	0.30	0.05		W228180	AEW	07/11/12 16:33	

John Ken



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Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 92	2							Work C	order: W2G010	9
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: AV SVL Sample ID: W2	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 05-Jul-12 eeived: 09-Jul-12 ed By: VH		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogi	raphy								
EPA 300.0	Sulfate as SO4	10.1	mg/L	0.30	0.05		W228180	AEW	07/11/12 16:43	

John Ken



One Government Gu	Ilch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		Η	Fax (208) 783-089	1
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 92								Work C	order: W2G010	9
Bisbee, AZ 8560)3							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: AW SVL Sample ID: W2	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 05-Jul-12 eeived: 09-Jul-12 ed By: VH		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogr	aphy								
EPA 300.0	Sulfate as SO4	19.1	mg/L	0.30	0.05		W228180	AEW	07/11/12 16:53	

John Ken



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Freeport McMo	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 9	92							Work C	rder: W2G010	19
Bisbee, AZ 856	603							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: BM SVL Sample ID: W2	Water)	Sa	ample Report	t Page 1 of 1		Rec	mpled: 05-Jul-12 eeived: 09-Jul-12 ed By: ML		
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	10.3	mg/L	0.30	0.05		W228196	AEW	07/11/12 18:42	





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Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy 92	2							Work O	rder: W2G010	19
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: BMC SVL Sample ID: W2G		Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 05-Jul-12 eeived: 09-Jul-12 ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatogra	phy								
EPA 300.0	Sulfate as SO4	15.7	mg/L	0.30	0.05		W228196	AEW	07/11/12 19:12	

John Ken



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Freeport McM	oRan - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Order
36 West Hwy	92							Work O	rder: W2G010	9
Bisbee, AZ 85	603							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: V SVL Sample ID: V	/EED /2G0109-07 (Surface	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 05-Jul-12 eived: 09-Jul-12 ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Ani	ons by Ion Chromato	graphy								
EPA 300.0	Sulfate as SO4	12.9	mg/L	0.30	0.05		W228196	AEW	07/11/12 19:21	

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Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitiga	tion Orde
36 West Hwy 9	2							Work C	Order: W2G010	9
Bisbee, AZ 856	603							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: SVL Sample ID:	W2G0109-08 (Surface \	Water)	Sa	mple Report	Page 1 of 1		Rec	mpled: 05-Jul-12 ceived: 09-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ons by Ion Chromat	tography								

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One Government Gu	ulch - PO Box 929 Ke	llogg ID 83837-0929			(208) 78	4-1258		Η	Fax (208) 783-089	1
Freeport McMol	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	order: W2G010	9
Bisbee, AZ 8560)3							Repo	orted: 16-Jul-12	12:14
	Client Sample ID: FB0 SVL Sample ID: W2G		Water)	Sa	mple Repor	t Page 1 of 1		Rec	mpled: 05-Jul-12 eeived: 09-Jul-12 ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion (Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W228238	AEW	07/12/12 12:00	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258]	Fax (208) 783-089	1
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	Order: W2G010	9
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: EC SVL Sample ID: W2	B07052012 G0109-10 (Surface	Water)	Sa	mple Repor	t Page 1 of 1		Ree	mpled: 05-Jul-12 ceived: 09-Jul-12 ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion (Chromatography									
EPA 300.0		< 0.30	mg/L	0.30	0.05		W228238	AEW	07/12/12 12:10	

John Ken



One Government (Gulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258			Fax (208) 783-0891	
Freeport McM 36 West Hwy					Proje	ect Name: Co	pper Quee		n Sulfate Mitigati Order: W2G0109	
Bisbee, AZ 85	603							Rep	orted: 16-Jul-12	12:14
	-	MCCONNELL 265 W2G0109-11 (Surface V	Nater)	Sa	ample Report	Page 1 of 1		Re	ampled: 06-Jul-12 ceived: 09-Jul-12 led By: ML	11:18
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
	Analyte		Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	order: W2G010	9
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: R SVL Sample ID: W	AMIREZ 2G0109-12 (Surface	Water)	Sa	mple Repor	t Page 1 of 1		Rec	mpled: 06-Jul-12 ceived: 09-Jul-12 ed By: ML	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	raphy								
EPA 300.0	Sulfate as SO4	8.97	mg/L	0.30	0.05		W228196	AEW	07/11/12 19:51	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 784	4-1258		I	Fax (208) 783-089	1
Freeport McMo					Proj	ect Name: Co	pper Quee		Sulfate Mitiga	
36 West Hwy 9	2							Work C	Order: W2G010	9
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: E SVL Sample ID: W	PPELE 2G0109-13 (Surface	Water)	Sa	ample Report	Page 1 of 1		Rec	mpled: 06-Jul-12 ceived: 09-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anio	ns by Ion Chromatog	graphy								
EPA 300.0	Sulfate as SO4	18.8	mg/L	0.30	0.05		W228196	AEW	07/11/12 20:21	

John Ken



One Government Gu	ulch - PO Box 929 K	ellogg ID 83837-0929			(208) 784	4-1258		1	Fax (208) 783-0891	
Freeport McMoF					Proj	ect Name: Co	pper Quee		Sulfate Mitigati	
36 West Hwy 92 Bisbee, AZ 8560									Order: W2G010 9 orted: 16-Jul-12	
(Client Sample ID: RAY SVL Sample ID: W2G		Water)	Si	ample Report	Page 1 of 1		Re	ampled: 06-Jul-12 ceived: 09-Jul-12 led By: VH	11:29
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
0:ll	ns by Ion Chromatogra	nhy								
Dissolved Anior	us by fon Chromatogra	pny								





One Government Gu	ulch - PO Box 929 Ke	ellogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	order: W2G010	9
Bisbee, AZ 8560	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: FB0 SVL Sample ID: W2G		Water)	Sa	mple Repor	t Page 1 of 1		Rec	mpled: 06-Jul-12 eeived: 09-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion (Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W228238	AEW	07/12/12 12:20	

John Ken



One Government G	ulch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258		I	Fax (208) 783-089	1
Freeport McMo	Ran - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	tion Order
36 West Hwy 92	2							Work C	order: W2G010	9
Bisbee, AZ 856	03							Repo	orted: 16-Jul-12	2 12:14
	Client Sample ID: EQ SVL Sample ID: W2		Water)	Sa	ample Repor	t Page 1 of 1		Rec	mpled: 06-Jul-12 eeived: 09-Jul-12 ed By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Anions by Ion	Chromatography									
EPA 300.0	Sulfate as SO4	< 0.30	mg/L	0.30	0.05		W228238	AEW	07/12/12 12:30	

John Ken



One Government Gul	lch - PO Box 929	Kellogg ID 83837-0929			(208) 78	4-1258			Fax (208) 783-0891	
Freeport McMoR	an - Bisbee				Proj	ect Name: Co	pper Quee	n Branch	Sulfate Mitigat	ion Order
36 West Hwy 92								Work (Order: W2G010	9
Bisbee, AZ 85603	3							Rep	orted: 16-Jul-12	12:14
	Client Sample ID: B SVL Sample ID: W	ANKS 986 2G0109-17 (Surface	Water)	S	ample Report	t Page 1 of 1		Re	ampled: 06-Jul-12 ceived: 09-Jul-12 led By: VH	
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Dissolved Anion	s by Ion Chromatog	graphy								
EPA 300.0	Sulfate as SO4	78.6	mg/L	1.50	0.24	5	W228196	AEW	07/12/12 10:55	D2

John Ken



One Government Gulch - PO Box 929 Kellogg ID 83837-0929				(208) 784-1258				Fax (208) 783-0891			
Freeport McMoRan - Bisbee					Project Name: Copper Queen Branch Sulfate Mitigation Order						
36 West Hwy 92				Work Order: W2G0109							
Bisbee, AZ 85603								Rep	orted: 16-Jul-12	12:14	
Client Sample ID: DUP07062012 SVL Sample ID: W2G0109-18 (Surface Water)				Sample Report Page 1 of 1				Sampled: 06-Jul-12 14:00 Received: 09-Jul-12 Sampled By: VH			
Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes	
Dissolved An	ions by Ion Chroma	tography									
	ions sy ion emonia	8 I J									

John Ken



One Government G	Sulch - PO Box 929	Kellogg ID 83837-	0929		(2)	08) 784-1258		Fax (208) 783-0891					
Freeport McMc 36 West Hwy 9 Bisbee, AZ 856	02					Project Nai	me: Copper Que	Work Ore	ulfate Mitiga der: W2G010 ted: 16-Jul-12)9			
Quality Cont	rol - BLANK Data												
Method	Analyte	Units	Res	ult	MDL		MRL	Batch ID	Analyzed	Notes			
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	<0.3	30	0.05		0.30	W228238	12-Jul-12				
	ons by Ion Chromat	ography											
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	<0.30 <0.30		0.05 0.05	0.30 0.30		W228180 W228196	11-Jul-12 11-Jul-12				
Quality Cont	rol - LABORATOR	Y CONTROL SA		1	LCS								
Method	Analyte	Units	LCS Result	LCS Result		% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes			
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	9.86		10.0	98.6	90 - 110	W228238	12-Jul-12				
	ons by Ion Chromat Sulfate as SO4		0.54		10.0	07.4	00 110	W220100	11 1 1 12				
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	9.74 9.86		10.0 10.0	97.4 98.6	90 - 110 90 - 110	W228180 W228196	11-Jul-12 11-Jul-12				
Quality Cont	rol - DUPLICATE I	Data											
Method	Analyte	Units	Duplic Result		Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes			
Anions by Ion EPA 300.0	Chromatography Sulfate as SO4	mg/L	4.46		4.45	0.1	20	W228238	12-Jul-12				
Dissolved Anio	ons by Ion Chromat	ography											
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	10.2 4.88		10.3 4.88	0.1 20 0.1 20		W228196 W228180	11-Jul-12 11-Jul-12				
Quality Cont	rol - MATRIX SPIF	KE Data	e-2	Con 1	e	0/							
Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes			
Anions by Ion	Chromatography												
EPA 300.0 EPA 300.0	Sulfate as SO4 Sulfate as SO4	mg/L mg/L	15.0 11.2	4.45 1.25	10.0 10.0	106 99.2	90 - 110 90 - 110	W228238 W228238	12-Jul-12 12-Jul-12				
Dissolved Anio	ons by Ion Chromat	ography											
EPA 300.0	Sulfate as SO4	mg/L	15.5	4.88	10.0	106	90 - 110	W228180	11-Jul-12				
EPA 300.0	Sulfate as SO4	mg/L	10.5	< 0.30	10.0	103	90 - 110	W228180	11-Jul-12				
EPA 300.0	Sulfate as SO4	mg/L	21.1	10.3	10.0	108	90 - 110	W228196	11-Jul-12				



Freeport McMoRan - Bisbee

36 West Hwy 92

Bisbee, AZ 85603

One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Project Name: Copper Queen Branch Sulfate Mitigation Order Work Order: W2G0109 Reported: 16-Jul-12 12:14

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< td=""><td>A result is less than the reporting limit</td></rl<>	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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



www.legend-group.com

18 September 2012

Jamie Johnson Clear Creek Associates 221 N. Court Ave. Ste. 101 Tucson, AZ 85701

RE: Water Testing

Laboratory Work Order No.: 2081219

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 08/15/12 10:30.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely, LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

P. Bin Memitt

P. Brian Merritt Client Services Representative (602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Туре	Date Sampled	Date Received
Howard Pre-Chlorination (Bisbee, AZ)	2081219-01	Drinking Water	Grab	08/14/12 14:00	08/15/12 10:30

Sample Condition Upon Receipt:

Temperature: 5.50 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times:	All holding times were met unless otherwise qualified.									
QA/QC Criteria:	All analyses met method requirements unless otherwise qualified.									
Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.										
Accreditation is app	licable only to the test methods specified on each scope of accreditation held by LEGEND.									
Comments:	There were no problems encountered during the processing of the samples, unless otherwise noted. All samples were analyzed on a "wet" basis unless designated as "dry weight".									

Report requested for single analyte 9/18/12.

Howard Pre-Chlorination (Bisbee, AZ) (2081219-01) Drinking Water (Grab) Sampled: 08/14/12 14:00 Received: 08/15/12 10:30												
Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes			
Legend Technical Services of Arizona, Inc.												
Inorganic Chemistry												
Sulfate	69.2	5.0	mg/L	1	B2H0482	08/16/12 08:00	08/16/12 08:00	EPA 300.0				

Inorganic Chemistry - Quality Control

Legend Technical Services of Arizona, Inc.

	_									
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B2H0482 - NO PREP										
Blank (B2H0482-BLK1)				Prepared	& Analyzed:	08/16/12				
Sulfate	<5.0	5.0	mg/L							
LCS (B2H0482-BS1)				Prepared	& Analyzed:	08/16/12				
Sulfate	19.9	5.0	mg/L	20.0		100	90-110			
LCS Dup (B2H0482-BSD1)		Р				08/16/12				
Sulfate	19.7	5.0	mg/L	20.0		98	90-110	1	20	
Matrix Spike (B2H0482-MS1)	Sour	Source: 2080845-01 Pr			& Analyzed:	08/16/12				
Sulfate	20.7	5.0	mg/L	20.0	<5.0	104	90-110			
Matrix Spike Dup (B2H0482-MSD1)	Sour	ce: 2080845	5-01	Prepared	& Analyzed:	08/16/12				
Sulfate	20.8	5.0	mg/L	20.0	<5.0	104	90-110	0.5	20	

Notes and Definitions

BLK Method Blank

LCS/Dup Laboratory Control Sample/Laboratory Fortified Blank/Duplicate

- MS/Dup Matrix Spike/Duplicate
- Dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Lican Creek Hissociates 221 Nutver Court Hivenue Stellol TWCson AZ \$5101 (stables) = 3222 (stobles) Priget Name Priget Name Contract Ben Daigneau Pro. No. Fra. Reutis 00 Report Stample Identification Stample Identification Date Time Sample Location Stables Stample Identification Sample Identification <td< th=""><th>lical Services, inc.</th><th></th><th>(602) 224 8101</th><th>2) 324-6100 . Eav (</th><th>appiy A7 85023 • (802) :</th><th>17631 N. 25th Avenue • Phoe</th><th>2081219</th></td<>	lical Services, inc.		(602) 224 8101	2) 324-6100 . Eav (appiy A7 85023 • (802) :	17631 N. 25th Avenue • Phoe	2081219
Citer Mare Addres Addres Addres Citer Creek Associates 221 N. Court Avenue Ste [0] Cite Control AZ S5701 (530)/022-3222 (50)/072 Project Name Project Name Project Name Project Name Project Name OC Report Project Name Project Name Project Name Project Name Project Name OC Report Project Name Project Name Project Name Project Name Project Name OC Report Project Name Project Name Project Name Project Name Project Name OC Report Project Name Project Name Project Name Project Name Project Name OC Report Project Name Project Name Project Name Project Name Project Name Project Name Weiner Project Name Project Name<	_/of/	Page of	34 • Fax (520) 327-0518	'06 • (520) 327-123	423 • Tucson, AZ 85706	4585 S, Palo Verde Rd, Ste 42	Print Clearly
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HOWARD PRE-CHLORINATION 8/14/12 1400 Bisbee, AZ X W 10 X V V V V V V V V V V V V V V V V V V		12/12/1		(A			
HOWARD PRE-CHLORINATION S/14/12 1400 Bisbee, AZ X W 10 V V V V V V V V V V V V V V V V V V		3.311		lae O		-	Wastewater F=Food
HOWARD PRE-CHLORINATION S/14/12 1400 Bisbee, AZ X W 10 V V V V V V V V V V V V V V V V V V			1 3 3 4 3 3 3	conta	Type		Dundwater
HOWARD PRE-CHLORINATION S/14/12 1400 Bisbee, AZ X W 10 V V V V V V V V V V V V V V V V V V	LAB	37///			of O of O	Sample Location	
TO ENSURE COMPLETION OF ANALYSIS; SAMPLES MUST BE RECEIVED AT LEAST 3 HOURS PRIOR TO THE HOLD TIME EXPIRATION TO ENSURE COMPLETION OF ANALYSIS; SAMPLES MUST BE RECEIVED AT LEAST 3 HOURS PRIOR TO THE HOLD TIME EXPIRATION Comments / Special Instructions: See attached, cun outside of hold time if necessary it or Brian - Methic Stiller To Brian - Methic Stiller SAMPLE CONDITION UPON RECEIPT (LIAD US) No: of Containers Dustody Sesis Y D D D D D D D D D				128362 24			Sample Identification
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Ample condition upon Receipt (Liab) Use) Relinguished BY Samples Received BY No. of Containers 0 Sampler Signature Date Temperature 5,5°C Sampler Signature Date Custody Seels Y 0 Sampler Signature Date	ule Silfered in Sield-8)	m - Motale Sill	Sarvist or Prin	if neces	old time 1	, run outside of he	ents / Special Instructions: See attached
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WHITE-LAB YELLOW-LAB PINK-CLIENT Sampler Printed Name Time Printed Name Time	Time	Tim		Time		Sampler Printed Name	

2561219

		Table 1		
		Summary of Analytes		
Parameter or Analyte	Analytical Method	Method Detection Limit	Reporting Limit	Holding Time from Collection
Microbiological			Statistics and the	
Heterotropic Plate Count	SM 9215 B	1.0 CFU/mL	1.0 CFU/mL	8 hours
 Sulfate Reducing Bacteria 	SM 9240 D	2.0 MPN/100 mL	2.0 MPN/100 mL	24 hours
Metals, Dissolved				
Calcium		0.136 mg/L	1.00 mg/L	
Iron		0.0168 mg/L	0.0500 mg/L	
Magnesium	EPA 200.7	0.172 mg/L	1.00 mg/L	Consenting
Manganese	LFA 200.7	0.00106 mg/L	0.0200 mg/L	6 months
Potassium		0.213 mg/L	1.00 mg/L	
Sodium		0.259 mg/L	1.00 mg/L	
Inorganic Chernicals				
Alkalinity	SM 2320 B	1.7 mg/L	10.0 mg/L	14 days
Chloride	EPA 300.0	0.303 mg/L	5.00 mg/L	28 days
Chlorine, Free	HACH 8021	N/A	0.04 mg/L	Analyze Immediately
Chlorine, Total/Residual	HACH 8167	0.012 mg/L	0.040 mg/L	Analyze Immediately
Hydrogen Sulfide	SM 4500 S2 H	0.0130 mg/L	0.0400 mg/L	24 hours
Solids, Total Dissolved	SM 2540 C	0.00 mg/L	1.00 mg/L	7 days
Solids, Total Suspended	SM 2540 D	N/A	1.00 mg/L	7 days
, Sulfate, Total	EPA 300.0	0.884 mg/L	5.00 mg/L	28 days
Sulfide, Dissolved	HACH 8131	0.0110 mg/L	0.0400 mg/L	
Total Organic Carbon	SM 5310 C	0.254 mg/L	0.500 mg/L	28 days
Turbidity	EPA 180.1	N/A	1.00 NTU	48 hours

only is necessary to measure H2S

S:\Projects\G K\055038_Copper Queen Branch Mitigation Order\DWS Mitigation\Private Wells\DATA by WELL\HOWARD\Hydrogen Sulfide Mitigation



September 20, 2012

Ben Daigneau Clear Creek Associates 221 N. Court Ave., Suite 101 Tucson, AZ 85701

TEL (520) 622-3222 FAX (520) 622-4040

RE: Well

Work Order No.: 1210547 Order Name: Private Well Installation #287008

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 09/19/2012 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

erri L. Harcia

Terri Garcia Technical Director

Client: Project:	Clear Creek Associates Well	Order: Private Well Installation #287008						
Work Order: 1210547 Date Received: 09/19/2012		Work Order Sample Summary						
Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time					

12I0547-01

Pionke 517

Ground Water

09/18/2012 1336

Client:	Clear Creek Associates	
Project:	Well	
Work Order:	12I0547	
Date Received:	09/19/2012	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: Project:	Clear Creek Well	Associates	Client Sample ID: Pionke 517 Collection Date/Time: 09/18/2012 1336									
Work Order: Lab Sample ID:	12I0547 12I0547-01		Matrix: Ground Water Order Name: Private Well Installation									
Analyses		Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst			
Anions by Ion Chrom	atography-E300											

1				- 1		 	· · · · · · · · · · · · · · · · · · ·	 						\				
	DPRIATE BOX		Sand de Course	~ ~					SAMPLE RECEIPT:			Total Containers/	Wet hee		Preservation Confirmation	Received Within Hold Time		
Y ANALYSIS RI	ND/OR CHECK THE APPRO			1d 1W 1d 5 91					INVOICE INFORMATION:	AccountYN					Custody Seals	COC / Labels Agree	Rist	J.M.
CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM R WORK ORDER # 12 T 05 4 7 DATE DATE PAGE OF OF	CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX	Lorst Cases Verse Lorst C Verse Lo	D Panyoss ברה D אין	м 02					REPORT REQUIREMENTS:	- I. Routine Report	II. Report (includes DUP, MS, MSD, as required, may be Bill to:	charged as samples) III. Date Validation Revort		COMMEN	Compliance Analysis: 🗍 Yes 📋 No ADEO Formes	SUL	t have	C excluse
CHAIN OF CUSTOD	S		114W2 ☐ 114W2 ☐ 154/254 2/8560 (0)equie 018auicz 152/8520 152/8520 152/8520 154/10 15	9					TURNAROUND REQUIREMENTS:	Standard (approx. 10 days)*	Next Day2 Day5 Day*	Email Preliminary Results To:	* Working Days	LEGEND	DW = DRINKINÇ WATER		= SOIL = STORMWATER	WW = WASTEWATER
Suite 104 TURNE	721/10/1400 # 2.870	eau Le Associates Livenue, ste 101	PHONE 220/627-2024-64X	N										RECEIVED BY:			JANIURIES, INC.	
2445 N. Coyote Drive, Suite 104 Tucson, Arizona 85745 (520) 882-5880 Fax: (520) 882-9788 Tu E N E E www.turnerlabs.com	PROJECT NAME PYYORLE WELL INSTALLED # 287008	CONTACT NAME BEN DOUGNERU COMPANY NAME <u>Clear Creek Associates</u> ADDRESS 221 N. COURT AVENUE, STE H	SAMPLER'S SIGNATURE	17 9/18/12					1. RELINQUISHED BY: 2.	Jan Ol	Printed Name	00	7/18/12 1426 Date/Time	3. RELINQUISHED BY: 4.	Signature	Printed Name Printed Name		Date/Time

Page 5 of 5

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September 18, 2012

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.: 12I0341 Order Name: Bisbee Well 287008

RE: Well

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 09/11/2012 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

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.

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Please call if you have any questions.

Respectfully submitted, Turner Laboratories, Inc. ADHS License AZ0066

eni L. Harcia

Terri Garcia Technical Director

Client: Project: Work Order: Date Received:	Clear Creek Associates Well 12I0341 09/11/2012		Bisbee Well 287008 er Sample Summary
Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time

12I0341-01

Anderson

Ground Water	
--------------	--

09/09/2012 1300

Page 2 of 6

Client:	Clear Creek Associates	
Project:	Well	
Work Order:	12I0341	
Date Received:	09/11/2012	Case Narrative

This report was originally generated on 09/18/2012. It is being revised on 09/18/2012 to include reporting of sulfate only and not aresenic, which was on the original report.

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: Project:	Clear Creek Associates Well		Client Sample ID: Anderson Collection Date/Time: 09/09/2012 1300					
Work Order:	12I0341	Matrix: Ground Water						
Lab Sample ID:	12I0341-01				Orde	er Name: Bisbee V	Well 287008	
Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Analyses Anions by Ion Chro		PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst

Client:	Clear Creek Associates
Project:	Well
Work Order:	12I0341
Date Received:	09/11/2012

QC Summary

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Batch 1209089 - IC PREP										
Blank (1209089-BLK1)				Prepared &	Analyzed: (09/11/2012	2			
Sulfate	ND	5.0	mg/L							
LCS (1209089-BS1)				Prepared &	Analyzed: (09/11/2012	2			
Sulfate	12	5.0	mg/L	12.50		98	90-110			
LCS Dup (1209089-BSD1)				Prepared &	Analyzed: (09/11/2012	2			
Sulfate	12	5.0	mg/L	12.50		98	90-110	0.2	10	
Matrix Spike (1209089-MS2)	Sour	ce: 12I0341-()1	Prepared: 09	9/11/2012 A	nalyzed: (9/12/2012			
Sulfate	92	25	mg/L	62.50	31	98	80-120			
Matrix Spike Dup (1209089-MSD2)	Spike Dup (1209089-MSD2) Source: 1210341-01		Prepared: 09/11/2012 Analyzed: 09/12/2012							
Sulfate	91	25	mg/L	62.50	31	96	80-120	0.8	10	

Page 6 of 6



September 18, 2012

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.: 12G0801 Order Name: Private Well Install #28

RE: Well

Dear Ben Daigneau,

Turner Laboratories, Inc. received 1 sample(s) on 07/27/2012 for the analyses presented in the following report.

The attached report has been revised. Please refer to the Case Narrative page for an explanation of the changes. We apologize for any inconvenience this may have caused you.

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

eni L. Harcia

Terri Garcia Technical Director

Client: Project: Work Order: Date Received:	Clear Creek Associates Well 12G0801 07/27/2012		Private Well Install #28700 ler Sample Summary
Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time

12G0801-01

McConnell

Ground Water

07/27/2012 1140

Client: Cle	ar Creek Associates	
Project: We	11	
Work Order: 120	G0801	
Date Received: 07/2	27/2012 Case Narrati	ive

This report was originally generated on 8/03/2012. It is being revised on 09/18/2012 to include reporting of sulfate only and not aresenic, which was on the original report.

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: Project: Work Order: Lab Sample ID:	Clear Creek Associates Well 12G0801 12G0801-01	Client Sample ID: McConnell Collection Date/Time: 07/27/2012 1140 Matrix: Ground Water Order Name: Private Well Install #287008						
Analyses	Result	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chro	omatography-E300							
Sulfate	41	25		mg/L	5	07/31/2012 1100	07/31/2012 2016	EW

Client:	Clear Creek Associates
Project:	Well
Work Order:	12G0801
Date Received:	07/27/2012

QC Summary

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Batch 1207325 - IC PREP										
Blank (1207325-BLK1)				Prepared &	Analyzed: (07/31/2012				
Sulfate	ND	5.0	mg/L							
LCS (1207325-BS1)				Prepared &	Analyzed: (07/31/2012				
Sulfate	12	5.0	mg/L	12.50		97	90-110			
LCS Dup (1207325-BSD1)				Prepared &	Analyzed: (07/31/2012				
Sulfate	12	5.0	mg/L	12.50		100	90-110	3	10	
Matrix Spike (1207325-MS1)	Sour	ce: 12G0810-	-01	Prepared &	Analyzed: (07/31/2012				
Sulfate	19	5.0	mg/L	12.50	7.2	95	80-120			
Matrix Spike (1207325-MS2)	Sour	ce: 12G0826-	-04	Prepared & Analyzed: 07/31/2012						
Sulfate	12	5.0	mg/L	12.50	0.45	94	80-120			
Matrix Spike Dup (1207325-MSD1)	Sour	ce: 12G0810-	-01	Prepared &	Analyzed: (07/31/2012				
Sulfate	19	5.0	mg/L	12.50	7.2	96	80-120	0.6	10	
Matrix Spike Dup (1207325-MSD2)	Sour	ce: 12G0826-	-04	Prepared &	Analyzed: (07/31/2012				
Sulfate	12	5.0	mg/L	12.50	0.45	94	80-120	0.3	10	

And A A Signature A ALLAND DI. Angle July A Signature And Schaled And And A Alland	RECEIVED BY: RECEIVED BY: RECEIVED BY: RECEIVED BY: RECEIVED BY: RECEIVED BY:	2445 N. Coyote Drive, Suite 104 CH Tueson, Arizona 85745 Same FROJECT NAME PROJECT NAME CONTACT NAME Clear CONTACT NAME Clear Contract NAME Clear Contract NAME Clear Clear Contract NAME Clear Clear PHONE C22 - 400 Sample ID. Labor N. Court A. Le 41/01 Clear PHONE C22 - 400 Sample ID. N. Court A. Le 572 PHONE C22 - 400 Sample ID. Mater ID. Mater ID. ID. ID. ID. Mater <
* LEGEND * LEGEND * LEGEND * LEGEND * LEGEND * LEGEND * LEGEND * LEGEND * LEGEND * SPECIAL INSTRUCTIONS/COMMENTS: * SPECIAL INSTRUCT	IURNAROUND REQUIREMENTS: REPORT REQUIREMENTS: INVOICE INFORMATION: SAMPLE RECEPT:	CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

APPENDIX D

GROUNDWATER SAMPLING FORMS

Project No:	055038			······	Client:	Freeport Copp	er Queen Bran	ch	
Task No:	1.0		······		- Date:	1270612			
Well ID:	Anderso.	<u>a '</u>			Weather:	Overcast			
ADWR No:					Sampler:	VNH			
				WELL DA	TA				
Well De	epth (ft bls):				Nomina	al Size (inches)	Capacity Gallons per I		
Casing [Diameter (in):					2 4	0.1 0.6		
Static Wate	er Level (ft bmp):	151.3	34		1	5 6	1.02		
	Volume (gal):		x3 =			8 10	2.6	1	
					Casi	ng Volume = galion	4.0 s/foot * water colu		
I otal Volun	ne Purged (gal):			LD SAMPLIN	1				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents	
	Pump On								
1762.9				6,89	24.9	1520			
	· · · · · · · · · · · · · · · · · · ·								
	FIELD PARAMET	ER STABILIZA	TION: Three c	onsecutive rea	dings within (0.2 su pH, 2 degree	Pump Off ≥s C, and 200 µS/c	m)	
			SAN	APLE INFOR	MATION				
Sar	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Adore	n	1636	Poly	250m l	l	300.0	NA	<u> </u>	
		W	ATER LEVEL	MEASUREN	 //ENT COLL	ECTION			
No wate No wate No wate Other: Purged 3 Purged 3 Purged 4 Other:	evel measurement r level measurement r level measurement r level measurement 3 well volumes an 3 well volumes ba well until field para <u>No pur</u> Comments:	ent collected. N ent collected. C ent collected. V d field paramet sed on previou ameters stabiliz	Destruction in w Well is pumping WELL I ters stabilized. s water level ar red.	eli. PURGING INF	ORMATION	r. :cl.			

1

WELL DEVELOPMENT RECORD

Well ID: <u>AND ER</u>565 ADWR Reg. No: <u>221598</u> Page <u>1</u> of <u>1</u>

Project Na	ame:	_	Project No	D.:		Site Addre	ess:			ADWR Registry No.:		
Cal	3 Pr	ivate wells	287	008		Nac	o Hust			221348		
Drilling Co	n: Yel	low Jac	kit			Date Started: 9-8-1乙				Date Finished: 9-8-12		
Geologist:	6					Measuring	g Point (M.P.):			Distance b/t land surface and M.P.(ft):		
00	<u>sn' l</u>)ai'a wear	<u>ు</u>			tup	o of clarat	or		6.3.4		
Total Cas	ed Depth ((ft bls):J	2			Screen In	top of clerator Screen Interval (ft bis):					
Pump Typ	e/Setting	(ft bls): ダン	0			Static Water Level (ft bls): /88.56.6/S						
Method of	Flow Rate	e (Q) Calculation <i>Flow</i>	: moter			Sand Mea	surement Metho	d: Imh	off. a	9.N こ		
	Water Quality Parameters											
Data	Time	Antinita		~			<u> </u>			T		
Date ຊ/ເ/ເ/າະ	Ime	Activity (Bail, Swab, Pump)	Q (gpm)	Q _T (gal)	Sand Content (ml/l)	рН	Conductivity (us/cm)	(FC)	TDS (ppm)	Comments		
09:18	59.15		25	225	0	8-35	430.4	23.3				
c9:/55 A:50	09-35		25	875	0	8-41	413.4	29.0		slightly turbid -white		
c/i:so	09:50		25	1250	0	8.43	413.10	242				
1Ø:	10:45		25	2625	0	8.41	467.8	25.0		Angle Field Say		
%	11.35		23	3750	0	9.3Z	407-5	26.1				
	12:15	æ.	23	4785	्	8.28	405.3	25.7		H.S. ZO.005 (Field strip)		
	12:45		23	5475	0	8.34	406.3	25.9		H_S=20.005 (Field strip) Freld SOy = Ongli		
										······································		



Project No:	055038				Client:	- Freeport Copp	er Queen Brand	ch	
Task No:	1.0				Date:	05 20613	2		
Well ID:	AWC-0	2						my	
ADWR No:					Sampler:	Partly cloudy VNH Q	MML	/	
				WELL DA	ΤΑ				
Well De	epth (ft bis):				Casing Capacity Nominal Size (inches) Gallons per Linear Foot				
Casing	Diameter (in):					2 0.16 4 0.65			
_		.				5	1.02	2	
Static Wate	er Level (ft bmp):					6 8	1.47 2.61	1	
Casing \	Volume (gal):		x3 =			10	4.08		
Total Volun	ne Purged (gal):					g Volume = gallon:	s/foot * water colun	nn (feet)	
				LD SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents	
0927	Pump On								
0932	5			7.35	22.4	431.5			
6937	10			7,21	22.1	440.1			
0942	15			7.25	22.1	437.1			
					<u> </u>		-		
							Pump Off		
	FIELD PARAMET	 ER STABILIZ/	ATION: Three c	onsecutive rea	dings within ().2 su pH, 2 degree	•	າກ)	
				APLE INFOR	n na stalatické detainte. Na stalatické detainte.				
			Container	kangen kange T	No. of			Filtered	
Sa	mpie ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)	
AWC	-02	0946	POLY	250	١	300.0	N	ý	
		l W	I /ATER LEVEL	MEASURE		ECTION			
D Water le	evel measuremen								
1	er level measurem		No access to w	ellhead/No poi	t in wellhead				
	er level measurem								
	er level measurem	ent collected.	Well is pumping).					
Other:			WEN	PURGING INI	ORMATION				
	3 well volumes ar	d field oarame	ugusian and a providential and a sub-		n Gernan Fischer - Sol				
-	3 well volumes ba			nd field parem	eters stabilize	ed.			
Purged	well until field par								
Other:									
Additional	Comments:							1	
·····									



Project No:	055038				Client:	- Freeport Copp	er Queen Bran	ch	
Task No:	1.0			<u></u>	Date:	5JUL 12			
Well ID:	AWC-03				Weather:	Partly Claud	le, humid	SUNNI	
ADWR No:	<u></u>				Sampler:	WH Q N			
				WELL DA					
	epth (ft bls):				Casing Capacity Nominal Size (inches) Gallons per Linear Foot				
					rtomana	2	0.1	3	
Casing E	Diameter (in):		······			4 5	0.6 1.0		
Static Wate	r Level (ft bmp):					6 8	1.4 2.6	1	
Casing \	/olume (gal):		x3 =			10	4.0		
Total Volum	ne Purged (gal):				Casing Volume = gallons/foot * water column (feet)				
			FIEL	D SAMPLIN	G DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (⁰C)	Specific Conductance (µS/cm)	Comm	ents	
	Pump On								
0843				7.32	21.7	474.3			
							Pump Off		
origeneiten (Stenge, Lenne) er	FIELD PARAMET	ER STABILIZA	na marana ang marina di sa kang m		denad Seguration data).2 su pH, 2 degree	es C, and 200 μS/c	m)	
			SAN	APLE INFOR	MATION				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
AWC-0	53	0847	Poly	250mh	{	300,0	Ø	Ý	
		W	ATER LEVEL	MEASURE		ECTION			
Mater k	evel measuremen			rinestandi Siet	u Kadisi Mangoligin				
	er level measurem		No access to we	ellhead/No por	t in wellhead				
	er level measurem								
-	er level measurem	ent collected.	Well is pumping] .					
Other:			30/013	PURGING INF	ORMATION				
	3 well volumes ar	utield parama		and the contractions					
· · ·	3 well volumes an 3 well volumes ba	-		nd field parem	eters stabilize	ed.			
-	well until field par			•					
⊀ Other:	Well has	been	pumpino	۹					
Additional	Comments:		· · · ·	·	*****				

Project No:	055038				Client:	- Freeport Coppe	er Queen Brand	:h
Task No:	1.0				Date:	5JU 12		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Well ID:	AWC-0-	-1			Weather:			SUMAY
ADWR No:	<u></u>			Annal	Sampler:	<u>fartly Clouc</u> VNH & MM	τ. 	7
				WELL DA	TA .			
Well D	epth (ft bis):				Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
						2 0.16 4 0.65		
_	Diameter (in):					5	1.02	2
Static Wate	r Level (ft bmp):	.				6 8	1.47 2.61	1
Casing	/olume (gal):		x3 =			10	4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colun	nn (feet)
				LD SAMPLIN				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (⁰C)	Specific Conductance (µS/cm)	Comments	
	Pump On							
0901				7.03	21.6	568.0		
							<u>,,,,.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
					:		Pump Off	
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	l Indings within ().2 su pH, 2 degree	•	m)
				MPLE INFOR	Roman (2002)			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
AWC	-04	0904	POLY	2.50	١	300.0	2	У
Dupor	-04 10552012		POLY	250	1	300.0	2	У
		N	ATER LEVEL	Seguration parts (200 capture	MENT COLL	nation (2016) - CADIO La travale da travale d		
D Water i	evel measuremen	da ara da se ne es						
6	er level measurem		No access to w	ellhead/No po	rt in wellhead			
1	er level measurem							
R No wate □ Other:	er level measurem	ent collected.	Well is pumping	3 .				
			WELL	PURGING INI	ORMATION			
D Purged	3 well volumes ar	nd field parame	ngi shi qishi ka na	ngan taken leksisinin di	unandari kerdiki jiki		en pendiçi terdi si seri di sessi si sessi si sessi si se	eunungu(PhilinsCont _i ld-U
	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field par		• .					
	Well has	s been	pumpin	<u>ia</u>		*****		
Additional	Comments:				******			
w								



Project No:	055038				Client:	Freeport Coppe	r Queen Brancl	1
Task No:	1.0				Date:	5JULIZ	2	
Well ID:	Awc-of	5			Weather:	Partly cloudy,	humid, sonr	ιγ
ADWR No:	<u></u>					WH	•	,
				WELLDA	A		Canaciby	
Well D	epth (ft bls):				Nominal	Size (inches)	Capacity Gallons per Lir	iear Foot
	• • • •		<u>, , , , , , , , , , , , , , , , , , , </u>			2 4	0.16 0.65	
-	Diameter (in):					5	1.02 1.47	
Static Wate	er Level (ft bmp):					8	2.61	
Casing	Volume (gal):		x3 =			10	4.08	n (foot)
Total Volur	ne Purged (gal):					g Volume = gallons	/foot * water colum	
				LD SAMPLIN	IG DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comme	nts
	Pump On							
1417				7,24	22,6	432,1	Clear, colorle	公
,								
			·					
				<u> </u>				
							Pump Off	
			ATION: Three (consecutive re	adings within (0.2 su pH, 2 degree	es C, and 200 µS/cr	n)
			and the set of the level of the state of the	MPLE INFOR	Annege and a share of the second			
			Container		No. of		Dress votivo	Filtered
S	ample ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
Awc-	05	1423	Poly	25cmL	1	300.0	NA	<u> </u>
/ (// -	<u></u>		1					
		L .	ATER LEVE		MENT COLI	ECTION		
D Water	level measuremer		an a			asputen nin makasun andara si		The December of the Advertise of the Control of the
	ter level measuren		No access to v	vellhead/No po	ort in wellhead			
	ter level measuren							
	ter level measuren	nent collected.	Well is pumpin	ıg.				
□ [°] Other:			WELL	PURGING IN	IFORMATION			
	d 3 well volumes a	nd field parame	eters stabilized	1992 Hon (1994 999 999 999 999 999 999 999 999 999	n i territa i paga accidada. A			
	d 3 well volumes b				neters stabiliz	ed.		
	d well until field pa		-					
	Well was	pumpin	<u>ک</u> .	~1 2	AP P	- Ano	have Fl.	etrician
The second se	al Comments:	Well he	11 1	1 Shut	off for	r or Jew field par	amplers. 10	un D
<u>called</u> <u>had</u>	been on		hours.		<i></i>	1.000 100	<u> </u>	



roject No:	055038			(Client:	Freeport Coppe	er Queen Branch]
ask No:	1,0				- Date:	6JUL 12		
		486				Sunny, 1		
/ell ID:	LAMINES	1.00			- Sampler:	VNH		
DWR No:				WELL DAT	the second se			
	- 15 (A bin);	435'			Nominal	Casing Size (inches)	Capacity Gallons per Lin	ear Foot
	epth (ft bis):	/ر			2 0.16 4 0.65			
Casing D	Diameter (in):	6				5	1.02	
Static Wate	r Level (ft bmp):			<u></u>		6 8	1.47 2.61	
Casing V	/olume (gal):	298	x3 = 8	94		10	4.08	
-	ne Purged (gal):				Casin	ig Volume = gallon	s/foot * water colum	n (feet)
Total Volum			FIE	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp	Specific Conductance (µS/cm)	Comme	nts
1213	Pump On							
1223	10	9	20	7.60	76.8	990	24.8°C	
1233	20	9	180	7.76	75.5	1000	24.2°C	
1253	40	9	360	7.75	76.4	960	24.6°C	
1313	(00	8	520	7.68	75.9	950	24.4°C	
1333	80	8	680	7.67	75,8	950	24.3°C	
1353	100	8.5	850	7.64	75.5	950	24.2 °C	
1358	105	8.5	892,5	7.66	74.7	940	23:7°C	
					:		Pump Off	~~`
	FIELD PARAME	TER STABILIZ				0.2 su pH, 2 degre	es C, and 200 µS/ci	
			SAN	APLE INFOR	RMATION			Filtered
Si	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	I Preservative	(y/n)
Banks	986	1400	Polv	250mL	. [300,0	NA	1
	7062012	1400	Poly	250ml	, (300.0	NA	<u> </u>
1 <u>905 v</u>	1062012		VATER LEVEL		a second and a second se	LECTION		6
X Nowa □ Nowa □ Nowa	level measureme ter level measurem ter level measurem ter level measurem ter level measurem	ment collected. ment collected.	. Obstruction in v	well.	ort in wellhead	d		
Other:			WELL	PURGING IN	FORMATIO	N.		
	d 3 well volumes a	and field param	neters stabilized.	genetiti den kuitti tiisti tiisti				
D Purge	ed 3 well volumes	based on previ	ous water level a	and field pare	meters stabili	zed.		. /
	d wall until field n	arameters stab	ilized.				87	
🕅 Other	<u>: Purged E</u>	s well vi	ols basec	1 00 5	SWLC	<u>BANKS9</u> Z.59'	01	
Additiona	al Comments:	SWL (2 Bank	5 987	= 23.	2,041		<u></u>

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Project No:	055038				Client:	Freeport Coppe	r Queen Brand	:h
Task No:	1.0				Date:	6JUL 1	2	
Well ID:	Banks 9	87			- Weather:	SUNNY, V	ie f	
ADWR No:	12.00	·//			- Sampler:	VNIH		
				WELL DAT	and an other state of the second s			
Well D	epth (ft bls):				Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
						2 4	0.10	i i
Casing I	Diameter (in):	021	2.59			5	1.02	2
Static Wate	er Level (ft bmp):	20.	4.01			6 8	1.4 2.6	
Casing V	Volume (gal):		x3 =			10	4.00	
Total Volur	ne Purged (gal):					g Volume = gallons	/foot * water colun	nn (feet)
			i de la catalante de catalante de	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
	Pump On							
·····								
	X							
				L				
				1				
							Pump Off	
ļ <u>'</u>		FR STABIL 17/	ATION: Three c	onsecutive rea	dinas within ().2 su pH, 2 degree	•	:m)
			espectations and the	APLE INFOR	ory the second state is a second state of the			
			Container		No. of			Filtered
Sa	ampie ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
		1 1		MEASURE		ECTION		
Ø Motor	level measuremer			dinan Shupi Bladi				
1 .	er level measuren		No access to w	ellhead/No por	t in wellhead			
	er level measuren							
1	er level measuren	nent collected.	Well is pumping] .				
Other:			WELL	PURGING INF	ORMATION			
	1 3 well volumes a	nd field parame	eters stabilized.	HERE AND CONTRACTORS	o stani ni pati ka sini kini ka nya n	nertrati-fileeteitteltijesteventaanse, de	() () () () () () () () () ()	1996 - Angelander (Mariel Mariel (Mariel (
1 -	i 3 well volumes b			nd field parem	eters stabilize	ed.		
-	i well until field pa	rameters stabil	ized.					
Other:	10	· · · · ·	4	1.0000	<u>(</u>),	- h.c		
Additiona	l Comments:	(N0	n ter	Level		<u>· (</u>		

reject No:					Client: _	Freeport Coppe	er Queen Bran	eh	
-					Date:	8-13-11			
lesk No:	BE	- 1.			Weather:	- Conny	/		
Vell ID:	aina ang ka faan	and the second			Sampler:	Chustop	lex 6.51	u ann	
DWR No:		t,		WELL DA	TA	• • /		e data da	
							Capacity Gallons per	inear Foot	
Vell Depth (ft b	ils):	4	00-			ize (inches) 2	0.1	6	
Casing Diamete	ar (ln):		411			4	0.6 1.0	-	
		24	2.95			6	1.4	-	
Static Water Lo	vel (it papp):				· .	8	2.6 4.0		
Casing Volume	(gals):					Volume = gallom	s/foot * water cold	enn (řect)	
3 Casing Volum	nes (gals):		,	LD SAMPLI	NG DATA				
		Discharge	Total	pH	Temp	Specific	Contra	sents	
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gailons)	(SU)	(°C)	Conductance (uS/cm)	1970-2019-00-00-00-00-00-00-00-00-00-00-00-00-00		
1630							, 		
1/22	3	7.5	22	5.99	22.6.	2980			
141	5	ZIE	38	<u> </u>					
1410					·				
			-						
	· · · · · · · · · · · · · · · · · · ·		· ·			-	344.20	SWI	
0930	1		-	6.00	21	0 3000	211 -		
0931-	.								
	- <u> </u>								
				<u> </u>			-		
			 	AMPLE INFO	RMATION				
Sai	mple (D	Time	Container Type	Vojume	No. of Containers	Analysis Method	Preservative	Comment	
0.0	*	0071		250 ml	1	EPA 300.0	néne,	filtered	
BF-1	· .	0931	plastic	230 100	1			and the second	
*					1				
					+]		
			1		1	1	1	the second se	
	الان المراجع مي المراجع المراجع مراجع المراجع ا				<u> </u>				

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8-14-12

E.K.M.

Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch
Task No:	1.0				Date:	10702	12	
Well ID:	Bima				Weather:	Partly clady	, humid,	90s
ADWR No:					Sampler:	WH		
				WELL DAT	A	Casipa	Casaciby	
Well D	epth (ft bis):	46	ഗ'		Nominal	Size (inches)	Capacity Gallons per L	
Casing	Diameter (in):	Ŷ	;			2 4	0.10	
_						5 6	1.0/ 1,4	
	er Level (ft bmp):		<u> </u>	150		8	2.6	1
Casing	Volume (gal):		x3 = /		Canin	10 g Volume = gallons	4.0	
Total Volur	me Purged (gal):	Stelected static terror to contact				g volume – galons	Water Cour	
			an a	D SAMPLIN	GUAIA	0		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
1450	Pump On							
145Ce	6	11,5	69	6.18	24,1	1180		
1459	Cl	11.5	103,5					
1500	10	2.4	105.9	6,06	23,7	1200		
1501	//	2,4	108.3					
							Pump Off	
		ER STABILIZ	ATION [,] Three or	nsecutive rea	l dinas within ().2 su pH, 2 degree	•	cm)
				IPLE INFOR	a siste di stato e te sugi i di dati			
			Container		No. of		Orean puetino	Filtered
Sa	ample ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
Bima		1532	Poly	256mL	ł	300.0	NA	4
			(6
		N N	ATER LEVEL	MEASURE	MENT COLL	ECTION		
D Water I	level measuremen	t collected			ulter den			
	er level measurem		No access to we	elihead/No por	t in wellhead			
-5 No wat	er level measurem	ent collected.	Obstruction in w	ell.				
1	er level measurem	ent collected.	Well is pumping	l.				
D Other:			N/CIII	PURGING INF	OPMATION			
	3 well volumes ar			FONGINGIN	CINIDATIC/I			
-	3 well volumes an	-		nd field parem	eters stabilize	ed.		
-	l well until field par			,				
Dther:	Purged u	ntil u	sell ran	dry.				
		Obstruct		well,	BAD	1 1	<u>u's is a</u>	٤
sketch	y well	for su	NL. OU	Iners (to not	like -	the purg	Q .
	L	•						



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					Client:	Freeport Cop	Der Queen Rm	web
Project No:						8-14-		15 8 1 1 7
Task No:					Date:		<u> </u>	
Well ID:	Bin	10-2008	-16		Weather:	Sunn		£
ADWR No:	•				Sampler:	Christan	for 1 St	uran
				WELL D	ATA			alateko manda kuma taka mara -
Contractory operations of the second		21	~				g Capacity	-1
Well Depth (it t	ols):	310	2		Nominal	Size (inches)		Lineur Foot
Casing Diamet	er (In):	•	51			4	-	.65
-		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\overline{)}_{1}$	2		5		.02 .47
Static Water Le	tic Water Level (it bmp):				- 8		-	.61
Casing Volume	(gais):	***	243			10		.08
3 Casing Volum	nes (cals):		D 7	29	Casir	ng Volume = gallor	ns/foot * water ce	iumn (feet)
2			FI	ELD SAMPL	ING DATA			
Timə	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	рН (SU)	Temp (°C)	Specific Conductance (pS/cm)		ments
1/10				<u>f</u>				
201140	2030	8.3	249	6.90	224	959		• •
1200	50	83	415	4.94	2/19	956		
1220	70	8-3	581_	6.23	21.8	753		
1240	90	Q.3	747	1.97	21.9	959		
				<u> </u>				
						·		
			· · · ·					
			, 					
			S /	MPLE INFO	RMATION		instage Tencomen Capper werk by 1999 (1999) (1999)	
Sam	pie ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative .	Comments
Rmo-2	018-16	1240	plastic	250 mi	1	EPA 300.0	néne,	flitered
_				L			р 	
				1				
					<u> </u>			
Additional Con	iments:			A				
			238.	<u> </u>	way the automatic from the second field			

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	Groundw	ater Sam	pling For	7)						
Project No:					Client:	Freeport Cop	per Queen Br	anch		
Task No:			-		Date:	7-10	=12			
Well ID:	Bino	-2008	- 3B		Weather:	Sum				
			and the second secon		Sampler: Christophin L Slurg					
ADWR No:				WELL (~ <u>~~~~</u> ~~ <u>~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~				
	<u>.</u>		910				ıç Capacity			
Wa l Depth (it i	ols):		2.60		Nomina	l Size (inchas) 2		ar Linear Foot 8.16		
Casing Diamet	er (in):		511			4	4	0.65		
Static Water Le	wei fit brank:	14	13.7			8	1	1.02 1.47		
			i 101		1	8 10	6	2.61 1.68		
Casing Volume	(gals):	~~~~			Casi	ng Volume = gallo				
Casing Volum	nes (gals):	<	<u>55/</u>	ELD SAMPL	l	Minterent of Contract				
WebCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		Discharge	Total		1	Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Con	ments		
1/10	3 3					1				
1/29	10	27	135	4.94	1217	459		· ·		
105	15	27	405	7.01	1212	157				
[]30	<u> </u>		-576	1000		<i>(c)</i> /	· · · · ·			
	·									
			, 							
							-			
A				· · · · · · · · · · · · · · · · · · ·	·					
ŧ	a <u>han mananan per</u> penyakan katika katika		SA	MPLE INFO	RMATION			ener Stansaction and the		
	ple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative .	Comments		
<u> 8ma - 200</u>	1-3B.	1130	plastic	250 ml	1	EPA 300.0	nane,	filtereci		
		`		, ,						
					<u> </u>					
										
								Juman Law and And Same		
Additional Com	ments:	16.3			<u> 1914 - 1917 - 1917 - 1917 - 19</u> 5 - Mil			the second s		

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Project No:		·			Client:	Freeport C	opper Queen	Branch
Task No;					Date:	8-15.		
Well ID;	Bmo	- 2003	~ 4B		Woather:	•		
ADWR No:		Sampler: Christophy & Shumons						
				WEL	. DATA	Call IST Y	W. K. Ma	1mn
Well Depth (iy hipu	·]	510.			Ca	sing Capacity	
	-	<u>l</u> lé		· ·	Nomi	nal Size (Inches) 2	Gallona	per Linear Foo 0.16
Casing Diam	ster (In):	2 .	5			4		0.65
tatic Water i	Level (ft bmp):	140.	90			5		1.02 1.47
asing Volum	ne (gais):	1	478		7	8 10		2.61
Casing Volu	mon factor.	i 4	211			sing Yolume = gall		4.08
	anga (grap):		<u> </u>	iei d same	LING DATA	auril . anenne Ante		column (ceet)
	Elapsed Time	Discharge	Tetal]	7	Specific	T	
Time	(min)	Rate (gpm)	Olscharge (gallens)	بلم (SU)	Tenap (°C)	Conductance	Co	unments
2930			(generation)			(uS/cm)		
2940	10	23	230	6.95	23.5	382	Primo a	
2950	90	23	460	4-99	23.06	381	<u> , , , , , , , , , , , , , , , , , , ,</u>	<u> </u>
1000	30	-73	690	4.96	23.6	380		
P					<u> </u>			
	t							
	Ì							
								•
			ـــــــــــــــــــــــــــــــــــــ	MPLE INFO				
Sampl			Container		No. of			
Gurrija		Time	Туре	Volume	Containers	Analysis Method	Preservative	Comments
0-2008-	-48	1000	plastic	250 mi	1	EPA 300.0	náne;	filtered
		T					d 200(+ 24p) /	12151 50
				·		••		
					<u> </u>		_	
onal Comm	ents:	Puna	L	when	100 1			
		fump_	<u> </u>	w "us]	ald sted	et property	*	
		······································	ENCL	······································				

		C	Groundw	vater S	ampling	g Form		
oject No:	055038				_Client:	Freeport Copp	er Queen Brand	ch
isk No:	0	~~ .~			Date:		2	
ell ID:	BMO-10	<u>78-4</u> E)		Weather:	T		<u> </u>
OWR No:					Sampler:	(Sagar	Seconm	ents)
ala di tata 1971. Tata di tata 1971.		haa aha doola	• ^	WELL DA	TA T	Casino	g Capacity	
Well De	epth (ft bls):	Q	0		Nomina	l Size (inches)	Gallons per L	
Casing [Diameter (in):	4	5"			2 4	0.16	
Static Wate	r Level (ft bmp):	13	10.15			5 6	1.02	
			x3 =			8 10	2.6	
-	/olume (gal):				Casir		I 4.00 Is/foot * water colun	
Fotal Volun	ne Purged (gal):		FIEI	D SAMPLIN		ig volume – gallor		
		Discharge	Total		T	Specific	· · · · · · · · · · · · · · · · · · ·	
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comm	ents
	Pump On							
				·				

	-							
							Pump Off	
	FIELD PARAMET	ER STABILIZA	TION: Three co	 onsecutive rea	dinos within I).3 su pH. 2 deare	es C, and 100 μS/ci	m)
				IPLE INFOR			· · · · · · · · · · · · · · · · · · ·	
Sa	mple ID	Time	Container Type	Volume	No. of Centainers	Analysis Method	Preservative	Filtered (y/n)
•								
		<u> </u>		<u> </u>			<u> </u>	vontra dal es
,	. i		ATER LEVEL	MEASURE	MENT COLL	ECTION		
· .	vel measurement							
_	r level measurem r level measurem				rt in wellhead			
	r level measurem							
Other:								
		National Anna Anna A	WELL	PURGING IN	FORMATION			
] Purged	3 well volumes an	d field parame	ters stabilized.					
	3 well volumes ba			nd field parem	neters stabilize	ed.		
	well until field para	ameters stabili	zed.					
Other:	-	I. MIAC	01101 11	100 - 00	n and-l-	1/00 000	Alacia Car	A
dditional	Comments:	afed v	erbally	1051/11 70 BU	1 Dargi	near or		ennan
1A19L	rlonet	Antix	<u>J</u>				44994 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999	
ADOU			<u>/</u>					
jects\G & K\05	5038_Copper Queen Br	ranch Mitigation Ord	l ler\Groundwater Mor	nitoring\Forms\Gro	oundwater Samplin	g Sheet		

Project No:					Client	Freeport Cop	per Queen Bra	anch
Task No:					Date:		2-12	
Well (D:	Amo	2008	2-5R		Weather:	Sunny		
ADWR No:	and the second state of th				Sampler:	Christopher	6 Skoon	1
				WELL C		<u>Certain product</u>		
			01				ng Capacity	
Well Depth (ft	bis):		<u> </u>		Nomina	l Size (inches) 2		r Linear Foot
Casing Diame	ier fint:	· 1	11			4		1.65
		14911			1	5	1	.02
Natic Water L	evel (it imp):		·[1]					.47 1.61
Casing Volume	e (gals):	138				10	4	.08
Cesing Valur	nes fals).	4	[4]		Cash	ng Volume = gallo	ns/foot * water co	tumn (feet)
				eld Sampl	ING DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Totai Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (uSicm)	Com	ments
0945					· -			
0050	5	27	135	10.84	21.7	724		
1000	15	27	405	1.86	21.6	722		
1010	25	27	675	6.87	215	726		
-		<u> </u>		- (
	ļ ł					<u>_</u>		
			••••••••••••••••••••••••••••••••••••••					
		l.	SA	MPLE INFO	RMATION			
Sam	ple ID	Time	Container Type	Volume	No. of Containers	Analysis Nethod	Preservative .	Comment
BMD-20	OZ TA:	1010	plastic	250 ml	1	EPA 300.0	nóne,	filtered
						۸-		
			Haberrow-Reputer Attribut					a start and a start of the second state

Project Na:					Client	Freeport Copp	er Queen Brar	ich		
Task No:					Date:	<u> 97 7</u>	-10-12			
Well D:	Linc	2008	- 5M		Weather:	er: Subarl				
	- in the second se	-Aue			Sampler:	(Jecistada	v] Sturn	and in the second s		
ADWR No:			Dada a da anticipation a de la casta da anticipation de la casta da anticipation de la casta da anticipation d	WELL D	ата					
							Capacity			
Well Depth (R i	ols):	4	50		Nominal	Size (inches) 2	Gailons per 0.4			
Casing Diamot	or (in):	. 7	54			4	0.1	95		
-	-	15	110		- 5 1.02 6 1.47					
Static Water Lu	wel (ft bmp):		1.65			8	2.51 4.08			
Casing Volume	(gals):		304,3			<u>t0</u>				
3 Casing Volue	nec (cals):		913		Casin	g Volume = gallon	s/foot * water colt	ann (feet)		
Fording stress			ŕ#	eld sampl	NG DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	p버 (SU)	Temp (°C)	Specific Conductance (µ\$/cm)	Const	nents		
0830								1992		
0836	· R 5	1/8	90	6505	14.9	594		- 		
855	25	18	450	6.89	22.5	(92				
8915	45	18	810	1.82	22.4	592				
0925	55		998	6:00	- p-1-7	- 1400	+	-		
						•				
			-							
			······································							
t.				MPLE INFO	No. of					
San	npie ID	Time	Container Type	Volume	Containers	Analysis Method	Preservative .	Commonia		
A 44 - 0		0925		250 mi	- 1	EPA 300.0	noner,	filtered		
KMA -20	108-5M	w / 45	plastic	200 mu						
				<u> </u>	· ·					
				<u> </u>	<u> </u>					
		6					i î			
					298.9			#//#1.ALB-1.1.224.19-19-19-15		

Project No:		· ·			Client: Freeport Copper Queen Branch				
Task No:			•		Date:	7-10	2-12		
Well ID:	Rmo	2008 -	1.B		Weather: Portly Couch				
ADWR No:					Sampler:	1 houston	· · · · · ·	na	
AD STAL 160.	and the second secon			WELL I	A CLASS OF THE OWNER OF THE OWNER	an an an an Anna an Ann			
		0					g Capacity		
Weil Depth (A	bis):		.5	-	Nominal	Size (inches) 2		r Linear Foot	
Casing Diamei	ter (in):	<u> </u>				4	. a	1.65	
						5 6		.62	
Static Water L	ever (ir pitik):						2	.61	
Casing Volum	e (gais):					10		.08	
Casing Volu	nes (gals):		216_			ng Volume = galio	ns/icut - water co	iunini (ieet)	
				eld Sampi	NG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	рН (SU)	Temp (°C)	Specific Conductance (µS/cm)	Com	ments	
070									
0705	5	5.1	25	6.82	21.3	724			
0715	15	<u> </u>	75	1.84	91.2	27/		inite state and the state of the	
0730	30 45	- <u>5.1</u> 5.1	150	6.25	111	328			
0/75	7.2		<u>~~~</u>	- Vérifie					
						-			
			, ,						
			مر المراجع ا		+				
		i and a second secon	SA	MPLE INFO	I DRMATION				
Sam	pie (D	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative .	Comments	
BMQ-7	2017-6B	0745	plastic	250 mi	1	EPA 300.0	none,	fätered	
					<u> </u>				
					<u> </u>	L			
							an and a star star star star star star		
Additional Con	nments:								
		M40		79.2					

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Project No:	, and a state of the second state of the secon				Client:	Freeport Cor	oper Queen Bi	anch
Task No:					Date:	<u>7</u> 4	12-10-	-12_
Well ID:	BM	10-200	8-6M		Weather:	Sunn/		
ADWR No:					Sampler:	Christophi	1 Shim	
1		ana chi ca sha cha chi	TRAŻUNI ANDREW PROCESSOW	WELL	DATA		and a first spin in the first state of the	
		<i>U</i>	50				ng Capacity	
Wall Depth (it i	ois):	7	<u>> F).</u>		Nomina	l Size (inches) 2		er Linear Foot 0.16
Gasing Diamet	er (kn):	-	<u>Σ</u>		_	4	1	0.65
Static Water Le	wei (ft bmp):	<u>196.10</u> 259-			5 6 8 10			1.92 · · · · · · · · · · · · · · · · · · ·
							1	2.61 4.08
Casing Volume	(Gara):				Casi	ويسترجع ومستجار والمتحد	ns/foot * water column (feet)	
3 Casing Volum	tes (gals):		<u> 777</u>		LÌNG DATA	ng telano - Brite		
	I	Discharge	Totsi	T		Specific	l	
Time	Elapsed Time (min)	Rate (gpm)	Discharge (galions)	p#1 (SU)	Tenep (°C)	Conductance (#Sforn)	Сол	iments
0610						1	-	
- q129	10	21	210	443	21.4	707		· ·
0130	20 30	2) 21	420	7 17	21.4	1 4/2		
alto	77-10	21	840	6.17	51.0	507	· · ·	
<u>ev.ou</u>	1.0	<u>*</u>	- 310	7-26- (
			•	,				
	i		·					
					· · ·			
					<u> </u>		·	
			8A	MPLE INFO	RMATION			
Samp	vie ID	Time	Container Type	Volume	No. of Containers	Analysis Method	·Preservative .	Comments
BMD-200	12-6M	0650	plastic	250 mi	1	EPA 300.0	náne,	filtered
dditional Com	nents:	n ma 1900 an an Anna Anna Anna Anna Anna Anna A	253.7					
	2	ter	and an and the second					
A 1.1	hated and	H	e			ين الحاد المالية المركز على عن المارية المركز		

Project No:					Client	Freeport Co	pper Queen B	ranch	
fasit No:					Date:	7-1	1-17		
Nell ID:	Br	10-200	+8 7 M	1	Weather:	Parth	1 lloud-		
ADWR No:					Sampler:	Claritte	1 1/1:	car 4	
				WELL	DATA		in the second firm of the second s	æ it	
Vall Depth (ft	bis):	1	70		Biomin	Cas al Size (inches)	ing Capacity		
	-				- Moruna	2	0.16		
lasing Diame	ter (in):		<u>5 "</u>			4 5		6.65 1.02	
tatic Water Li	evel (ft bmp):		435.5			6 8 10		1.47	
asing Volume	e (gais):							2.51 4.08	
Casing Volum	nes (gais):	,	306		Cas	iny Volume = gaile	ens/foot * water o	olumm (feet)	
				eld samp	LING DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (galions)	рН (SU)	Temp (°G)	Spacific Conductance (uS/cm)	Con	nments	
0715									
0720	5	21	105	12.18	22.7.	459	<u> </u>		
0 190	25	21	045	7.14	22.8	451			
0820	105	2/	1365	7.18	227	1955	<u>.</u>		
	,					'			
	· · · · · · · · · · · · · · · · · · ·								
							•		
	a a su a								
				MPLE NFC					
Samp	ie iD	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment	
MO-200	2-7M	<i>q</i> 820	plastic	250 ml	1	EPA 300.0	náne,	filtered	
					<u> </u>		, (, , , , , , , , , , , , , , , , , ,		
	Ī					~~		-	
	1								
litional Comm	nents:			Realizard Francisco	in the second	l <u>enter an a</u> n an			
THE R. P. LEWIS CO., LANSING MICH.	-		42						

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Project No:	17 - 17 - 17 - 1 7 - 17 - 17 - 17 - 17 -				Client:	Freeport Co	opper Queen	Sranch
Task No:					Date:		2-12	
Nell ID:	BMO	- 2008	- 8B		Weather:	Porth		
WWR No:					Sampler:	Unstader	- L Sterr	
		з ^т н		WELL	DATA	Con - Daynor +		Contraction and Contraction and Contraction and Contraction of Con
Vell Depth (R		\$ 480)	antan da serie de la consectió		Cas	ing Capacity	
eau redan (x	снау:			•	Nomi	al Size (inches) 2	Gañons	per Linear Foot 0.16
asing Diame	tor (in):	5	<u>'l</u>			4		0.65
latic Water L	evel (it bmp):	30	1.15			5		1.02
		tamo and the second				8		1.47 2.61
sing Volum	e (gals):	******	182.13			10		4.08
Casing Volum	nes (gals):		548		Car	ning Volume = gall	ons/foot * water (column (fert)
and a supply and a supply and a			'n	eld samp	LING DATA		ini in a surger a su	ini dimensi Kalengikan di Kalengika
Time	Elapsed Time (min)	Discharge Rate (gpm)	Tetsi Discharge (galions)	pH (SU)	Temp (°C)	Specific Conductance (uS/cm)	Co	annents
0940								
0955	15	14.2	213	1.39	21.7	2870		
1005	25	14.2	355	641	12/.1	2860		
015	35	19.2	497	4.40	12/1	2870		
1025	45	<u> </u>	139	6.41	201	2260		
			,				ļ	•
			,			•		
			•					
	_			and the second second second				

			SA	MPLE INFO	RMATION			
Samp	le ID	Time	Container Type	Volume	No. of Containers	Analysis Method	·Preservative	Comments
mo-200	<u>78-88</u>	1025	plastic	250 ml	1	EPA 300.0	náne,	fiitered
			1			· ·	1	
,		<u> </u>	ļ					

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••	Groundwa	ner Janif			8	ana da sua d		
Project No:					Client:	Freeport Copy	oer Queen Bra	nch
Task No:				·-	Date:	2-12	2-12	
Well ID:	Rmn.	2008-	8M		Weather:	Parti la	ived a	4
ADWR No:		ئ <i>ولىلى بىلى</i>	6-4	<u>,</u>	Sampier:	bastaler	2 Shim	
				WELL O	ATA	· /		
			7,0		Nominal	Casin Size (inches)	g Capacity Gailons per	Linear Foot
Well Depth (ft	ois):					2 0.16 4 0.65		
Casing Diame	er (in):		5		- ⁴ 5		1.02	
Static Water L	evel (ft bmp):	30	2.45			6		47 61
asing Volum	e (cais):	9	26			0 10		08
Casing Volu			7772		Casir	g Volume = gallor	s/foot * water col	unm (feet)
			FE	eld Sampl	ING DATA			
Time	Elapsed Time (mîn)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (uS/cm)	Com	nents
9630			· · · ·				- <u>A-j</u> -	
0730	60	17.6	1056	6.91	24.11	551	Pupu	at
0830	120	174	2112	7.1	14.3	554		
09011	1511	17.6	2140	37	74.2	7554		
0910	110	17.6	-bluf-	64.7-	ALA			
			·					
			-					
			*.					
			S/	MPLE INFO	RMATION			
San	npie ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative .	Comment
Rmn-21	08-8M	0910	plastic	250 ml	1	EPA 300.0	náne.	filtered
¥ <u>11.:</u>	<u> </u>							
					·			``````````````````````````````````````
	· · · · · · · · · · · · · · · · · · ·							
Additional Co	nments:		Hickory myoriga theory and	1 1		/		
The second s			90	2.6		11 L./	11/2 to	

Project No:					Client:	Freeport Cop	per Queen Bra	anch	
Task No:					Dats: <u>7-12-12</u>				
Well ID:		SMALS	2098-91	M	Weather:	Partly	Unida		
ADWR No:		<u>,</u>	and and a second se		Sampler:	Austank	- 1- Sleven	~	
and the second in sugary second second		na internetie and a second second field of	n de la construction de la constru	WELL C	DATA				
		معمد العمد العم	·		Casing Capacity				
Neil Depth (it t	ots):		<u>5.</u>		Nomina	I Size (inches) 2		r Linear Foot 1.16	
Casing Diamot	er (in):	£4				4		1.65	
	- (YOU 1	5	1	5		.02	
itatic Water Le	vel (it imp):	Sector Street Street Street	27716	<u>د</u>		6 s]	.47 .81	
asing Volume	(gais):		490		10 4.				
Casing Volum	nes (gals):	/	470		Casi	ng Volume = gallo	ns/foot * water co	lumn (feet)	
		· · · · ·	j n	eld sampl	ING DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (uS/cm)	Com	ments	
HOO									
1/20	20	18.8	376	7.63	14.3	3 54		مى يور از از ان است.	
1140	"4p	128	752	2.45	24,3	5/2			
1200	60	12.8	1/28	747	242	513			
1220	80	182	1504	768	24.2	5/3		<u></u>	
			ι- ι						
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			·						
							· · ·		
				MPLE INFO	Chi Atiani	an and in the local distance of the second			
· Samj	nie IB	Time	Container	Volume	No. of	Analysis Method	Preservative	Comments	
			Туре		Containers				
BM0-2008-9m		1720	plastic	250 mi	1	EPA 300.0	none:	filtered	
							·		
							· · · · · · · · · · · · · · · · · · ·		
ni Salahi ili da ang sa si sa jing	Salasa ay ang salasa sa		n an						
dditional Com	ments:								

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wanter and the second states of the second states o

Project No:					Client:	Freeport Co	oper Queen Br	anch		
ask No:					Date:	7-13-12				
Neil ID:	BMC	1- 2008	- 10 BL	-	Weather:	ther: Rarthy Claudy				
DWR No:	a a garage de la constancia				Sampler:	Thastoner	L Shever.	л		
1882/18 - 18 - 19 - 19 - 19 - 19	tine a chini kani da kani kita na palita sa makana ana	nananan kanang Kananan kananan		WELLI	DATA	· · · ·		an a		
		· 7	210		Casing Capacity Nominal Size (inches) Gallons per Linzar					
Nell Depth (ft	b(s):		<i>W</i> .	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997	Ronina	2 2		er Linear Foot 0.16		
Lasing Diamo	ter (in):	5	1			4		0.65		
iatic Watar L	evel (ft bmp):	511	7.90			5 6	1	1.02 [·] 1.47		
Witte Addwit P	and te numpt.		~		1	8		2.61		
lasing Volum	e (gala):	3	<u>vs</u>			10		4.08		
Casing Volum	nes (gais):	91	'5		Casi	ng Volume = gallo	ns/foot * water co	siumn (feet)		
			FI	eld sampi	LING DATA					
Time	Elepsed Time (min)	Discharge Rate (gpm)	Totai Discharge (galions)	pH (SU)	Temp (°C)			Comments		
1120						Severa na severa de la constance				
01.25	5	4.5	72.4	1.70	23.4	1572				
0720	61	4.6	270	6.75	14.6	1.00 1.79.0				
0820	120	3.7	576	(e. 72	250	1574				
0920	180	3.4	738	6.75	25.6	1579				
1020	240	-3.4	942	1.171	25.7	157				
					<u> </u>					
			· · · ·							
التاكانية ويوري ويوري			•		<u> </u>					
	1									
			SA	MPLE INFO	l DRMATION			, Chambrach and a subscription of the		
	pie iD	Time	Container Type	Volume	No. of Containers	Analysis Method	·Preservative .	Comment		
BMD-2008-10 61		1070	plastic	250 mi	1	EPA 300.0	náñe,	filtered		
				, 						
]					
		1			1					

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~	Groundwa	ater Samp	oling Form	۱ ۱					
Project No:					Glient:	Freeport Copp	er Queen Bra	nch	
-					Date:	7-13-1	2		
Task No:	Rmn.	-2008-	1064		Weather:	Portly Cloudy			
Vell ID:	- AD MA	1000	IV VI		Sampler:	Mostopher 2	Sturin		
DWR No:		na a faga mining ta cana ta can		WELL D	Contraction of the local division of the loc	and the second		· · · · · · · · · · · · · · · · · · ·	
		71.77	1		Casing Capacity Casing Capacity Casing Capacity Gallons per Linear F				
Vell Depth (it i	bis):	<u> </u>	<u> </u>	<u>.</u>	Nominal	Size (inches) 2		Linear Foot	
asing Diamed	er (in):	5	1/			4		65 02	
itatic Water Lu		32	8.7			6	1.	47	
		هم ارس ز	12			8 10		61 08	
asing Volume	e (gals):	<u> </u>	i an		Casin	g Volume = gallon	s/foot * water col	umn (feet)	
Casing Volu	nes (gals):	36		LD SAMPL	NG DATA				
Time	Elapsed Time (min)	Discharge Rate	Total Discharge (gallons)	рН (SU)	Temp (°C)	Specific		ments	
A Statement and the statement of the statem		(gpm)	(Banoret)		and the second difference of the second differ	Lange - Congress Office and			
			•			·			
						•		<u></u>	
						· · ·		,	
	-		·		·····				
			l	L MPLE INFO	RMATION				
San	npie ID	Time	Container Type	Volume	No. of Containers	Anaiysis Method	·Preservative	Comments	
Bmg-20	198-10 GU		plastic	250 ml	1	EPA 300.0	none,	filtered	
		<u> </u>		<u> </u>		<u> </u>			
		1	<u> </u>	ļ	<u> </u>				
		<u> </u>		<u> </u>	 				
	nan a takan karang menak tipa karang manang manang karang menang karang menang menang menang menang menang men				<u> </u>				
Additional Co		B	<u>O Pu</u>	mp	choduled	1. 1.	*		
	29,2			. 4	Claude led	to Fix			

				Client:	Freeport Cop	Freeport Copper Queen Branch			
				Date:	.8-1-	4-12			
BMO-	2008-1	16		Weather:	/				
				Sampier:					
		9 (WELL C	DATA	<u> </u>		an a		
		n in the second seco			Casir	ng Capacity			
Hs):		<u>.</u>		Nomina			er Linear Foot 0.16		
ər (in):	50				4	E	0.65		
eral dit francala	56	9.70		· · ·	5 N	1	1.0 2 1.47		
aei fir nuibt:				1	8	3	2.61		
(gais):		174.1		<u> </u>	10		1.08		
ies (gals):	Ĺ				ng Volume = gallo	ns/foot * water co	lumn (fest)		
	-	ĖI	eld Sampl	ÌNG DATA					
Elapsed Time (min)	Discharge Rate (gpm)	Totel Discharge (galions)	pH (3U)	Temp (°C)	Specific Conductance (rS/cm)	Comments			
						·	, ,		
10	<u>R</u>		7.40		330		 		
			7,92		ومعمد بارتكت كسار سيسبب بسبب بسب				
	<u> </u>				1-2-0-1				
75	8	600	7.35	246	331				
				· · · · · · · · · · · · · · · · · · ·	1				
		·							
					· · · · · · · · · · · · · · · · · · ·				
						· ·			
		SA	MPLE INFO	RMATION					
sle ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments		
mn-2007-116		plastic	250 mi	1	EPA 300.0	nána,	filtered		
				·	**		·		
							ч -		
							The second s		
nents:		190.3		·					
	els): er (in): evel (it imp): (gais): res (gais): Elapsed Time (rrin) 10 30 00 75 40 10 10 10 10 10 10 10 10 10 1	215): $7/2$ $2r$ (in): $5/6$ vel (ft bmp): $5/6$ (gats): $5/6$ (gats): $7/2$ ress (gats): $7/2$ ID $7/2$ 10	er (in): vel (it imp): 569.70 (gats): 194.1 (gats): 582 Fill Elapsed Time Rate (min) (gam) (gatons) 10 R 8030 8 24010 R 48030 8 24010 8 48030 8 24010 8 48030 8 24010 8 48030 8 24010 8 $48058Stanting Time ContainerType Satic$	WELL I sis): 740 sr (in): 5 vol (ft imp): 569.70 (gats): 194.1 (gats): 194.1 FIELD SAMPL Elapsed Time Discharge pH (min) Obscharge Total [min) Qischarge IO $Rate (gpm) (gations) IO R 20 240 30 8240 75 8200 75 8200 75 SAMPLE INFO samPLE INFO SAMPLE INFO % Q 735 % $	Sampier: WELL DATA sis): 740 Nomina Sampier: Sampier: Val (no. Nomina Sampier: Sampier: Nomina Sampier: Sampier: Nomina Sampier: Sampier: Sampier: Nomina Sampier: Sampier: Sampier: Sampier: IPU: Sampier: Sampier: Sampier: Sampier: Sampier: Sampier: Sampier: Sampier: Sampier: No. of Sampier: Sampier: Sampier: Sampier: <td>Sampler: <math>Mu.Stephu WELL DATA WELL DATA Casin Image: Step (inches) ar (in): 569.70 Casin Val (ft bmp): 569.70 Gates): Image: State (inches) (gatis): Image: State (inches) Image: State (inches) </math></td> <td>Sampler: U.S.S. U.S. S. U.S. WELL DATA Cering Capacity Also: Carlier p Nominal Stag (inches) Gallons p ar (m): 5 Gallons p 194.1 Casing Volume = gallonaffoot * water colspan="2">a FIELD SAMPLING DATA Eapaced Three (gallons) Gallonsp (FIELD SAMPLING DATA Eapaced Three (gallons) Gallonsp (Gallonsp IPH Temp (CO Ganduration of the second s</td>	Sampler: $Mu.Stephu WELL DATA WELL DATA Casin Image: Step (inches) ar (in): 569.70 Casin Val (ft bmp): 569.70 Gates): Image: State (inches) (gatis): Image: State (inches) Image: State (inches) $	Sampler: U.S.S. U.S. S. U.S. WELL DATA Cering Capacity Also: Carlier p Nominal Stag (inches) Gallons p ar (m): 5 Gallons p 194.1 Casing Volume = gallonaffoot * water colspan="2">a FIELD SAMPLING DATA Eapaced Three (gallons) Gallonsp (FIELD SAMPLING DATA Eapaced Three (gallons) Gallonsp (Gallonsp IPH Temp (CO Ganduration of the second s		

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Project No:					Client	Freeport (Copper Queer	
Task No:		•			Date:	<u> </u>		n Branch
Well (D .	Rm	2 - 200	8-131	R			-11-12	
ADWR No:	- <u> </u>	<u> </u>	<u>~/></u>	2	Weather		(Apud)	
				inderse source and the second seco	Sampler	Gistoph	- L'Slign	14
			fina grada ana sa ang	WEL	L DATA			
Veli Depth (it	bls):		25.		Nom	Ca Inal Size (inches)	sing Capacity	
asing Diama	ter (int:	<i>p</i> -	F41			2	Gation	s per Linear Foot 0.16
						4		0.65
alic Water L	øvel (it bmp):		0.60			6		1.92 · · · · · · · · · · · · · · · · · · ·
sting Volum	• (gais):	۳ مد	70			8		2.91
Casing Volum	mon front-1.	2	10			10		4.88
	area (gara):	<u>.</u> DI	<u>V</u>	FIELD SAM	PLÍNG DATA	ising Volume = gal	ions/foot * water	· column (feef)
Elapsed Time Discharge Total						Tema Specific		
1310	(min)	Rate (gpm)	Oischerge (gallons)	9 / /m	(°C)	Conductance (µS/cm)	c	omments
1310	10	20	200	1127				
335	25	20	500	1 4.5 3	12:5	2160	-	· ·
1345	35	20	700	10 24	21.4	2180		
1355	45	20	999	1 int	19/2	2180		
			119		Tak	-law		
						1		
							 	
					<u> </u>			
	<u> </u>	a,			<u> </u>			
			8/	AMPLE INFO	RMATION		Militar all an ann an Addina an Addina ann an Addina ann an A	
Sample	o (D	Time	Container Type	Valume	No. of Containers	Analysis Method	· Creservative	Comments
3mg-201	27-13B	1255	plastic	070				
		+>>27	U	250 mi	1	EPA 300.0	náne,	filtered
						···		
······································								
			Band Brankton Baryar					
onal Comme	nis:							
Assess Brandstop								

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Project No:			· · ·		Client:	Freeport Co	nner Ausse P		
lask No:	0.0	10-2008	12.00		Date: <u>8-13-12</u>				
Vell ID:	<u></u> D//	U- ANO	<u>~13/1</u>		Weather: ``	- Lo unny			
DWR No:					Sampler:	Chrytapher /	Shurnold		
			Contracting of the second second	WELL	DATA				
ieli Depth (ii	bis):		1030		Nomin	Gas al Sizo (inches)	ing Gapacity Gallons o	er Linear Foot	
					1	2		Q.16	
using Diame	ter (in):		511		-	4		0.65	
atic Water L	svei (it bmp):	21	1.42		5			1.02	
		834.8				8	1	2.61	
ising Volum	e (gais):	~	0.34.8			19		4.08	
Casing Volu	mes (gais);	2	504			ing Volume = galic	ms/foot * water c	olumn (feet)	
				ELD SAMPI	LING DATA				
Time	Elapsed Time (min)	Discharge Rato (gpm)	Total Discharge (gallons)	рн (SU)	Temp (°C)	Specific Conductance (uS/am)	Cor	nments	
1515									
2735	140	5-7	798	<u>X-87</u>	240	1242		· · · · · · · · · · · · · · · · · · ·	
1835	200	<u>H.</u> /.	(140)	8.93	23.8	1242			
2935	240	3.8	1770 141	8.95	23.8	1255			
1/35	380	3,8	1872	8.81	14.5	1300			
235	440	2-8	2100	8.29	245	1304		÷ 2	
530	120	-2.8	2604	8.25	242	1/3/			
			·					الشتغي بلمعمد المحدري ومنعب	
			`````	······	· · ·				
							•		
	ebetterin destandar og som en		SA	MPLE INFO	RMATION				
Sam	ple ID	Time	Container Type	Volume	No. of Containers	Analysic Method	•Preservative	Comments	
BM0-2008-BM		1530	plastic	250 ml	1	EPA 300.0	néne,	filtered	
900 - Cong	13:09								
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	Groundwa	ter Samp	ling Form			2009 - Change and a second		
Project No:					Client:	Freeport Copp	er Queen Bra	nch
-			· · · · · · · · · · · · · · · · · · ·		Date:	7-9-1		
lask No:	<u>A</u> MAA	-2010-	1 10		Weather:	Ling	960	
Nell ID:	BIND	- 2010-	-[ ]"		Sampler:	hast due	111.	w7 .
DWR No:				WELL D		MAST ALVER		
				99 Hite and States and State		Casing	Capacity	
Neil Depth (it bl	5):		55C		Nominal Size (inches)			Linear Foot
		511				2 4	Ö.	65
lasing Diameter	r fand:	225.05				5		92 47
itatic Water Lev	rei (it omp):	10.05				8		<b>51</b>
lasing Volume (	(gais):	3	31:5			10		<u>98</u>
Casing Volum	ee (nais):		995		Casin	g Volume = gallon	s/toot - water cor	una (reed
Camina Acterio			FÆ	eld sampl	NG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Tetai Discharge (galions)	рН (SU)	Temp (°C)	Specific Conductance (µS/cm)	Core	ments
0700								
0710	10	10	ino.	6.37	20.j.	699		
0715	15	10	150	6-35	20.2	-20/		
0800	10	5	375	6,32	22.4	509		
0400	120	3	555	1 24	12.1	510		1
1000	180	3	735	1.34	24,3	5/2		
1130	240	3	1005	1,27	24.3	3/5		
	<u></u>	/	<u> </u>	77		6.5		and the second secon
		<u> </u>						
			<u> </u>	AMPLE INF	L XRMATION			
; Samj	ple (D	Time	Container Type	Volume	No. of Containers	Analysis Method	·Preservative	Comments
BM0-20		1130	plastic	250 mi	1	EPA 300.0	none,	filtered
VIIV-A	110-1881-		1					
		+				5-		·
	,	<u> </u>		1				
				-	+			
			1			and the state of the		
Additional Con	nments:	alibrated	Motor		. 32	<	*****	
					<u>. 56</u>	2		

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Samoling Form

**	Grounday			Andrease and a second designed as a second secon						
Project No:					Client:	Freeport Copp	er Queen Bra	nch		
Task No:					Data:		12			
Well ID:	B	MO 2010	-2M		Weather: Sunny Partly Chury					
ADWR No:			/		Sampier: Marstonie L. Starman					
an a				WELL D	ATA					
			380		Nominal	Cesin Size (Inches)	Capacity Gallons per	Linear Foot		
Nell Depth (R b	lis);		<u> </u>			2		16 65		
Casing Diamote	ır (in):	<u> </u>				4 5	1.	02		
Static Water Lo	vel (ft brnp):	273.20				6		47 61		
Casing Volume	(cals):		109			10		68		
-			327		Casin	g Volume = gallon	s/loot * water col	umn (feet)		
Casing Volum	ies (gais):		FÆ	LD SAMPL	ÌNG DATA					
Time	Elapsed Time (min)	Discharge Rate	Total Discharge	pH (SU)	Temp (°C)	Specific Conductance (uS/cm)	Comments			
107	furnes and a second	(gpm)	(gallons)							
1235	10	22	270	6.41	21.9	2.19		· ·		
1255	1	27	540	1.42	21.8	2118				
1305	20 30	27	\$10	7. 241	218	2,19				
	·	1								
			÷					_		
·										
		1	SA	MPLE INFO	RMATION					
Sam	ple 1D	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments		
BMD 2010-2M		1305	plastic	250 ml	1	EPA 300.0	néne,	filtered		
-		L		ļ	<b> </b>		*	•		
					ļ					
			ļ	<b></b>						
Additional Con	nments:		e					performance of the second s		
		·		{	) le. 7					

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	sh		
Task No:	)				Date:	7/5/12				
Well ID:	BMO-Z	010-36	3		Weather:	Partly Clou	udge 765			
ADWR No:					Sampler:	MMUNH	<u> </u>	Without ( 1997)		
				WELL DA	ra 👘	A Casing Capacity				
Well De	epth (ft bls):	33	0		Nominal	Gallons per L				
Casing D	Diameter (in):	5				2 4	0.16 0.65	5		
Static Wate	r Level (ft bmp):		8.84			5 6	1.02			
		210		48		8 10	2.61			
	/olume (gal):		<u> </u>	••	Casin	g Volume = galions				
Total Volume Purged (gal):     7/2.5     Casing Volume = gallons/foot * water column (feet)       FIELD SAMPLING DATA										
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Comm	ents		
1036							discolored			
1052	120	7.5		7.45	22.6	416.7	slight yell	ow, clear		
1105	225	7.5		7.54	22.3	418.2	<u>all clea</u>	л ⁻		
1121	337,5	7.5		7.52	22,4	418.6				
1136	450	7.5		7.51	22.4	418.9				
1152	570	7.5		7.55	22.4	419.7	<u>erreinen die Staten aus</u> Geboord	.'		
1206	675	7.5		7.51	22.21	419.1				
				······			······			
1214							Pump Off			
	17	I ER STABILIZ/	I ATION: Three c	I onsecutive rea	I Idings within (	).2 su pH, 2 degree	, ,	m)		
			SAN	IPLE INFOR	MATION					
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
BM0-20	10-3B	1211	POLY	2550	1	300.0	N	Y		
		Γ.	ATER LEVEL	I MEASUREI	L MENT COLL	ECTION				
P Water In	evel measuremen			Hadden and Angeles and						
-	er level measurem		No access to w	ellhead/No po	t in wellhead					
1	er level measurem							- 7		
<ul> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> </ul>										
WELL PURGING INFORMATION										
Purged 3 well volumes and field parameters stabilized.										
1	3 well volumes ba			nd field parem	eters stabilize	ed.				
D Purged	well until field par	ameters stabil	1260.				:			
	Comments:									
								<u>.</u>		

	Project No:	055038			· _ (	Client:	-reeport Coppe	r Queen Branc	h		
Def ID         DMR 0-2010-3M         Weather         Party Cloudy         Sompler           DMR No:         Sampler:         MANL_VNH           Methods of the second	Task No:	į				Date:	7/8/12				
DWR No:         Sampler:         NUXC_VIN14           Well Depth (It bis):         531         Nominal Size (incluse)         Galons per Linear Foot           Casing Diameter (in):         5         102         0.65           Static Used (It bis):         122-05         8         2.61           Casing Volume (gal):         122-05         8         1.47           Casing Volume (gal):         128         2.61         1.02           Casing Volume (gal):         128         2.61         1.02           Casing Volume (gal):         128         2.61         1.02           Table Volume Purged (gal):         Cesing Volume = galons/floot * water column (fleet)         1.02           Table Volume Purged (gal):         (galons):         1.02         1.02           Tune         Eugend Time         Decharge         Fold         PH           (min)         (galons):         1.02         1.352.3         Vellawy (eloc., abler.		RMO-7	010-7	sm	I	Weather:	Partly (	Jouder &	<u>ک</u>		
Unit We         Well Data         Well Data         Chang Capacity           Well Depth (ft bis):         531         Nominal Size (inches)         Galone per Linear Foxt           Casing Diaméter (in):         5         1.02         4         0.66           Static Water Level (ft bmp):         12.2 : 0.5         6         1.47           Casing Diaméter (in):         5         1.02         4         0.86           Total Volume (gal):         112.2 : 0.5         6         1.47           Casing Volume (gal):         112.2 : 0.5         6         1.47           Total Volume Purged (gal):         Casing Volume Purged (gal):         Casing Volume Purged (gal):         Casing Volume Purged (gal):         Casing Volume Purged (gal):           The         Elapsed Time         Discharge         Total         (SU)         (CO)         Constraints         Comments           12.4.3         #####         3.00         7.5 : 154         7.94         23.1         3.52.3         Yullowy calor, subter segrab           13.0.3         #40         7.5         154         7.94         23.1         3.52.1.3         Yullowy calor, slight with work           13.0.3         #0.0         7.5         150         7.72.2         23.6         3.58.1.0						Sampler: MMC/VNH					
Weil Depth (It bis):       531       Normal Size (inches)       Galon, Periods         Casing Diameter (in):       5       4       0.65         Static Water Level (It bmp):       122.05       6       1.47         Casing Diameter (in):       122.05       6       1.47         Casing Volume (gal):       U18       x3 = 12.54       10       4.08         Total Volume Purged (gal):       Interpret (interpret (inter(interpret (interpret (interpret (interpret (inter) (in	ADWK NO:										
Weak Depin (t) (bs).       0.16         Casing Diamèter (m):       0.16         Static Water Level (ft bmp):       12.2.05         Static Water Level (ft bmp):       12.2.05         Casing Volume (gal):       4.18         X3 = 12.54       10         Casing Volume (gal):       4.18         X3 = 12.54       10         Casing Volume (gal):       118         X3 = 12.54       10         Casing Volume Priged (gal):       FIED SAMPLING DATA!         Time       Elapsed Time         Bischarge       Total         gmm On:       15.4         12.4.3       4.55         3.00       7.7.7.4         23.2       1.40         7.5       1.56         7.7       1.53         7.7       1.56         7.7.7       2.3.1         3.2.3       1.40         7.5       1.56         7.7.7       2.3.1         3.2.4       1.40         1.3.2.3       1.40         7.5       1.50         7.7       2.3.6         3.60       7.5         1.7.7       2.3.7         3.8.7       0.41.3			621			Nominal			near Foot		
Static Water Level (ft bmp):       1272:05       5       1.47         Static Water Level (ft bmp):       1272:05       6       1.47         Casing Volume (gal):       4)8       x3 = 1254       10       4.08         Total Volume Purged (gal):       Eleberod filme       Discharge       pH       Cesing Volume = gallons/foot * water column (feel)         Trine       Elapsed Time       Discharge       Gallons       pH       Tornp       Conductance       Comments         122:3       Rump Onit       10       1,5       1,50       7,94       2,3,1       3,52,2,3       Villeouv (alor, refler: egab         12:3       4,00       7,5       1,50       7,94       2,3,1       3,52,2,3       Villeouv (alor, refler: egab         13:0:3       HO       7,5       4,50       7,71/2       2,3,6       3,81,1.0       w       u       u         13:0:3       HO       7,5       1,50       7,173       23,6       3,81,0       w       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u       u <td>Well De</td> <td>pth (ft bis):</td> <td></td> <td></td> <td></td> <td>Teornation</td> <td></td> <td>0.16</td> <td></td> <td></td>	Well De	pth (ft bis):				Teornation		0.16			
Casing Volume (gal):       418       x3 = 1254       8       0       4.08         Total Volume Purget (gal):         Time       Discharge       Casing Volume = gallons/foot ' water column (feet)         Time       Discharge       Cosing Volume = gallons/foot ' water column (feet)         Time       Discharge       Cosing Volume = gallons/foot ' water column (feet)         Time       Discharge       Cosing Volume = gallons/foot ' water column (feet)         Time       Discharge       Conductance       Comments         Time       Discharge       Conductance       Comments         Time       Time       Time       Conductance       Comments         Time       Time       Time       Conductance         Time       Time       Comments         Time       Time       Conductance         Time       Time       Conductance         Time       Time       Conductance	Casing D	iameter (in):	5				4				
Casing Volume (gal):	Static Water	r Level (ft bmp):	12	2:05.			- 1		4		
Casing Volume = gallons/foot * water column (feet)           Total Volume Purged (gal):           FIELD SAMPLING DATA           Trime         Discharge (gallons)         Colspan="2">Specific (gallons)           Trime         Discharge (gallons)         Colspan="2">Conductance (gallons)         Comments           Trime         Discharge (gallons)         Gallons/fig. Conductance (gallons)         Comments           Trime         Discharge (gallons)         Gallons/fig. Comments           Total         Total         Specific (gallons)         Conductance (gallons)         Comments           Total         Total         Total         Specific (gallons)         Comments           Total         Total         Specific (gallons)         Comments           Total         Total         Specific (gallons)         Comments           Total         Total         Comments           Total         Callon 7, 5, 7, 7, 7, 2, 23, 1, 3, 5, 7, 7, 7, 7, 7, 7, 7, 7, 23, 7, 3, 7, 7, 7, 7, 7, 7, 7, 7,	Coning	(aluma (gal):	<u>Ц18</u>	x3 = 17	254		· · ·				
FIELD SAMPLING DATA           Time         Elapsed Time (min)         Rate (gern)         Discharge (gellons)         PH (SU)         Temp (C)         Specific Conductance (µS/m)         Comments           124.3         ###D 20         7.5         15d         7.9.4         2.3.1         3.52.5         Mellewy celer_raftersegade           124.3         ###D 20         7.5         3.00         7.7.4         2.3.1         3.52.5         Mellewy celer_raftersegade           13.073         HQ         7.5         3.00         7.7.4         2.3.6         3.81.7         11           13.2.3         4.0         7.5         4.50         7.7.72         2.3.6         3.81.0         W         W           13.2.3         4.0         7.5         4.50         7.72         2.3.6         3.81.0         W         W           140.3         HQD         7.5         17.00         7.4.3         3.50.7         5.2.4         1.4.43         3.80.3         1.5.5         1.5.6         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0         1.5.2.0	-	-		)		Casing	g Volume = gallons	/foot * water colum	in (feet)		
Time         Elapsed Time         Discharge Rate (min)         Total (gem)         PH (sU)         Temp (sU)         Specific Conductance (sUSom)         Comments           12.2.2.3         Pump On	Total Volum	e Purged (gal):		E E E E E E E E E	D SAMPLIN	G DATA					
VIZ-23       Pump-On         12.413       ##0.20       7.5       154       7.94       23.1       3.52.3       Yellowy color, ratfer engrade         13.003       HQ       7.5       300       7.744       23.5       38.1.7       14       14       14         13.023       HQ       7.5       4.50       7.724       23.5       38.1.7       14       14       14         13.023       HQ       7.5       4.50       7.724       23.6       380.9       Mostly clear, burnt Stepher abor         13.43       9.0       7.5       4.50       7.722       23.9       3.80.7       14       14         1403       HOD       7.5       7.50       7.72       23.9       3.80.7       5       Clear, Slight support of the super of the support of the supor	Time	1	Rate	Total Discharge	pH	Temp	Conductance	Comme	ents	:	
12H3       #### 28       7.5       156       7.94       23.1       352.3       Yellewy color, ratio egapting and the	*	Pump On	(9pm)								
12.103       140       7.5       300       7.744       23.5       38.1.7       11       17       37.1         13.03       140       7.5       150       7.72       23.6       380.9       Modyly dear, burnt Sulphur plot         132.3       60       7.5       150       7.72       23.6       380.9       Modyly dear, burnt Sulphur plot         132.3       60       7.5       150       7.72       23.6       381.0       M       H         132.3       60       7.5       750       7.72       23.9       380.9       Modyly dear, burnt Sulphur plot         1403       140       7.5       750       7.72       23.9       380.5       Clear, slight-sulphur plot         1443       140       7.5       17.00       7.40       24.3       380.3       Heavy faint-sulphur plot         1433       150       7.5       12.00       7.60       23.7       3.79.9       Clear, slight-sulphur plot         1433       140       7.5       12.75       7.66       23.7       3.79.9       Clear, slight-sulphur plot         1513       140       7.5       12.75       7.66       23.7       3.81.8       Pump Off - 52.0 <td c<="" td=""><td></td><td>With Compared and State Report to the State</td><td>ח.5</td><td>1<d< td=""><td>7.94</td><td>23.1</td><td>352.3</td><td>Yellewir color.</td><td>ro Hen ear mo</td><td>-</td></d<></td></td>	<td></td> <td>With Compared and State Report to the State</td> <td>ח.5</td> <td>1<d< td=""><td>7.94</td><td>23.1</td><td>352.3</td><td>Yellewir color.</td><td>ro Hen ear mo</td><td>-</td></d<></td>		With Compared and State Report to the State	ח.5	1 <d< td=""><td>7.94</td><td>23.1</td><td>352.3</td><td>Yellewir color.</td><td>ro Hen ear mo</td><td>-</td></d<>	7.94	23.1	352.3	Yellewir color.	ro Hen ear mo	-
132.3       140       7.5       450       7.72       23.6       380.9       Modify clear, burnt Support         132.3       140       7.5       450       7.72       23.6       380.9       Modify clear, burnt Support       11         132.3       140       7.5       450       7.73       23.6       381.0       n       n       n         1403       1400       7.5       750       7.72       23.9       350.5       Clear, slight support       n         1403       140       7.5       150       7.72       23.9       350.5       Clear, slight support       n         143       140       7.5       1200       7.60       241.3       380.3       1         143       150       7.5       1200       7.66       23.7       379.9       Clear, funct support obr         1513       170       7.5       1200       7.66       23.7       379.9       Pump Off - 1520          7.60       241.3       380.8       Pump Off - 1520       1500       1500          Sample INFORMATION       No. of       Ontainers       Analysis Method       Preservative       Filtered         BNC-2010-3M									JJ,,		
1343       90       7.5       600       7.7.7.3       23.6       381.0       m       m         1403       100       7.5       750       7.72       23.9       380.5       Clear, slightsulpturede         1413       140       7.5       150       7.72       23.9       380.5       Clear, slightsulpturede         1443       140       7.5       1050       7.53       24.3       378.1       m         1455       140       7.5       1050       7.60       24.3       380.3       m         1457       150       7.5       12.00       7.60       24.3       380.3       m       m       moder         1503       200       7.5       12.00       7.60       23.7       3.81.9       Pump Off - 152.0         Filtered container         Filtered container         Time       Container       No. of         Time       Container       No. of       Analysis Method       Preservative       Filtered         Water level measurement collected.         Water level measurement collected.       No cot analysis Method       Preservative       M         Water le								Mostly Jear b	urnt Sulphurn	doct	
Line       Line <thline< th="">       Line       Line</thline<>		~			1	the second s	•	7			
Integration       Integration       Integration       Integration       Integration         1443       140       7.5       105%       7.63       24.3       380.3         1437       1/50       7.5       1/20       7.60       24.3       380.3         1503       -2001///200       7.5       1/200       7.60       23.7       3.79.9       Usen, faint subphreader         1513       140       7.5       12.75       7.66       23.7       3.81.8       Pump Off - 1520         SAMPLE INFORMATION         SAMPLE INFORMATION         Water Isoland - 200 µS/cm)         SAMPLE INFORMATION         WATER LEVEL MEASUREMENT COLLECTION         WELL PURGING INFORMATION         WELL PURGING INFORMATION         Other:         WELL PURGING INFORMATION         Other:         WELL PURGING INFORMATION         Purged 3 well volumes based on previous water level and field parameter					T			Clear Slipp	feilphicade		
H437       ISO       7.5       IMS       7.60       24.3       380.3         I503       200160       7.5       I2.00       7.60       23.7       379.9       Clew, faint sulphur obr         I513       I40       7.5       I275       7.60       23.7       379.9       Clew, faint sulphur obr         FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)         SAMPLE INFORMATION         SAMPLE INFORMATION         Water is a constant of the const			1			1		Critic / Zingh	<u></u>	ľ	
1503       2001       7,5       1200       7.6(c)       23.7       379.9       Clear, faint subpur obr         1513       170       7.5       1275       7.66       23.7       381.9       Pump Off - 520         FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)         SAMPLE INFORMATION         SAMPLE INFORMATION         SAMPLE INFORMATION         BMO-2010-3M 1519       Pow       250       1       300-0       N       Y         WATER LEVEL MEASUREMENT COLLECTION         WATER LEVEL MEASUREMENT COLLECTION         Water level measurement collected.       No water level measurement collected.       No water level measurement collected.       No water level measurement collected.       Well PURGING INFORMATION         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.         Purged well until field parameters stabilized.         Purged well until field parameters stabilized.         Purged well until field parameters stabilized.											
Image: Second			1		1			Clear frist	sul about other		
15       170       17.5       1245       14260       1237       10017.01         FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.2 su pH, 2 degrees C, and 200 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of Containers       Analysis Method       Preservative       Filtered (V/n)         BMO-2010-3M       1519       PO-4       250       1       300-0       N       /         WATER LEVEL MEASUREMENT COLLECTION         WATER LEVEL MEASUREMENT COLLECTION         Ø       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         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Other.       Yeinged well until field parameters stabilized.			<u> </u>		1						
SAMPLE INFORMATION         Sample ID       Time       Container Type       Volume       No. of Containers       Analysis Method       Preservative       Filtered (yn)         BNO-2010-3M       1519       POW       250       1       300-0       N       Y         WATER LEVEL MEASUREMENT COLLECTION         Water level measurement collected.       No access to wellhead/No port in wellhead       No water level measurement collected. No access to wellhead/No port in wellhead       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.       Purged well until field parameters stabilized.         Other:       Other:       V       V       V	1513	1 t/)	FR STABILIZ	ATION: Three c	1 4. (e(o	dings within (	).2 su pH, 2 degree		m)	1	
Sample ID       Time       Container Type       Volume       Analysis Method       Preservative       (v/n)         BMC-2010-3M       1519       POH       250       1       300-0       N       Y         WATER LEVEL MEASUREMENT COLLECTION       WATER LEVEL MEASUREMENT COLLECTION       Image: College (1)				and have also as a first of a construction of the second s	and the second						
BMC - 2.010 - 3M       IS19       Pory       Z50       I       300-0       N       Y         WATER LEVEL MEASUREMENT COLLECTION         Water level measurement collected.       No water level measurement collected. No access to wellhead/No port in wellhead	Sa	imple ID	Time		Volume		Analysis Method	Preservative			
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 4 well until field parameters stabilized.         Other:			icia		260	1	300-0	N	У		
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:	13MO-2	_010-3M	11214	1 1041	- 20				//	1	
<ul> <li>No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>No water level measurement collected. Obstruction in well.</li> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> </ul> 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:				 VATER LEVEI	L MEASURE	MENT COLL	L ECTION				
<ul> <li>No water level measurement collected. Obstruction in well.</li> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> <li>WELL PURGING INFORMATION</li> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>				No access to w	ellhead/No no	rt in wellhead					
<ul> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> <li>WELL PURGING INFORMATION</li> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>											
<ul> <li>Other:</li> <li>WELL PURGING INFORMATION</li> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>	1							· · ·		:	
<ul> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>	1		and the star of the star of the star of the star			inder provident and second					
<ul> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>				ugu iti nga		FORMATION					
<ul> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>	D Purged	i 3 well volumes a	nd field param	eters stabilized.	. <b>.</b>	- to a state the	ad				
Other:					and field parent	neters stadiliz	eu.			4.29 ⁸⁷	
	1	i weli until field pa	rameters stabl	nzeu.							
	L						*****				
	Additiona	i Comments:									



Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:	h.0				Date:	17270L12	-	
Well ID:	Chambe	15			Weather:	Bartly Cli	oudy , his	16 80's
ADWR No:					Sampler:	WUH	ن م	/
				WELL DAT	A	Casing	Canacity	
Well De	epth (ft bis):	248	>		Nominal	Size (inches)	Gallons per Li	near Foot
Casing F	Diameter (in):					2 4	0.16	
_						5	1.02 1.47	1
Static Wate	r Level (ft bmp):					8	2.61	
Casing \	/olume (gal):		x3 =		<b>A</b>		4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/toot - water colum	
		Discharge	Total	_D SAMPLIN	GDAIA	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
1327	Pump On							
1335	8	1.3	10,4	7.27	22.7	430		
i340	13	1.03	16.9	7.29	22,5	410		
1345	18	1.3	23.4	7.30	22.5	420		
1347	2.0	1.3	26	7.31	224	410		
					22.4			
							Pump Off	
	FIELD PARAMET	I ER STABILIZ/	TION: Three c	I onsecutive rea	idings within (	).2 su pH, 2 degree	s C, and 200 μS/c	n)
			SAI	MPLE INFOR	MATION			
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ünaum	hard	1350	Poh;	250mL	l	300.0	NA	Y
		N T	I ATER LEVEI	MEASURE	MENT COLL	ECTION		
□ Water I	evel measuremen							
	er level measurem		No access to w	ellhead/No po	rt in wellhead			
1	er level measurem							
	er level measurem	ent collected.	Well is pumping	g.				
Other:			WELL	PURGING IN	FORMATION			
	3 well volumes a	nd field parame	eters stabilized.	ning kan der	a a sa mada na di Shi ka ƙa	ners stratelinget beinger bereit dem Utgeher ind	o provinski male na pravože po jedelo (vrišt	an ang site battan na site battan kang binang binang site battan si
D Purged	3 well volumes b	ased on previo	us water level a	ind field parem	eters stabilize	ed.		
4	well until field par	ameters stabil	ized.					
Other:	0	t	S-la -					
Additional	Comments:	From	sink in	<u>Carlen:</u>				



Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch
Task No:	1.0				Date:	12 2001	Z	
Well ID:	COB N	iw-l			Weather:	Hot, Sun.		
ADWR No:					Sampler:	VNH		
				WELL DA	ΓΑ	Coolor	Capacity	
Well D	epth (ft bis):	H 20	/		Nominal	inear Foot		
Casing	Diameter (in):	T"				2 4	0.1	1
		2.38	.24			5 6	1.0 1.4	
	r Level (ft bmp):			105		8	2.6	1
Casing V	/olume (gal):		x3 = 14	140			4.0	
Total Volun	ne Purged (gal):	1425				g Volume = gallon:	S/TOOL " Water Colur	nn (ieet)
		Discharge	Total	LD SAMPLIN	GUAIA	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comm	ents
1045	Pump On							
11 66	15	95	142.5	6.82	24,6	2230		
1115	30	9.5	285	G165	23,4	[810		
1145	60	9,5	570	6.64	23,5	1780		
1245	120	2.5	1140	6.54	24.2	1740		
1300	135	9.5	1282,5	6.60	23,2	1770		
1375	150	915	1425	6,74	23,4	1760		
							Pump Off	
		ER STABILIZ	ATION: Three o	onsecutive rea	dinas within (	).2 su pH, 2 degree	i · ·	m)
				APLE INFOR	organ Maantopata (dag Ku26a)			
			Container		No. of	and declarated and a second second		Filtered
Sa	mple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
COB M	.w- (	1319	Poly	250mL	l	30Ø. Ø	NA	Ý
								L.
		, N	ATER LEVEL	MEASURE	MENT COLL	ECTION		
🐨 Water I	evel measuremen		nik und seit ishour kundu				Alaskai Si Merenzink sentar Herei	
	er level measurem		No access to we	ellhead/No por	t in wellhead			
	er level measurem							
□ No wate □ Other:	er level measurem	ent collected.	Well is pumping	ļ.				
			WELL	PURGING INF	ORMATION			
Purged	3 weli volumes ar	nd field parame	eters stabilized.	gen gerniskaat (pisteris)	s octobrigger sinder statiet i statiet. :	niga (per vict) atapi vici) (1993-2013/13	need on a standard and a standard standard standard standard standard standard standard standard standard stand Standard standard stan	a d'an maranana ikina manang ang sa
D Purged	3 well volumes ba	ised on previo	us water level a	nd field parem	eters stabilize	ed.		
1 -	well until field par	ameters stabili	zed.					
Other:	Commerte					¥+++++++++++++++++++++++++++++++++++++		
Auditional	Comments:							

Project No:	055038				Client:	<ul> <li>Freeport Coppe</li> </ul>	r Queen Branc	h
Task No:	1.0	<u></u>			Date:	12JULIZ		
Well ID:	COB MU	N-2			- Weather:	Hot, Sunny	, windy	·
ADWR No:					Sampler: \	INH	gfa-a	
				WELL DAT				
Well De	pth (ft bls):	17	0'		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
			)î			2 4	0.16 0.65	
Casing D	iameter (in):		a rd			5	1.02	
Static Water	Level (ft bmp):	129.58		-70.		6 8	1.47 2.61	
Casing V	olume (gal):	26	x3 =	78		10	4.08	
Total Volum	e Purged (gal):	123,5			g Volume = gallons	/foot * water colum	in (feet)	
				D SAMPLIN	g data			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0942	Pump On							
0947	5	6.5	32,5	7.30	21.5	(a40		
0952	10	6.5	65	7.31	21.3	650		
0957	15	6.5	97.5	7.36	21,2	636	A	
1001	19	6.5	123.5					
							Pump Off	
F	I FIELD PARAMET	I TER STABILIZ	ATION: Three c	onsecutive rea	dings within (	).2 su pH, 2 degree	s C, and 200 µS/cr	n)
			SAN	<b>NPLE INFOR</b>	MATION			
Sar	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
(OB N	AW-2	1006	POLY	250mL		300,0	NA	Ý
			/					
		Γ.	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Ø Water le	vel measuremen		NAME AND AND AND ADDRESS OF A DECEMBER OF					
	r level measurem		No access to w	ellhead/No poi	t in wellhead			
	r level measurem							
<ul> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> </ul>								
WELL PURGING INFORMATION								
Purged	3 well volumes a	nd field parame	eters stabilized.	nan berde onder state for see for see	a ( 1999) ( 1999) ( 1992) ( 1992) ( 1997)	na ang ng tanggana ani pancin (SATARSA daria) ni hina (SATARSA daria) ni hina (SATARSA daria) ni hina (SATARSA	a nanga ora sa sa ana ang ang ang ang ang ang ang ang an	
D Purged	3 well volumes b	ased on previo	us water level a	nd field parem	eters stabilize	ed.		
-	well until field par	rameters stabil	ized.					
Other:	<u> </u>							
Additional	Comments:					····		



Project No:	055038				Client:	Freeport Coppe	er Queen Brand	:h	
Task No:	1.0				Date:	12 JUL	12		
Well ID:	COB-M	W-3			Weather:	Sunny, Wi	rdy 80	۱ ۲	
ADWR No:					Sampler:	VNH '			
				WELL DA	TA.				
Well De	epth (ft bis):	26	9'		Nominal	Size (inches)	Capacity Gallons per Linear Foot		
	Diameter (in):		4"		2 4		0.16	1	
		133.8				5	1.02 1.47	1	
Static Wate	r Level (ft bmp):						2.61	l	
Casing V	/olume (gal):	<u>89 ga</u>		26 Figu					
Total Volum	ne Purged (gal):	<u>360</u>	) 		Casing Volume = gallons/foot * water column (fee				
		Discharge	FIEL	_D SAMPLIN	Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comm	ents	
0841	Pump On								
084 Ce	5	15	75	7.29	21.2	-560-460	Clovely brown, e		
0851	10	15	150	7.38	21,3	630	Less brown, st		
6656	(5	15	225	4.37	21,5	570	colorless, dec	w. worles	
0901	20	15	300	7.34	21.4	450	~		
0905	24	15	360						
							Pump Off		
	FIELD PARAMET	L ER STABILIZ/	ATION: Three c	I onsecutive rea	l adings within (	).2 su pH, 2 degree	· · · · · · · · · · · · · · · · · · ·	m)	
			and comparison and and the share	MPLE INFOR	-l-strengtalagalapitetet				
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
COB . MI	u. A	0909	Poly	250ml	<u> </u>	300.0	NA		
UB /VI	<u>w-5</u>		104	1 A JUME		00000		t	
			ATER LEVEL	_WEASUKE					
	evel measuremen er level measurem		No access to w	ellhead/No po	rt in wellhead				
	er level measurem					1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -			
	er level measurem								
Other:	Other:     WELL PURGING INFORMATION								
	WELL PURGING INFORMATION								
¥ *	3 well volumes an 3 well volumes ba			nd field parem	eters stabilize	ed.			
_	well until field par								
D Other:						······			
Additional	Comments:								
·····									



Project No:	055038				Client:	- Freeport Coppe	er Queen Brand	:h
Task No:	1.0				· Date:	12-5412		
Well ID:	<u> </u>	NL			Weather:	Partly Clou		1
ADWR No:					Sampler:	WH		/
				WELL DAT				
Well De	epth (ft bls):	[50	)		Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
	,	4" 4"				2 4	0.16	3
_	)iameter (in):	78.85'				5	1.02	2
Static Water	r Level (ft bmp):					6 8	1.4 2.6	1
Casing V	Casing Volume (gal): <u>5</u> ]			54		10.	4.0	
Total Volum	ne Purged (gal):	150				g Volume = gallons	s/foot * water colun	nn (feet)
			n a fean Calcin Calcin a Chronian Anna Anna Anna Anna	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Comm	ents
1405	Pump On							
1410	5	7	35	6.79	22.3	1/80		
1415	10	1.5	50	6,90	21,9	1060	Significant	<u>disdrarge A</u>
1423	20	1.5	65	7,27	22,3	1150	~	
1435	30	1.5	80	7.31	23.0	1160		
1445	40	1.5	95	7.17	23,0	1(20		
1505	60	1.5	125	6,92	23.2	1080		
1515	70	1.5	140	7,00	23.1	1090		
1525	80	1,5	155	7.07	23,2	1060	Pump Off	
	FIFI D PARAMET	ER STABILIZ	ATION: Three co	I onsecutive rea	l dings within (	).2 su pH, 2 degree	· ·	m)
			Aberlandingennen ableitigen stellt.	APLE INFOR	a a a a a a a a a a a a a a a a a a a			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
COB	WL	1530	Poly	250 mL	(	320.0	NA	Y
		1000						
		l.	L /ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	evel measuremen							
4 f "	er level measurem		No access to we	ellhead/No por	t in wellhead			
No wate	er level measurem	ent collected.	Obstruction in w	vell.				
	er level measurem	ent collected.	Well is pumping	L.				
Other:     WELL PURGING INFORMATION								
TR Purged 3 well volumes and field parameters stabilized.								
	D Purged 3 well volumes based on previous water level and field paremeters stabilized.							
	well until field par	ameters stabili	zed.					
Other:	Commenter							
Additional	Comments:					·····		
······								

Project No:	055038				Client:	Freeport Coppe	r Queen Branch	1
Task No:	1.0				Date:	18-JUL12		
Well ID:	Couper				Weather:	Partly de	vdy, 903	
ADWR No:	<u> </u>				Sampler.	VNH		
ADWR NU.				WELL DAT				
	epth (ft bls):	325			Nominal	Casing ( Size (inches)	Gallons per Lir	near Foot
		<u> </u>	ł			2 4	0.16 0.65	
Casing I	Diameter (in):	<u> </u>				5	1.02 1.47	
Static Wate	er Level (ft bmp):					6 8	2.61	
Casing	Volume (gal):		x3 =			10	4.08	
Total Volu	ne Purged (gal):				Casing Volume = gallons/foot * wa		/foot * water colum	n (reet)
			and and a set of the provident of	D SAMPLIN	G DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
1250	Pump On							
1355	5	8	40	7.44	22.9	420		
1400	10	8	80	7.42		420		
1405	15	8	120	7,45	22.9	2130		
							Pump Off	
	FIELD PARAME	L TER STABILIZ	I ATION: Three c	onsecutive re	adings within	0.2 su pH, 2 degree	es C, and 200 µS/c	m)
				VIPLE INFOR				
S	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	Dec.C	1408	Poly	250 ML		300.0	NA	<u> </u>
- CAN			1					
			L VATER LEVE		MENT COL	LECTION		
	· level measureme			n haans ale siises				
Water	iter level measurel	ment collected.	No access to w	vellhead/No po	ort in wellhead	t		
1 <b>No wa</b>	ater level measure	ment collected.	Obstruction in	well.				
	ater level measure	ment collected.	. Well is pumpin	g.				
Other			WELL	PURGING IN	FORMATION	4		
	ed 3 well volumes a	and field param	eters stabilized		n netyt goed block, rittle (3822)	an a		
D Purge	ed 3 weil volumes l	based on previo	ous water level a	and field pare	meters stabiliz	zed.		
<i>V</i> X	ed well until field pa	arameters stab	ilized.					
Other								
Addition	al Comments:				······			
<u></u>								



Project No:	055038				Client:	Freeport Coppe	r Queen Brancl	1
Task No:	1,0				Date:	11 JUC,	12	
Well ID:	Cooper C	~			Weather:	Hot, sunny		
ADWR No:						UNH		
				WELL DAT				
	epth (ft bls):	220'			Nominal	Casing Size (inches)	Capacity Gallons per Lir	near Foot
						2 4	0.16 0.65	
Casing I	Diameter (in):					5	1.02	
Static Wate	r Level (ft bmp):	160.88'				6 8	1.47 2.61	
Casing	Volume (gal):	-87	x3 = 2	61		10	4.08	
Total Volur	ne Purged (gal):	29	7.5			g Volume = gallons	/foot * water colum	n (feet)
			FE	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
1504	Pump On							
1509	. 5	8.5	42.5	6.55	24.7	2050		
1514	10	8.5	85	6.69	23.8	2200		
1519	15	8,5	127.5	6,63	23,0	2040		
1524	20	4.5	170	6.63	22.4	2070		
1529	25	8.5	212.5	6,54	22.7	2020		
1534	30	8,5	255	6.50	23,2	2040		
1539	35	8.5	297.5	6.48	22.8	2030		
							Pump Off	
				nsecutive rea	dinas within (	) 2 su pH, 2 degree	es C, and 200 µS/cr	n)
			ur (Alexandrag, and a second data a	MPLE INFOR				
			Container		No. of			Filtered
S	ample ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
Cooper	$\sim$	1543	Poly	ZSOML	l	300.0	NA	Y
Capes			1.27					
		l V	L VATER LEVEL	I MEASURE	MENT COLL			
	level measuremer er level measuren		No access to w	ellhead/No po	rt in wellhead			
	er level measuren							
D No wat	ler level measuren	nent collected.	Well is pumping	].				
D 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.							
□ Other:								
Additiona	i Comments:							
-1								

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h	
Task No:	1.0				Date:	11700	12		
Well ID:	Dodson				Weather:	Partly clo	idy, wine	xy	
ADWR No:					Sampler:	WÍ			
				WELL DAT	A	Casino	Canacity		
Well De	epth (ft bis):	2	2001		Casing Capacity Nominal Size (inches) Gallons per Li				
Casing E	Diameter (in):		(o"	-		2 4	0.16	1	
		E 200		, v		5 6	1.02 1.47	1	
			1, 92.0			8	2.61	i l	
Casing \	Casing Volume (gal): $160$ x3 = $480$ gal					10 g Volume = gallons	4.08		
Total Volun	Total Volume Purged (gal): FIELD SAMPLI								
		Discharge	Total	-D'SAWELIN 		Specific			
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comm	ents	
0850	Pump On								
0900									
0910	20	5	100	6,90	21.8	1840			
6920	30	5150	150	7.06	2),7	1850	· · · · · · · · · · · · · · · · · · ·		
0930	40	5	200	7.07	21.7	1830			
0940	50	5	250	7,06	21.6	1820			
0950	leo.	5	300	7.07	21.5	1840			
000	70	5	350	7,10	21.5	1810			
10.20	90	5	450	7.09	21.7	1790	Pump Off		
1030		5 FR STABILIZ	506 ATION: Three c	$\overline{7,10}$	1	).2 su pH, 2 degree	1	m)	
			ege geogennegnisteriere	MPLE INFOR	en di du di constitui aquastati				
			Container	terse aquistations	No. of			Filtered	
Sa	Imple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)	
Dods	ion	1034	Poly	250 ml	)	300.0	NA	<u> </u>	
		U							
		N	/ATER LEVEL	MEASURE	MENT COLL	ECTION			
Cl Water li	evel measuremen	t collected.	usuolisesi ajoliserki Matriatasi	NA CHARLEU CHARLEN	n official statistical designation of the state of the stat	near a phòra geireadh (1913) a' stàibhlianna	an addirach dise na ddar Cashiri	n ann 1136 ann an 1897 Dùirth 1897 Dùirth	
	er level measuren		No access to w	ellhead/No por	t in wellhead				
	er level measuren								
	er level measuren	nent collected.	Well is pumping	<b>]</b> .					
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.									
-									
□ Other:									
	Comments;	Vsed	SWL +	Fron J-	$\frac{12-11}{12-11}$	92.07.	· · · · · · · · · · · · · · · · · · ·	n~ 1120 \$	
Sampled / purged from spigot on West Side of house. Owner was away to everything was glocked up.									
<u> </u>	zway is everything was locked op								

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
Task No:	1.0				Date:	510612		
Weli ID:	Dovala	55 79	1		Weather:		drizzly, ~	/ 70
ADWR No:					Sampler:	VNH &	MMC	
				WELLDAT	A	Casing	Capacity	
Well De	epth (ft bls):				Nominal	Size (inches)	Gallons per Li	
Casino D	Diameter (in):					2 4	0.16 0.65	
		32.	(o7 bm			5 6	1.02 1.47	
	r Level (ft bmp):			1		8	2.61	
Casing \	/olume (gal):		x3 =		Conin	10   g Volume = galions	4.08	
Total Volun	ne Purged (gal):	20101701705560000000000000000000000000000				g volume – galions	shoul water coun	
			ter og er og skildet steter en sole	D SAMPLIN	GDAIA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
	Pump On							
						-	-	
				Ĺ				
							Pump Off	
	FIELD PARAMET	ER STABILIZ	the following control of the providence of the	en de composicion de la sel	an a	0.2 su pH, 2 degree	es C, and 200 µS/d	
		<u></u>		NPLE INFOR				
Sa	Imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	/							
		N N	l /ATER LEVEL	I MEASUREI	L MENT COLI	LECTION		
DX Water I	evel measuremen	t collected.	14 49 6 17 4 18 4 19 4 19 4 19 4 19 4 19 4 19 4 19					
D No wat	er level measurem	ent collected.			rt in wellhead			
	er level measuren							
D No wat	er level measuren	ient collected.	vveii is pumping	<b>j</b> .				
			WELL	PURGING IN	ORMATION			
D Purged	3 well volumes a	nd field parame	eters stabilized.	ang diring an end an - All of Stational	in and the state of the state o	And a second s		
	3 well volumes b	ased on previo	us water level a	nd field parem	eters stabiliz	ed.		
-	l well until field pai	rameters stabil	ized.					
Other:	<b>A</b>							
Additional	Comments:	WLC	)					
			···					

Project No:	055038				Client:	Freeport Copp	er Queen Bran	ch
Task No:	1.0				Date:	5 JUL 12		······
Well ID:	Douglas	s 792	•		Weather:	Overcast,	drizzly,	~ 70
ADWR No:					Sampler:	VNH Q.	unc	
				WELL DA	A			
Well De	epth (ft bis):			~~	Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
Casing	Diameter (in):	/				2 4	0.1( 0.6	
		95	.64			5	1.0 1.4	2
Static vvate	r Level (ft bmp):			حر		8	2.6	1
Casing \	Voiume (gal):		<u></u>			10	4.0	
Total Volun	ne Purged (gal):					g Volume = gallon:	s/foot * water colur	
				D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (⁰C)	Specific Conductance (µS/cm)	Comm	ents
	Pump On							
							D	
		CD CTADU 17/			dinac within (	).2 su pH, 2 degree	Pump Off	m)
	FIELD PARAWE I			APLE INFOR	ana ana manda bin	7.2 Su pri, 2 degree	s 0, and 200 µ0/0	
								Filtered
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)
	****							
		 	ATER LEVEL	MEASURE	I MENT COLL			
· · · ·	evel measurement er level measurem		No access to we	elihead/No por	t in wellhead			
	er level measurem							
No wate	No water level measurement collected. Well is pumping.							
Other:								
	WELL PURGING INFORMATION     Well volumes and field parameters stabilized.							
_	3 well volumes ar 3 well volumes ba			nd field narem	eters stabilize	٠d.		
	well until field par			na noia paroni				
D Other:	•							
Additional	Additional Comments:ししの							
			÷					
	·····							



Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
Task No:	1.0				Date:	9 JULIZ		
Well ID:	Easz				Weather:	9 JULIZ Sunny, ~	90's	
ADWR No:	-26	5			Sampler:	VNH		
				WELL DA	A			
Well D	epth (ft bls):	125			Nominal	Size (inches)	Capacity Gallons per Li	
	Diameter (in):	6"				2 4	0.16 0.65	1
Ť		70,50				5	1.02 1.47	1
Static Wate	er Level (ft bmp):	***********				6 8	2.61	
Casing	Volume (gal):		<u>x3 = 2</u>	240		10	4.08	
Total Volur	ne Purged (gal):	20	05			g Volume = gallons	/foot * water colum	nn (feet)
			define tegt da a staat prop tooloon plantak e	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents
0926	Pump On							
0936	10	8.5	85	7.19	21.7	570		
0941	15	7.5	122.5	7,19	21.4	570		
0946	20	7,5	160	7.21	21,2	570		
0951	25	7,5	197,5	7.20	21,1	570		
0956	30	7.5	235	7.22	21.1	570		
1000	34	7.5	Ue5	7.20	21,1	580		
							Pump Off	
		FR STABILIZ	ATION: Three c	I onsecutive rea	dinas within (	).2 su pH, 2 degree	•	
			anu Altoni et neer konstantion		ada para tanàna amin'ny kaodim-paositra dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina d			
			Container	Volume	No. of	Analysis Method	Preservative	Filtered
5a	impie ID	Time	Туре		Containers		I ICOCIVERVC	(y/n)
East		1004	Poly	250mL	l	300.0	NA	<u> </u>
			2					
		N	ATER LEVEL	MEASURE	MENT COLL	ECTION		
🖾 Water i	evel measuremen	t collected.				en al anticipation and a static transfer to a static static static static static static static static static st		
D No wat	er level measurem	ent collected.			t in wellhead			
1	er level measurem							
Other:	er level measurem	ent collected.	Well is pumping	<b>]</b> .				
WELL PURGING INFORMATION								
Purged 3 well volumes and field parameters stabilized.								
	3 well volumes b			nd field parem	eters stabilize	ed.		
Purged	i well until field par	ameters stabil	ized.					
□ Other:								
Additional	Comments:							

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h	
Task No:	1.09				Date:	19202	and the second se		
Well ID:	Echave				Weather:	Sunny, h	igh 805		
ADWR No:					Sampler:	VNH	0		
				WELL DAT	A	Coolog	Concold		
Well De	epth (ft bls):	34!	Ĵ,		Casing Capacity Nominal Size (inches) Gallons per Linear Foot				
	Diameter (in):	6"				2 4	0.16 0.65	1	
-	,			Z1'		5	1.02 1.47		
Static Wate	r Level (ft bmp):	rom PCP 1 2	12 A 102.	<u> </u>		8	2.61		
Casing	Volume (gal):	100	<b>x3 =</b> 20	97		10	4.08		
Total Volum	ne Purged (gal):					g Volume = gallons	/toot ~ water colum		
			of the second state of the	D SAMPLIN	G DAIA	Specific			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comme	ents	
1627	Pump On								
1647	20	7	140	7.43	22.0	410			
1707	40	7	280	7.52	22,4	430			
1727	60	<u> </u>	420	7,42	22.3	HOC			
1747	80	7	560	7.44	22.2	430			
							Pump Off		
	FIELD PARAMET	ER STABILIZ	LATION: Three c	I onsecutive rea	l Idings within (	).2 su pH, 2 degree	•	n)	
				MPLE INFOR					
			Container		No. of	Analysis Method	Preservative	Filtered	
Sa	ample ID	Time	Туре	Volume	Containers		T reservative	(y/n)	
Echai	re	1752	Poly	250mL	l	300.0	NA	<u> </u>	
		L V	VATER LEVEL	MEASURE	MENT COLL	ECTION			
D Water	level measuremen	it collected.	nuteri og er en ster er e	a na ana ang ang ang ang ang ang ang ang	a y print (data) y region (data).				
D No wat	er level measuren	nent collected.	No access to w	ellhead/No po	rt in wellhead				
	er level measuren								
	er level measuren	nent collected.	Well is pumping	<b>]</b> .					
Other:			WELL	PURGING IN	FORMATION				
	3 well volumes a	nd field param	Nga ang ang ang ang ang ang ang ang ang a	Simeling neurolduite	eliziği (keli qeletining jelet	Nadel - Nadel California (Salari California)			
	i 3 well volumes b			nd field parem	eters stabilize	ed.			
D Purgeo	l well until field pa	rameters stabi	lized.						
□ Other:				0 1.	11 0.1		1 c. I.		
Additiona	I Comments:	VE well	02-01-1	<u>z sw</u>	L = 210e	i71' due	to obstr	101100	
	M	<u>well</u>	<u>*</u>						

	Groundw	ater Samplin	ng Form
Project No:	055038	Client:	Freeport Copper Queen Branch
Task No:	1.0	Date:	670112
Well ID:	EPPELE (041	Weather:	Partly cloudy, slight breez, 705
ADWR No:		Sampler:	TWH '

take.

sample

ADWR No:		WELLDA	Sampler:	<u>TWH</u>		
		Casing Capacity				
Well Depth (ft bis):	2105 fc		Nomina	I Size (inches)	Galions per Linear Foot	
VVen Deptil (it bio).				2	0.16	
Casing Diameter (in):	E.			4	0.65	
Gasing Diameter (iii).				5	1.02	
Static Water Level (ft bmp):	102.39			6	1.47	
Static Water Lever (it binp).		· ~ c/am	-	8	2.61	
Casing Volume (gal):	529	x3=1507		10	4.08	
			Casi	ng Volume = gallon	s/foot * water column (feet)	

Total Volume Purged (gal):					Gashig Volume - gunonovice - trate, construction				
FIELD SAMPLING DATA									
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (***) *F	Specific Conductance (µS/cm)	Comments		
090)	Pump On								
0911	10	٩	90	7,59	70.8	560	21,5°C		
0921	20	11	200	7.65	70,9	560	21,6°C		
0931	30	] (	310	7.62	71.1	560	21,700		
0941	40	il	420	7.64	71.1	570	21.7 °C		
09.51	50	l (	530	7,60	71.2	560	21.7 °C		
0952	51	Ø	530		ļ		Well=dry		
<u> </u>							*		
							Pump Off		
	FIELD PARAMET	ER STABILIZ	ATION: Three co	onsecutive rea	idings within (	).2 su pH, 2 degree	is C, and 200 $\mu$ S/c	m)	
SAMPLE INFORMATION									
Sample ID		Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	

		1	1366							
ĒĪ	PELE (HI	1022	Poly	250m L	/	300,0	NA			
a ji	6.		/							
			WATER LEVE	L MEASURE	MENT COLL	ECTION				
Æ	Water level measureme	ent collected.								
L D	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:									
			WEL	l purging in	FORMATION					
	Purged 3 well volumes and field parameters stabilized.									
	Purged 3 well volumes based on previous water level and field paremeters stabilized.									
叛	Deurged well until field parameters stabilized. / Well went dry									
	Other:						-			
Ad	ditional Comments:	well p	imped d	Ty, wai	t. 30m	in for	<u>re<i>chwg</i>e, 4</u>	lien		

Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch	
Task No:	1.0	1.0			Date:	9-JUL			
Well ID:	Fleming				Weather:	Partly Cloudy, mid- 905			
ADWR No:	0	7			Sampler:	VNU '			
				WELL DA	ΓA		Connoihu		
Well Depth (ft bls):					Nominal	Casing Capacity minal Size (inches) Gallons per Linear Foot			
Casing [	Diameter (in):				2 4		0.16 0.65		
_		373.86'			5		1.02 1.47		
	r Level (ft bmp):				8		2.6	1	
Casing \	Casing Volume (gal):		x3 =			10 Cooling Volume & college		4.08	
Total Volun	ne Purged (gal):				I	Casing Volume = gallons/foot * water column (feet)			
		Disabases	Almin' (Minimital Inford Minima a. 1. 1	LD SAMPLIN	IG DATA	Specific			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comments		
	Pump On								
							Pump Off		
FIELD PARAMETER STA		L ER STABILIZ	STABILIZATION: Three consecutive rea		L dings within (	0.2 su pH, 2 degrees C, and 200 µS/cm)		:m)	
			SAN	IPLE INFOR	MATION				
<u>20</u>	mple ID	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered	
		11116	Туре	volume	Containers	Analysis Method	11030148040	(y/n)	
-									
		Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION			
□ 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.									
<ul> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> </ul>									
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: WLC									

Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch		
Task No:	<b>\</b>				Date:	9/13/12				
Well ID:	Franco	383			Weather:	Sunney	70'5			
ADWR No:					Sampler:	MML				
				WELL DA	Γ <b>Α</b>	Casing	Capacity			
Well D	epth (ft bis):				Nominal	Size (inches)	Gallons per L			
Casing I	Diameter (in):					2 4	0.1 0.6	5		
	er Level (ft bmp):	195.19	7			5	1.0 1.4	4		
						8 10	2.6			
	Volume (gal):				Casin	g Volume = gallons				
Total Volur	ne Purged (gal):			D SAMPLIN						
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents		
	Pump On									
1044				7.66	25,0	1005				
			······				·			
							Pump Off			
	FIELD PARAMET	ER STABILIZA	TION: Three c	onsecutive rea	adings within (	0.3 su pH, 2 degree	$h$ s C, and 100 $\mu$ S/c	cm)		
			SAN	MPLE INFOR	RMATION					
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
Franc	`۵	1047	Poly	250		300.0	N	<u> </u>		
			J							
		N I	I IATER LEVEL	MEASURE	MENT COLI	ECTION				
,⊈ Water	level measuremen	t collected.		ar y na sa ta ta ta ta ta ta	en de la composition			Land Construction (1997) With a Maria Construction		
🗍 No wat	er level measuren	nent collected.			rt in wellhead					
1	er level measuren ter level measuren									
D Other.		RETA CONSCION.	From to pumping	<i>.</i>						
			WELL	PURGING IN	FORMATION					
	3 well volumes a				to to b Way					
1	t 3 well volumes b t well until field pa			nd field paren	neters stadiliz	ea.				
D Other.										
Additiona	I Comments:	Sam	ple from	n tar	1 <u>k.</u>	Runtipre	ssunned	fanks		
	empty o	ритр	insille	pump	house	Jucks on				
	V			· ·						

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Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch
Task No:	1.0				Date:	11 Juli2		
Well ID:	Garnes	557			Weather:	Partly clau	dy, breezy,	hot
ADWR No:					Sampler:	VNH	/ /*	
				WELL DAT	Α	Cocine	Capacity	
Well De	epth (ft bls):				Nominal	Size (inches)	Gallons per L	
Casing D	Diameter (in):					2 4	0,1	1
_		196	.72'			5 6	1.0 1.4	
	r Level (ft bmp):	1100				8	2.6	1
Casing V	/olume (gal):		x3 =				4.0	
Total Volum	ne Purged (gal):					g Volume = gallon:	shoot water cour	
		Discharge	Total	_D SAMPLIN	GUATA	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (⁰C)	Conductance (µS/cm)	Comm	ents
	Pump On							
				<u> </u>			Pump Off	
	FIELD PARAMET	ER STABILIZ	ATION: Three c	l onsecutive rea	L Idings within (	).2 su pH, 2 degree	<u> </u>	:m)
				<b>APLE INFOR</b>	untabolgi i Shini kan ageo			
			Container	gging and contropt displaying a	No. of			Filtered
Sar	mple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
$ \$								
		Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	evel measuremen	t collected.	PERSONAL CONTRACTOR OF CONT			i Persidual di dada kan di salatuna di kan da		Magartroitetetetetetetetetetetetete
No wate	r level measurem	ent collected.			t in wellhead			
i	r level measurem							
□ No wate	r level measurem	ient collected.	vveii is pumping	j.				
			WELL	PURGING INF	ORMATION			
D Purged	3 well volumes ar	nd field parame	eters stabilized.	- tertiyaya - sasa ana di bilika kirik		and a substant substant of a substant substant substant substant substant substant substant substant substant s		
	3 well volumes ba			nd field parem	eters stabilize	ed.		
D Purged	well until field par	ameters stabili	zed.					
	Comments:	(Ari-D						
	Comments.	NN LV						

Project No:	055038				Client: Freeport Copper Queen Branch					
Task No:	1.0				Date:	11 JUL 12				
Well ID:	Garnes	635			Weather:	905, Partly	cloudy, h	unid		
ADWR No:					Sampler:	VNK '	E			
				WELL DAT	A	Casing	Capacity			
Well D	epth (ft bis):	680	2 '		Nominal	Size (inches)	Galions per Li			
Casing [	Diameter (in):	5″				2 4	0.16 0.65			
-	er Level (ft bmp):	199	.15			5	1.02 1,47			
		11am	1 r	171./		8	2.61			
Casing	Volume (gal):	410	x3 = / ² /	+Igal	Cooin	10 g Volume = gallons	4.08			
Total Volur	ne Purged (gal):					g volume – gallons				
		Discharge	Total	D SAMPLIN	GUAIA	Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (⁰C)	Conductance (µS/cm)	Comme	ents		
1200	Pump On									
1230	30	15	450	7,33	25.6	550				
1300	60	+2-15	<del>360</del> 90	7.54	25.1	530				
1320	80	15	1200	7,50	25,2	540				
1340	106	15	1500	7,52	24,9	520				
·										
							Pump Off			
		ER STARILIZ	ATION: Three or	nsecutive rea	dinas within (	).2 su pH, 2 degree	•	m)		
			en kan de transferige ster bester bester	APLE INFOR	idi					
Sa	imple ID	Time	Container	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
	. 05		Туре		Containers	BAR A	1 X X			
Garn	<u>er 1035</u>	1343	Paly	250mL	<u>    l                                </u>	300,0		7		
Dup Ø7:	112012	1344	Paty	250 mL	) 	300.0		7 Madeslandski kalen		
		N	IATER LEVEL	MEASURE	MENT COLL	ECTION				
	evel measuremen			*** ****	( ¹ . )) ²					
1	er level measurem er level measurem				τ in wellnead					
	er level measurem									
C Other:										
			WELL	PURGING INF	ORMATION					
	3 well volumes a				, ,					
-	3 well volumes ba			nd field parem	eters stabilize	ed.				
Purged     Other:	l well until field par	arricters stabil	125U.							
	Comments:	Re-Cali	bradorl	Hanna	Mete	or for rol	rect EC			
		· W~ (////	~ 144104	W VICE						
Arior	1 1	ing fie	eld para	meters.	Prior	40 50-0	calibratio	9.		
Arior Mete	1 1	Ja Cie	via para	too his	<u>Prior</u> gh)	40 50-0	calibratio	<u>J</u>		

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Project No:	055038				Client:	Freeport Copp	er Queen Bran	ch
Task No:					Date:	9-13-12	Ź	
Well ID:	GOAR	RANG	1		Weather:	JUNN		
ADWR No:					Sampler:	BSO		
				WELL DA				
Well D	epth (ft bls):		1		Nomina	Casing Size (inches)	Capacity Gallons per L	inear Foot
			C			2 4	0.1 0.6	
_	Diameter (in):	101- 2				5	1.0	2
Static Wate	er Level (ft bmp):	190-08	,			6 8	1.4 2.6	1
Casing V	Volume (gal):		X3 =			10	4.0	
Total Volun	ne Purged (gal):	,			Casir	ig Volume = gallon:	s/foot * water colur	nn (feet)
			FIEL	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
·	Pump On							- m
			i		1			
							5	
	····							
							Pump Off	
	FIELD PARAMET	ER STABILIZA	TION: Three et	onsecutive rea	idings within (	0.2 su pH, 2 degree	es C, and 200 μS/c	m)
			SAN	APLE INFOR	MATION			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
	******							
	Common and the second se							
						FORMAN		
			ATER LEVEL	WEASURE				
3 V	evel measuremen er level measurem		lo access to we	lihead/No not	t in wellhead			
	er level measurem				, at womicau			
1	er level measurem							
Other:		oka waka mana mana ka kana					nada az Baltan da Marta Haisu da Buda 20	
			Hendelen en des este	PURGING INF	ORMATION			
-	3 well volumes an			al Salat		. <b>d</b>		
-	3 well volumes ba well until field par			na nela parem	eters stadilize	30.		
Other:	non bitti nora par							
	Comments:	1	rate	, Ca	re)	ONZ,		
<u></u>	<u></u>							

	Groundwa	ter Samp	ling Form					
					Client:	Freeport Coppe	r Queen Bran	ch
Project No:	and the second secon				Date:	7-11-1	2	
lask No:	·····				-	Dist	Mander	<u></u>
Vell ID:	<u> </u>	Don:			Weather:		1. Shim	
DWR No:				No. of Concession, Name	Sampler:	Marstofler.	K Jun m	
				WELL D	RTA	Casina	Capacity	
		21	n n		Nominal S	lize (inches)	Gallons per	Inear Foot
Veil Depth (ft b	ls): _		<u> </u>			2	0.1	
Casing Diamete	r (in):		5 '			5	1.0	2
Static Water Lev	vol (8) hmm)r	11	[9.]			6	1.4 2.6	
	-		221			8	4.1	
Casing Volume	(gais):	l	<u>- 55 k</u>		Casin	g Volume = gailons	/foot * water colu	mn (feet)
Casing Volum	les (gals):		<u>407</u>	LD SAMPL				
	Elopsed Time	Discharge	Total Discharge	рH	Temp	Specific Conductance	Солти	nents
Time	(sain)	Rate (gpm)	(gallons)	(SU)	(°G)	(µ8/cm)		
MOD						15.00		
0910	10	17.6	176	4.80	21.6	1902		
0920	20	17.4	352	6.84	$\frac{2}{2}$	1902	gengeness () - and - and - a first of the second	
0130	20	126	-578-	le. 8/2_	2.44	11.00		
-	·		· · · · ·			ŀ		
					<u> </u>			
			· · ·					
							· · · · · · · · · · · · · · · · · · ·	
			S/	MPLE INFO	DRMATION			n a contrar a contrar a contrar a contra
San	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comment
Hoben		0930		250 ml	ŧ	EPA 300.0	nóne	flitered
- HONG	<u>1</u>							
			1					
· ·								
<b> </b>			-					Contractor of the local division of the loca
			and a second	**************************************				
Additional Co	ents:		31					
			24					

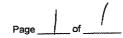
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Task No:         Image: Provide and Provide an	Project No:	055038				Client:	Freeport Coppe	r Queen Brand	:h			
Weather:       Party (Loudy 80         ADMR No:       Sampler:       MAL         ADMR No:       Casing Diameter (In):       Casing Capacity         Well Depth (It bia):       C(I):       0.65         Casing Diameter (In):       0.16       0.65         Static Water Level (It bray):       1.5 (L):       2.61         Casing Volume (gal):       (Id 125):       X3 = 1973       8       2.61         Casing Volume (gal):       (Id 125):       X3 = 1973       8       2.61         Casing Volume (gal):       (Id 125):       X3 = 1973       8       2.61         Casing Volume (gal):       (Id 125):       Casing Volume - gallona/loot * water column (feet)         Time       Based Time       Bischarge       Termp       Casing Volume - gallona/loot * water column (feet)         130:9       VI       110       7.21       12.1.7       14.82         130:9       VI       110       7.21       12.1.7       14.82         130:9       VI       110       7.21       12.9.7       14.82         130:9       VI       110       7.21       12.9.7       14.82         130:9       VI       110       7.21       12.9.7       14.82		1				Date:	9/13/12					
ADWR No:     Sampler     M.M.L.       Well Depth (It bit):     Z(1):     Well DATA:     Casing Capacity       Well Depth (It bit):     Z(2):     Nominal Size (Inches)     Galons per Linear Fort       Casing Dameter (In):		House	NOR 1	IR		Weather:	÷ (	loudy 80				
Well Depth (t bis):       Casing Capably         Well Depth (t bis):       Casing Capably         Casing Diameter (in):       Casing Capably         Casing Diameter (in):       Casing Capably         Casing Copably         Casing Volume = galtonsfoot * water column (feet)         Total (gm ² )       Casing Copably         Total (20       Total (g			35,13			- Sampler:	MML	0				
Well Depti (ft bis):         2(2):         Nominal Size (inches):         Gallons per Linear Foot.           Casing Diameter (in):         (g):         1:5(g): Z:1         0.6         0.65           Static Water Level (ft bmp):         1:5(g): Z:1         6         1.47           Casing Volume (gal):         (ff:1,05): x3 = 19:3         8         2.61           Total Volume Purged (gal):         (ff:1,05): x3 = 19:3         Casing Volume = gallons/foot * water column (feet)           Time         Elapsed Time         Discharge         PL         FileLD: SAMPLING DATA:           Time         Elapsed Time         Obscharge         PL         Octuber = gallons/foot * water column (feet)           12:53         PumpiOn         10         T.2.1         22.7         H48.2           13:5:41         U         1/10         T.2.1         22.7         H48.2           13:5:49         U         1/10         T.2.1         21.8         155:3           13:2:49         3:3:0         T.1.2         21.8         157:4           13:2:49         3:3:0         T.1.2         21.9         157:4           13:2:49         SAMPLE [INFORMATION         Sample ID         FileElip PARAMETER STABULZATION Three consecutive readings within 0.3 su pH, 2 degrees 0, and 100, SiCm)												
Casing Diameter (in):         Comparison         2         0.16           Static Water Level (ft bmp):         1.5 Cp., Z.9         6         1.47           Casing Volume (ga):         (d1.05 x3 = 19^3)         10         4.08           Total Volume Purged (ga):         FIELD SAMPLING DATA         Casing Volume = galons/foot * water column (feel)           Time         Elapsed Time         Discharge (galori)         Casing Volume = Galons/foot * water column (feel)           Time         Elapsed Time (galori)         Discharge (galori)         Casing Volume = Galons/foot * water column (feel)           12557         Pump/On         FileD SAMPLE/ING DATA         Convents         Convents           13 0.90         1         1/0         7.21         22.7         1482           13 0.91         1         1/0         7.21         22.7         1482           13 0.91         1         1/0         7.21         21.8         155/3           13 0.91         1         1/0         7.21         21.9         157/6           13 0.91         1         1/0         7.12         21.9         157/6           13 0.91         1         1/0         1/0         1/0         1/0           13 0.91         1         1/		anth (ft bis):	207	2								
Cashing blanteen (w).         5         1 5 (c, Z, T)         Static Water Level (ft bmp):         1 5 (c, Z, T)         Casing Volume (gal):         Casing Volume (gal):         Casing Volume = gallons/foot * water column (feet)         Total Volume Purged (gal):         The Discharge Discharge Discharge Discharge Discharge Discharge Discharge Total         Time Elapsed Time Rate (gam)         Generative Colspan="2">Specific Conductance (US/cm)         (GU)         I 100         Time Elapsed Time Rate (gam)         Generative Colspan="2">Specific Conductance (US/cm)         (SU)         I 200 Ti 10 7 2.1 (22-7 H4872         1309         I 300 Tital (JL (JL (T) (T) (T) (22-7) H4872         I 300 Tital (SU)         Pump Off         FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Water level measurement collected.         No water level measurement collected.         No water level measurement collected.							2		1			
Casing Volume (ga):       Image: Casing Volume Purged (ga):       Casing Volume = gallons/foot * water column (feel)         Total Volume Purged (ga):       Image: FIELD SAMPLING DATA:       Specific Conductance (uS/cm)       Comments         Image: Time       Elapsed Time (min)       Rate (gam)       Image: FIELD SAMPLING DATA:       Specific Conductance (uS/cm)       Comments         Image: Time       Elapsed Time (gam)       Discharge (gam)       Image: FIELD SAMPLING DATA:       Conductance (uS/cm)       Comments         Image: Time       Elapsed Time (gam)       Discharge (gam)       Image: FIELD SAMPLING DATA:       Conductance (uS/cm)       Comments         Image: Time       Elapsed Time (gam)       Discharge (gam)       Image: FIELD SAMPLE INCOMUNE       Conductance (uS/cm)       Comments         Image: Time       Image: FIELD SAMPLE INCOMUNE       Image: FIELD SAMPLE INCOMUNE       Pump Off       FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         Image: FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)       Image: FIELD SAMPLE INCORMATION         Image: FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)       Image: FIELD SAMPLE INCORMATION         Image: FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)       Image: FIELD FIELD SAMPLE INCOR	Casing E	Diameter (in):	<u> </u>	- 0			5	1.02	2			
Casing Volume (gal):       (4.9.5)       x3 = 19.5       10       4.08         Total Volume Purged (gal):       Casing Volume = galens/foot * water column (feet)         Time       Elapsed Time (min)       Discharge Rate (gen)       Total Discharge (galons)       PH (C)       Temp (C)       Specific Conductance (µS/cm)       Comments         12:55       Pump On (13:3CR)       L1       110       7.2.1       22.7       44.82         13:3CR       L1       110       7.2.1       22.7       44.82         13:3CR       L1       110       7.2.1       21.7       44.82         13:3CR       L1       110       7.2.1       21.7       44.82         13:3CR       L1       12:0       15:7(4)       15:7(4)         13:2.9	Static Wate	r Level (ft bmp):	156	, 21	~		1					
Total Volume Purged (gal):       FIELD SAMPLING DATA:         Time       Elapsed Time (min)       Discharge Rate (galorns)       PH Discharge (galorns)       Temp (SU)       Temp (SC)       Specific Conductance (uSform)       Comments         13:0:9       L{       110       7.2.1       22.2.7       3482.         13:0:9       L{       110       7.2.1       22.4.%       155:3         13:2:9	Casing \	/olume (gal):	(04.25	x3 = )	9-3		10					
FIELD SAMPLING DATA         Time       Elapsed Time (min)       Discharge Rate (gpm)       Total Discharge (gallons)       PH (SU)       Temp (%)       Specific Conductance (µS/cm)       Comments         13:0;9       14       1/0       7.2.1       22.7       148.2       135.3       130.9       148.2       130.9       130.9       148.2       155.3       130.9       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6       157.6 <td>Total Volun</td> <td>ne Purged (gal):</td> <td></td> <td></td> <td></td> <td></td> <td>g Volume = gallons</td> <td>/foot * water colur</td> <td>nn (feet)</td>	Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colur	nn (feet)			
Time       Elapsed Time (min)       Rate (gpm)       Discharge (galons)       PH (SU)       Temp Concorducance (uS(cm))       Conductance (uS(cm))       Conductance (uS(cm))         13 c.91       M       /10       7.2.1       22.7       1482         13 c.91       M       /10       7.2.1       22.7       1482         13 c.91               13 c.91                13 c.91                S				FIEI	D SAMPLIN	G DATA						
1309       11       10       7.2.1       22.7.2       1482         1309       220       7.13       21.8       1553         1329       330       7.12       21.9       1576         1329       330       7.12       21.9       1576         1329       330       7.12       21.9       1576         1329       330       7.12       21.9       1576         1329       1576       1576       1576         1329       1576       1576       1576         1329       1576       1576       1576         1329       1576       1576       1576         1329       1576       1576       1576         14000       1577       1576       1576         1510       1576       1576       1576         1510       1577       1576       1576         1510       1577       1576       1576         1510       1578       1576       1576         1510       1579       1576       1576         1510       1535       1507       15007       1576         1510       1535       1305       1300, 0	Time		Rate	Discharge			Conductance	Comm	ents			
1319       1       220       7.13       21.8       1553         1329       330       7.12       21.9       1576         1329       330       7.12       21.9       1576         1329       330       7.12       21.9       1576         1329       1576       1576       1576         1329       1576       1576       1576         1329       1576       1576       1576         1310       1576       1576       1576         1310       1576       1576       1576         140       1576       1576       1576         1510       158       1573       1576         1510       158       1597       1576         1510       1597       1597       1597         1510       1597       1597       1597         1510       1597       1597       1597         1510       1597       1597       1597         1510       1535       1300,0       1597         1510       1535       1300,0       1500,0         1510       1535       1300,0       1500,0         1510       1535	1259	Pump On										
Image: State of the state	1309		И	110	7.21	22,2	1482					
IDE I       IDE I       IDE I       IDE III         IDE III       IDE IIII       IDE IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	1319		3	220	7.13		1553					
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of       Analysis Method       Preservative       Filtered (y/n)         HOWARD NR 1335       Poly       250       1       300, G       N         WATER LEVEL MEASUREMENT COLLECTION         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. No access to wellhead/No port in wellhead         No water level measurement collected. Well is pumping.         Other:         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Purged well until field parameters stabilized.       Other:       Other:	1329			330	7.12	21,9	1576					
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of       Analysis Method       Preservative       Filtered (y/n)         HOWARD NR 1335       Poly       250       1       300, G       N         WATER LEVEL MEASUREMENT COLLECTION         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. No access to wellhead/No port in wellhead         No water level measurement collected. Well is pumping.         Other:         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Purged well until field parameters stabilized.       Other:       Other:												
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of       Analysis Method       Preservative       Filtered (y/n)         HOWARD NR 1335       Poly       250       1       300, G       N         WATER LEVEL MEASUREMENT COLLECTION         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. No access to wellhead/No port in wellhead         No water level measurement collected. Well is pumping.         Other:         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Purged well until field parameters stabilized.       Other:       Other:												
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of       Analysis Method       Preservative       Filtered (y/n)         HOWARD NR 1335       Poly       250       1       300, G       N         WATER LEVEL MEASUREMENT COLLECTION         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. No access to wellhead/No port in wellhead         No water level measurement collected. Well is pumping.         Other:         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Purged well until field parameters stabilized.       Other:       Other:												
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of       Analysis Method       Preservative       Filtered (y/n)         HOWARD NR 1335       Poly       250       1       300, G       N         WATER LEVEL MEASUREMENT COLLECTION         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. No access to wellhead/No port in wellhead         No water level measurement collected. Well is pumping.         Other:         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Purged well until field parameters stabilized.       Other:       Other:												
FIELD PARAMETER STABILIZATION: Three consecutive readings within 0.3 su pH, 2 degrees C, and 100 µS/cm)         SAMPLE INFORMATION         Sample ID       Time       Container       No. of       Analysis Method       Preservative       Filtered (y/n)         HOWARD NR 1335       Roly       250       1       300, G       N         WATER LEVEL MEASUREMENT COLLECTION         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. No access to wellhead/No port in wellhead         No water level measurement collected. Well is pumping.         Other:         WELL PURGING INFORMATION         Purged 3 well volumes and field parameters stabilized.       Purged well until field parameters stabilized.         Purged well until field parameters stabilized.       Purged well until field parameters stabilized.       Other:       Other:												
SAMPLE INFORMATION         Sample ID       Time       Container Type       Volume       No. of Containers       Analysis Method       Preservative       Filtered (y/n)         Howard Nr       1335       Poly       250       1       300,0       N       //         Water Revel measurement collected.       Water level measurement collected. No access to wellhead/No port in wellhead       No water level measurement collected. No access to wellhead/No port in wellhead         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:       Other:					oncoputive rea	dings within (		•	m)			
Sample ID       Time       Container Type       Volume       No. of Containers       Analysis Method       Preservative       Filtered (y/n)         Howard Nr       1335       Poly       250       1       300.0       N       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 paremeters stabilized.         Purged well until field parameters stabilized.         Other:		FIELD PARAWE	ER STADILIZA	a manalan internetian internetia		nerin i kiristeleten (* 1865)						
Sample ID       Time       Solitative       Volume       Containers       Analysis Method       Preservative       (y/n)         Howard N R       1335       Poly       250       1       300.0       N       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 paremeters stabilized.         Purged well until field parameters stabilized.       Other:       Other:					T T				Filtered			
Howarb Nr       1555       1044       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       2005       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1<	Sa	imple ID	Time		Volume		Analysis Method	Preservative				
Water level measurement collected. 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:	Harris	o on Nie	1335	Polu	250	1	300.0	N	$  \chi$			
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:	THOUN	ARD DR		J								
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:					MEASURE		ΕστιοΝ					
<ul> <li>No water level measurement collected. No access to wellhead/No port in wellhead</li> <li>No water level measurement collected. Obstruction in well.</li> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> </ul> 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:												
<ul> <li>No water level measurement collected. Obstruction in well.</li> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> <li>WELL PURGING INFORMATION</li> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>	0			No access to w	ellhead/No po	rt in wellhead						
<ul> <li>No water level measurement collected. Well is pumping.</li> <li>Other:</li> <li>WELL PURGING INFORMATION</li> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>	ł											
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:	1											
<ul> <li>Purged 3 well volumes and field parameters stabilized.</li> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>	□ Other:	na mana ka		anang prinsipala araw								
<ul> <li>Purged 3 well volumes based on previous water level and field paremeters stabilized.</li> <li>Purged well until field parameters stabilized.</li> <li>Other:</li> </ul>					PURGING IN	FORMATION						
Purged well until field parameters stabilized.     Other:					nd field name	atore stabiliz	ed					
D Other:	1				по нею рагеп	ICICIS STADIIZO	cu,					
	-	wen unm nem ha										
	L	Comments:										





# 

# WATER SAMPLE DATA LOG Zonal Sampling Howard - H2S sample

roject No.:	2870				Project:	at					1	
/ell No.:	HOWA	e0			Date:	118	4/12					
ocation:	Norco H	~~ <u>~</u>			Weather:							
		'			١	WELL DA	ATA					14 1 1 1
otal Depth	of Well (ft bis	);			Static Wate	er Levei	(ft bis):	188.3	6 bn	<u>ap:</u>		
ample Inte	rval (ft bls):				Date/Time:							
ubing Dian	neter (in):				Pt. of Meas	surement	Ľ					
orehole Dia	ameter (in):											
						Chloring						
Time	Discharge Rate	Total Discharge	pН	Temp. ∦°F)	Specific Conduct.	ct. Nitrate	/Sánd Content	- <del>TDS</del> * ( <del>ppm</del> )	Color	Odor	Con	iments
	(gpm)	(gailons)		ζ.	(µs/cm)	(17(9/1)		H2S PPM	<u> </u>			
						Fre.	total			110	~	1
	$\bigcirc$	Ò				$\square$			610	opten	From	From pur
	5.33	6	8,25	24.1	625.8	0	- 0 -	0.075	clear	NO notten egg	<u> २ वुवा</u>	trom pur
1325	5.80		0.000		L				clear	rotten		
1334	5.80	50	8.24	25,5	628.3	0	0	0.1	Clear	rotten egg rotten egg	Expose	d to longer
1400	4.16	50	18132	16.3	6 21.3	$+ \frac{\nu}{2}$		10.00	Lice	legg-	<u>'aur</u>	<u> </u>
			<u> </u>					1		1		
		<u> </u>	<u> </u>		<u> </u>					1		······
										1		
		<u> </u>	<u> </u>	<u> </u>								
			<u> </u>					1				
	1							1				
		<u> </u>		1	1	-			-	1		
								+			1	
	 	<u> </u>		<b> </b>				<u></u>				
	<u> </u>	<u> </u>						+		1	1	
	<u> </u>	+				+	-	1				
					-		-				1	
	1		-									
		1						· ·	1			
		<u> </u>	<u> </u>						1			
		11/2										,
	ping Started:	MA										
Airline dep		<del>ح</del>		-								
	f air package:				·····							Bentonite
Total Discl	harge (gallon:	»: <i>[O</i>	5									Seal
Sample ID												
Sample Co	ollected by:											
	ole Collected:											Screen
	of Sample C											
	Veter Type:										<b>-</b>	Pea Grave
		<u></u>						Į				
Additional	Comments:											
, waterondi												
												Bentonite
												Seal
									i i		1	

\Clearcreek01\Production\CCA FORMS ANALYSIS\Forms\Zonal sampling form (updated) ZONAL

Project No:	055038				Client:	- Freeport Copp	er Queen Branc	h			
Task No:	1,0				Date:	17-700					
Well ID:	Keefer	/			- Weather:	17-JUC SUNNY E NNG	05				
ADWR No:					Sampler:	NNH.					
				WELL DA	·····						
	epth (ft bls):	245'			Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot			
						2	0.16				
Casing D	Diameter (in):		<u></u>			4 5	0.65				
Static Wate	r Level (ft bmp):	140,0	¥9.			6 8	1.47 2.61	1			
Casing \	/olume (gal):	153	x3 =	459		10	4.08				
Total Volum	ne Purged (gal):				Casin	g Volume = gallon:	s/foot * water colum	nn (feet)			
			FIE	D SAMPLIN	G DATA						
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents			
6913	Pump On										
0923	10	9,5	95	7.16	21.2	460					
0933	20	2.5	190	7.39	20.8	500					
0943	30	9.5	285	7.37	20.8	480					
0953	40	9.5	380	7.41	21.1	480					
1003	50	9.5	475	7,40	21.0	500					
	FIELD PARAMET	ER STABILIZ		onsecutive rea		).2 su pH, 2 degree	Pump Off es C, and 200 µS/c	m)			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)			
Keefe		1006	Poly	250m L	l	300,0	NA	М			
<u>Nee7</u>	2						,~ ,~	÷			
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         X         Purged 3 well volumes and field parameters stabilized.         Purged 3 well volumes based on previous water level and field paremeters stabilized.											
				nd field parem	eters stabilize	ed.					
Purged     Other:	well until field par	ameters stabil	izea.								
	Comments:										
Auditional	Comments.						······································				

Project No:	055038	·			Client:	Freeport Coppe	r Queen Branc	h
Task No:	1,0				Date: ,	13可ひし12		
Well ID:	Marcell					Overcast, 1	umid, hor	!
ADWR No:					Sampler:	WH		
				WELLDA	ΓΑ		Conceitu	
Well Do	epth (ft bls):	N220'			Nominal	Size (inches)	Capacity Gallons per Li	
	Diameter (in):	6"				2 4	0.16 0.65	1
						5	1.02 1.47	
Static Wate	er Level (ft bmp):	~180'	,	Q. co		8	2.61	
Casing \	Voiume (gal):	(QC	x3 = /	80ga		10	4.08	
Total Volun	ne Purged (gal):					g Volume = gallons	/100t " Water colum	
		Discharge	Total	LD SAMPLIN T	IG DATA	Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
1048	Pump On							
1053	5	12	60	6.71	23,9	1810		
1058	10	12	120	(0.79	22.4	1640		
1103	15	12	180	6.86	22.3	1730		
							Pump Off	
	FIELD PARAME	L FER STABILIZ/	ATION: Three c	consecutive rea	u adings within (	0.2 su pH, 2 degree	s C, and 200 μS/c	m)
			SA	MPLE INFOF	RMATION			
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Marce	11	1107	Poly	250mL	1	300.0	NA	V
	,		<u> </u>					
		l N	I VATER LEVEI	MEASURE		ECTION		
	level measuremer							an mentre persenant
	er level measuren		No access to w	/ellhead/No po	rt in wellhead			
D No wat	er level measuren	nent collected.	Obstruction in	well.				
	er level measuren	nent collected.	Well is pumpin	g.				
Other:			WEIL	PURGING IN	FORMATION			
Puroed	i 3 well volumes a	nd field parame	n Honspielen (new person			heen stal was hief to single state (state) h	nan selana para da	gere ootgebelden de konstanderen.
	i 3 well volumes b				neters stabilize	ed.		
-	l well until field pa	rameters stabil	ized.					
□ Other:								
Additiona	I Comments:							

Project No:	055038				Client:	- Freeport Coppe	r Queen Branc	h		
Task No:	ì				Date:	7/6/12				
Well ID:	Mc.Con	NELL 2	65		- Weather:	sunny	, 80'5			
ADWR No:					Sampler:	MML	L.			
				WELL DAT						
Well De	epth (ft bis):	211	0		Nominal	Size (inches)	Capacity Gallons per Li	near Foot		
1		6"				2 4	0.16 0.65			
-	Diameter (in):					5	1.02			
Static Wate	r Level (ft bmp):					6 8	1.47 2.61	1		
Casing V	/olume (gal):	79	x3 =	237		10	4.08			
Total Volun	ne Purged (gal):					g Volume = gallons	/foot * water colum	n (feet)		
				D SAMPLIN	G DATA	Casaifa				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents		
1051	Pump On									
1101	10	10	100	6.87	22.3	1808	Sulfer sne	<u>u</u>		
1106	15		150	4.83	22-1	1819				
1111	20		200	6.00	22.5	1824				
1110	25	V.	250	6.88	22.4	1827				
							Pump Off	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		
	FIELD PARAMET	ER STABILIZ		APLE INFOR	usela anti a si anti a	).2 su pH, 2 degree	s C, and 200 µ5/C			
								Filtered		
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	(y/n)		
McCon	NELL 2165	1118	POLY	250	1	300.0				
No wate No wate No wate Other: Purged Purged Purged Purged Other:	evel measuremen er level measurem er level measurem er level measurem 3 well volumes an 3 well volumes ba well until field par Comments:	t collected. nent collected. nent collected. nent collected. nent collected.	Obstruction in v Well is pumping WELL eters stabilized. us water level a	ellhead/No por vell. J. PURGING INI	t in wellhead					

#### WELL DEVELOPMENT RECORD

Well ID: <u>McCune</u> ADWR Reg. No:_____ Page _j___of ____

Project Na	me:		Project No.	-		Site Addres	S:		ADWR Registry No.:			
Private	Jell Inst	hall CQB	287	608								
Drilling Co	•				·	Date Starte	d: Thala			Date Finished:		
Geologist:		, Dencan	timp			Measuring	a: 7/27/12 Point (M.P.):			Distance b/t land surface and M.P.(ft):		
CeninAigrar						Tol	of Soundin	a Tube		2.09		
Total Case	ed Depth (i	ft bls):				Top SJ Sounding Tube     Z.09       Screen Interval (ft bis):     Contract Street Str						
Pump Typ	o/Cotling (	ft hle).				Static Wate	er Level (ft bls):					
եոստեւյի	eroeuny (	n bioj.	i i	420' bls		172.09 - 2.09 = 170.50						
Method of	Flow Rate	(Q) Calculation				Sand Meas	surement Method	1:				
····	In-Line From Meter											
			-			data and the second	Parameters	and the second se	TIM	Comments		
Date	Time	Activity (Bail, Swab,	Q (gpm)	Q _T (gal)	Sand Content (mi/l)	pH	Conductivity (us/cm)	<b>Temp</b> (F/C)	TDS (ppm)	Comments		
		Pump)			(erma)							
7-27-12	0718	Pump	20		]	B.30	520.6	25,0	·····			
<u>s s s s s s</u>	0730					8,22	552.4	25,5				
	0400					8.20	528.4	26.2				
					1	8.18	522.8	26.9				
	0620		<b>_</b>		-	8.21	517.7	26.6				
	084.0		+		<u> </u>	4		1				
<u> </u>	OFIDO		20		None	8.18	517.1	26.8				
	0920					8.31	513,4	26.7				
	0940				Abre.	8.24	511.8	26.7				
	1000					6.22	511.4	26.6				
	1020		19		None	8.25	510.0	26.5				



Project No:	055038				Client: Freeport Copper Queen Branch					
Task No:	1.0				Date:	7/6/12				
Well ID:	MET2L	ER			Weather:	Sunny	80's			
ADWR No:					Sampler:	MML				
				WELL DA		Casing	Capacity			
Well De	epth (ft bls):	35			Nominal	Size (inches)	Gallons per L			
Casing E	Diameter (in):	6				2 4	0.10			
-	r Level (ft bmp):		1.37			5 6	1.02			
		<u>6 1</u>				8	2.6	1		
Casing V	/olume (gal):		<u>x3 =</u>		Casia		4.0			
Total Volum	ne Purged (gal):	ry statutovatio reiziala i i ratio 2007.			1	g Volume = gallons	shoot water colu			
				D SAMPLIN	IG DATA	Specific				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Specific Conductance (µS/cm)	Comm	ents		
<u> </u>	Pump On									
					I					
							Pump Off			
	FIELD PARAMET	ER STABILIZA	TION: Three co	onsecutive rea	adings within (	0.2 su pH, 2 degree	es C, and 200 µS/c	im) Albanastebnasterenetisk		
			SAN	IPLE INFOR	RMATION					
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
							<u> </u>			
		Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION				
Water le	evel measuremen	t collected.								
	er level measurem				rt in wellhead					
1	er level measurem									
Other:	er level measurem	ient collected.	vveil is pumping							
			WELL	PURGING IN	FORMATION					
	3 well volumes ar	nd field parame	ters stabilized.	de participation de la compañía	ninen nen nen nära ten		i i dagi na kata Angela (karakawa na na kata a sa kata sa kata s			
	3 well volumes ba			nd field parem	neters stabilize	ed.				
1 A C	well until field par		zed.							
A Other:			. 1			1.1.77				
Additional	Comments:	Well r	as hee	<u>ri aus</u>	<u>connec</u>	Ted pro	n house	allect		
	<u></u>	pump 2 De to	sani	<u>ricess</u>	<u>10 U</u>	renj un	une ja (	JIKCA		
	<u>ــــــــــــــــــــــــــــــــــــ</u>			<u></u>						



Project No:	055038			I	Client:	Freeport Coppe	r Queen Branc	h		
Task No:	NO				Date:	17 JUL/2	*			
Well ID:	Moore				Weather:	SUNNY, t	70s			
ADWR No:					Sampler:	WH	·			
				WELL DAT			Capacity			
Well D	epth (ft bls):	220	) ³		Nominal	Size (inches)	Gallons per Li	Contraction of the second s		
Cesing	- Diameter (in):	6	5)			2 4	0.16 0.65			
_	•	<u></u>				5		1.02 1.47 2.61 4.08 ot * water column (feet) Comments		
	r Level (ft bmp):					8	2.61			
Casing	Volume (gal):		x3 =		Cacin	10				
Total Volur	ne Purged (gal):			D SAMPLIN						
		Discharge	Total			Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents		
1051	Pump On				9111					
1056	5	11.5	57.5	7.30	24,1	440				
1101	10	11.5	115	7,34	22.7	440				
1106	12	165	172,5		22.6	430	· .			
11/0	19	11.5	210,2	7.36	<u> </u>	430				
							Pump Off			
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	idings within (	).2 su pH, 2 degree	s C, and 200 μS/c	m)		
			SAN	<b>IPLE INFOR</b>	MATION					
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
Mo	ose	1114	Poly	250ml	1	300,0	NA	<u> </u>		
TUPO	7172012	1115	Poly	250ml	(	300,0	M	¥		
		1	VATER LEVEL	MEASURE	MENT COLL	ECTION				
D Water	evel measuremen	t collected.			(Distriction of the second second second		th Arran Hart Alas La cast in Land Carry Carry			
No wat	er level measurem	ent collected.			rt in wellhead					
	er level measurem er level measurem									
Other:	er iever measurem	ient collected.	wents partping	<b>g</b> .						
			WELL	PURGING INI	ORMATION					
	3 well volumes ar					•				
	l 3 well volumes ba i well until field par			nd field parem	eters stabilize	ed.				
D Other:	i weli unui nelo par	ameters stabil	112eu.							
L	I Comments:									

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
Task No:	1.0				Date:	10-501		
Well ID:	Ness				Weather:	Sunny, bre	ezy, mid	805
ADWR No:	_				Sampler:	WH	- 	
				WELL DA	ΓΑ	Casing	Capacity	
Well De	pth (ft bls):	81	2'		Nominal	Size (inches)	Gallons per L	
Casing D	iameter (in):	5				2 4	0.16 0.65	i
				27.71		5 6	1.02 1,47	1
	olume (gal):	2198	<u>record</u> 54 <b>x3 =</b> (e	54		8 10	2.61 4.08	
	e Purged (gal):	<u> </u>		· · · · · · · · · · · · · · · · · · ·	Casin	g Volume = gallons	/foot * water colum	nn (feet)
	e ruigeo (gai).		FIEL	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Commo	ents
0957	Pump On							
1007	10	9.5	9.5	7.11	26,4	380		
1017	20	8.5	190	7,17	26. Ce	3760		
1027	30	4.5	265	7.15	210.5	380		
1037	40	8.5	350	7.15	26.6	370		
1057	leo	8,5	520	7.18	26.7	380		
11 12	75	8,5	647,5	7.20	26.8	380		
		l					Pump Off	
	FIELD PARAMET	ER STABILIZ		inches Mericany, corpored ry hydrol	an a	).2 su pH, 2 degree	is C, and 200 μS/c	m)
			SAN	NPLE INFOR				
Sar	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Ness	>	1122	Poly	250ml	(	300,0	NA	<u> </u>
Dun	(871 <i>(BUB</i> ) 2	1122	Poly	250ml	١	300.0	NA	Ψ
			ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	vel measuremen	t collected.		ola w a bara companya da a su antina term	na si naga ki tan opi kosta			derfere kan pertakken kan dia sina analy
	r level measuren		No access to we	ellhead/No po	rt in wellhead			
	r level measuren							
No wate     Other:	r level measuren	nent collected.	Well is pumping		,			
			WELL	PURGING IN	ORMATION			
Purged	3 well volumes a	nd field parame	eters stabilized.			Appanta di kari achi distri pratagini da		i y spinioù i Salit Cale ( byteteren f
	3 well volumes b			nd field parem	eters stabilize	ed.		
	well until field pa	rameters stabil	ized.					
O Other:				1 ~	10 -1	<17		
	Comments:	Using			<u>-12-11,</u> as leal	597.71 kina, wi	nich could	
<u>Notes</u> øxplair	One of the log	yve v p		umps w	us real	<u>united</u> to t	ALLEN COLL	~~
<u></u>	· · · · · · · · · · · · · · · · · · ·	y Jr						

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	<u>h</u>			
Task No:	1.0				Date:	9 Jul 12		Queen Branch  Arthy cloudy  apacity  Galions per Linear Foot  0.16  0.65  1.02  1.47  2.61  4.08  pot * water column (feet)  Comments			
Well ID:	K)otemo	in			Weather:	Hot, humic	1, partly clou	dy			
ADWR No:					Sampler:	VNH	<i>'</i>	(			
				WELL DAT	A	Casing	Canacity				
Well De	epth (ft bls):	470	•		Nominal	Size (inches)	Gallons per Li				
Casing D	Diameter (in):	5"	,			2 4					
		NA use	Lut 395	7.54		5					
Static Water	r Level (ft bmp):					8	2.61				
Casing V	/olume (gal):		<b>x3</b> = 4;	)(0	0	10					
Total Volum	ne Purged (gal):	2465.	<u>5qal</u>			g volume = gallons	/loot water colum				
		Diseberge	Total	LD SAMPLIN	GDATA	Specific					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents			
1229	Pump On										
12.301	10	1)	(10	6.51	25,1	1350					
1249	20	11	220	6.52	24,9	1360					
1259	30	<u>(</u>	330	6.54	24.7	1350					
1309	40	9	420	6.57	24.7	1360					
1314	45	9	465	<b></b>		<b>*</b>					
							Pump Off				
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	idings within (	).2 su pH, 2 degree	s C, and 200 μS/cr	n)			
			SAM	<b>NPLE INFOR</b>	MATION						
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)			
Notem	an	1316	Poly	250mL	t t	300.0	NA	У			
	7092012	1316	Polu	250mL	1	300,0	NA	Ý			
		V V			MENT COLL	the brief of the Paris and a state of					
	evel measuremen	t collected.						i di si di kana ini pada sa kasa kasa kasa ka			
	er level measurem		No access to w	ellhead/No por	t in wellhead						
	er level measurem										
	er ievel measurem	ent collected.	Well is pumping	<b>]</b> .							
D Other.			WEIL	PURGING INI	ORMATION						
Purged	3 well volumes a	nd field param	eters stabilized.		n an	: You NET CONTRACTOR CONT	Ajnoviki rodalni rozlaki Akistoj z hotobila krazili	anja kan marana ana ang ang ang ang ang ang ang ang			
1	3 well volumes ba			nd field parem	eters stabilize	ed.					
-	well until field par	ameters stabil	lized.								
Other:	~ -	21	~ 1		1 01	- 20ME					
1		S	n <u>psevio</u>	<u>US SECON</u>	,	<u>, = 327,5.</u> adure.	4. Owner	ma,			
						CM2 1/ 5 1					
informed		e <del>J</del>			<u> </u>						

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
Task No:	1.0				Date:	1870612		
Weil ID:	NWC-C	2	<u>,</u>		Weather:	SUMAY,	hot	
ADWR No:					Sampler:	WNH'		
				WELL DAT	A		Capacity	
Well De	epth (ft bls):				Nominal	Size (inches)	Gallons per Li	
	Diameter (in):					2 4	0.16 0.65	
-						5 6	1.02 1,47	
Static Wate	r Level (ft bmp):					8	2.61	
Casing V	/olume (gał).		x3 =		~ ·	10	4.08	
Total	ne Purged (gal):	No. 1 and 10. The second s	na na indiana ang sa katala			g Volume = gallons	s/foot * water colum	
		Diashawaa	FIEt Total	LD SAMPLIN	GDAIA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents
	Pump On							
1017				7.11	23.6	420		
1022				7.30	22,0	420		
1027				7.36	22.4	4/20		
1032				7.33	22.5	430		
							Pump Off	
	FIELD PARAMET	ER STABILIZ/	TION: Three c	I onsecutive rea	l Idings within (	).2 su pH, 2 degree	es C, and 200 μS/ci	m)
			dala para na handra da haisin	MPLE INFOR				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NW	C-02	1037	Poly	250 mL	L	300.0	NA	М
		W	ATER LEVEL	_ MEASUREI	MENT COLL	ECTION		
1	evel measuremen							
3	er level measurem				t in wellhead			
	er level measuren er level measuren							
12 No watt		ient conected.	wei is pumpin	<b>.</b>				
			WELL	PURGING INI	ORMATION			
	3 well volumes a							
	3 well volumes b			ind field parem	eters stabilize	ed.		
Purged	well until field part 1201 h	ecs bee	izea. Un -Doùta	na	all m	irning		
	Comments:		e porte	10		0		·
								74 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	·····		······			-		



Z:\Data\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Forms\Groundwater Sampling Sheet

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	:h
Task No:	1.0				Date:	1870112	>	
Well ID:	NWC-0	3			Weather:	IGTUL 12 Sunny, VNH	80s	
ADWR No:					Sampler:	VNH		
				WELL DA	ΓΑ	Conipa	Conceiby	
Well D	epth (ft bis):				Nominal	Size (inches)	Capacity Gallons per L	· · · · · · · · · · · · · · · · · · ·
Casing [	Diameter (in):					2 4	0.16	
						5 6	1.02 1.47	1
	er Level (ft bmp):					8	2.61	
Casing	Volume (gal):		x3 =		Ontin		4.08	
Total Volur	ne Purged (gal):					g Volume = gallons	anoot " water colum	
	T.	Disebaraa	Total	D SAMPLIN		Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (℃)	Conductance (µS/cm)	Comm	ents
	Pump On							
0910				le.86	23,0	1090		
0915				7.05	22,6	1070		
3970				7.05	22,1	1080		
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
			499.2007 January 19 19 19 19 19 19 19 19 19 19 19 19 19					
							Pump Off	
	FIELD PARAMET	ER STABILIZ/	TION: Three c	onsecutive rea	dings within (	).2 su pH, 2 degree	s C, and 200 μS/c	m)
			SAM	IPLE INFOR	MATION			
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NWC	-0.7	0930	Poly	250mL	T (	300.0	NA	Y
			1					
		Ŵ	ATER LEVEL	MEASUREI	L MENT COLL	ECTION		
U Water I	evel measurement							itini davitetiten vision).
1	er level measurem		No access to we	ellhead/No por	t in wellhead			
	er level measurem							
11	er level measurem	ent collected.	Well is pumping	J.				
Other:			WELL	PURGING INI	ORMATION			
	3 well volumes ar	nd field parame	ters stabilized.	ateriale sin sabaterio:	Playett Jurger (How Stan Keile)			un seinen se
-	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field par		zed.	10 × 0				
Other:	<u> </u>	M Be	en fum	NULA	۶ ۲	-2 /K 1		
Additional	Comments:	well ho	us Blet	1 prop	ing n	> 15min		
					<u> </u>			

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h
Task No:	1.0				Date:	18-JULIZ		
Well ID:	NWC-0	3 CAP	7		Weather:	18-TULIZ Sunny,	805	
ADWR No:					Sampler:	VNH		
				WELL DA	ТА			
Weil D	epth (ft bis):				Nominal	Size (inches)	Capacity Gallons per L	inear Foot
Cosing	Diameter (in):					2 4	0.16	1
		124	5,73		-	5	1.02	2
Static Wate	er Level (ft bmp):	19,	17)			6 8	1.47 2.61	
Casing	Volume (gal):		x3 =			10	4.08	
Total Volur	me Purged (gal):				Casin	g Volume = gallons	s/foot * water colun	nn (feet)
			FIEL	D SAMPLIN	NG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
	Pump On							
				Salyingal siyo dasi yidili d				
					$\vdash$			
				/	1			
				<u> </u>				
							Pump Off	
					dinoc within (	) D.2 su pH, 2 degree		m)
	FIELD PARAME I		co-properties in the second state of the	IPLE INFOR	and the strategy of the second se			
			Container	Volumo	No. of	Analysis Method	Preservative	Filtered
	ample ID	Time	Туре	Volume	Containers	Analysis Wethou	T TOSCIVALIVE	(y/n)
			ATERLEVEL	MEASURE		FOTION		
<u> </u>								
1 1	level measurement er level measurem		No access to we	lihead/No no	rt in wellhead			
1	er level measurem							
	er level measurem							
D Other:							(in production of the product of the state of the	
			WELL	PURGING IN	FORMATION			
-	3 well volumes ar							
	13 well volumes ba			nd field paren	neters stabilize	ed.		
	I well until field par	ameters stabili	zed.					
Other:	· ~	(AB »	>					
Additiona	Comments:	Vill	/					
	·····							
·····								

Project No:	055038				Client:	Freeport Coppe	r Queen Branc	h
Task No:	1.0				Date:	1830612		
Well ID:	NWC-0	4			Weather:	Sunny, hot		
ADWR No:		-f			Sampler:	VNH		
				WELL DAT	A	Casing		
Well D	epth (ft bls):				Nominal	Size (inches)	Gallons per Li	
						2 4	0.16 0.65	1
Casing	Diameter (in):					5	1.02 1.47	
Static Wate	er Level (ft bmp):					6 8	2.61	
Casing	Volume (gal):		x3 =			10	4.08	
Total Volur	me Purged (gal):		۰.			g Volume = gallons	foot * water colum	in (feet)
				LD SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Comme	ents
These states and the second states and the s	Pump On							
0816				6.59	22.6	820		
0821	-			7.04	23.7	860		
3826				7.22	23,6	890		
0831				7.21	23.7	340		
0336				7.25	2307	880		
				1				
							Pump Off	
			TION: Throp		dings within	0.2 su pH, 2 degree		m)
	FIELD PARAMET	ER STADILIZA	the surgery and the strategy of plates and	MPLE INFOR	set of the			
			en da da de la da da.	T	No. of			Filtered
S	ample ID	Time	Container Type	Volume	Containers	Analysis Method	Preservative	(y/n)
1142	C-04	08211	Poly	250mL	l	300.0	NA.	Y
			L /ATER LEVE					
	level measuremen							
	ter level measuren				rt in wellhead			
	ter level measuren							
1	iter level measuren	nent collected.	well is pumpin	g.				
□ Other:			WELL	PURGING IN	FORMATION			
	d 3 well volumes a	nd field param	SANGERSEN DISTRI	的時間的時期的時期時間	n bidd fen stabilik din	andra a chuirte ann an Aonaichtean an Aonaichte		dilantin antri esci vi se d'Alla (d'Esci)
	d 3 well volumes a				neters stabiliz	ed.		
	d well until field pa							
🕱 Other:	: dump is	$\underline{\mathcal{M}}$	00 11	~				
Additiona	al Comments:	PUMp	is off	<u> 0 0</u>	5		<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		Flowmer	ter is	hit o	r mil	55		· · · _ · ·
		<u>r (uwme</u> )	<u>vo jo</u>	<u> </u>				

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	:h
Task No:	1.0	1 · · ·			Date:	8-28-12		
Well ID:	NWC-	૦વ			Weather:	5000, 80	) \$	
ADWR No:					Sampler:	370	·	
				WELL DA	TA	Casina	Capacity	
Well De	epth (ft bis):				Nomina	Size (inches)	Gallons per L	
Casing D	liameter (in):					2 4	0.16 0.65	
-						5 6	1.02 1.47	1
	r Level (ft bmp):		~			8	2.61	
Casing \	/olume (gal):		x3 =		Casia	10 Ig Volume = gallons	4.08	
Total Volun	ne Purged (gal):				<u> </u>	ig volume – ganore	shoot water colum	
		Discharge	FIE Total	LD SAMPLIN I		Specific		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (℃)	Conductance (µS/cm)	Comm	ents
10:10	Pump On							
10:15	S	20	(00)	7.67	26.2	890.4		
10:20	10	20	200	7.43	24.8	26 388.4		
10:25	15	zg	300	7,47	7_3,8	8865		
10.30	20	20	400	7.99	24.2-	8 73 3		
				1				
							Pump Off	
	FIELD PARAMET	ER STABILIZ/	L ATION: Three c	I onsecutive rea	L idings within (	).2 su pH, 2 degree	<u> </u>	m)
			annan dhili dhana jaraa		a geographica an			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
NU	JC-04		Pois	ZSOM		300.0	Ø	Ý
	u nažena na n					n cinica de Nikinsu na su da		
		N	ATER LEVEL	MEASURE	MENT COLL	ECTION		
	evel measurement							
	r level measurem r level measurem				t in weilnead			
,	r level measurem							
Other:		ung ang Alakati king kanala dara				n a su a s		
				PURGING INI	ORMATION			
-	3 well volumes ar			nd field name	atore atabili-	ad		
-	3 well volumes ba well until field par			inu neiu parem	eleis stadiiize	5 <b>u</b> .		
D Other:								
Additional	Comments:	well.	has	been	<u> </u>	and an	toda.	Obstructio
, 'U <	ound, nag 1	lube a	e well	1's pun	ping So	5-10 (1.10)	to peral	



۸.

Project No:	055038				Client:	Freeport Coppe	pper Queen Branch			
Task No:	l				Date:	9/13/12				
Well ID:	NINC-	-04			Weather:	Partly Claudy				
ADWR No:					Sampler:	MMU	·			
				WELL DA	Γ <b>Α</b>	Casing	Canacity			
Well D	epth (ft bls):				Nominal	Size (inches)	Gallons per Li	Contraction of the second s		
Casing [	Diameter (in):			:		2 4		1		
	·	NA				5 6				
	r Level (ft bmp):	10 11				8	2.61			
Casing	Volume (gal):		x3 =		Casin	10				
Total Volur	ne Purged (gal):			D SAMPLIN	<u> </u>					
		Discharge	Total	ver vergen van blanderen fer		Specific				
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents		
	Pump On									
0948				7.31	23,6	914,3				
0955				7.41	23,9	878.5	· · · · · · · · · · · · · · · · · · ·			
1009				7.40	23,9	883.7				
				L						
		L								
							0			
					dingo within (	0.3 su pH, 2 degree	Pump Off	m)		
	FIELD PARAME I	ER STABILIZ			n se na se					
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
NWC	-04	1009	POLY	250	1	300.0	N	Y		
		, ,	I IATER LEVEL	MEASURE	MENT COLL	ECTION				
Water	level measuremen	t collected.								
1	er level measurem		No access to w	ellhead/No po	rt in wellhead					
	er level measuren									
□ Other:	er level measuren	nent collected.	Well is pumping	].						
			WELL	PURGING IN	FORMATION					
	3 well volumes a	nd field parame	eters stabilized.		Landeren grades is not die der angede					
D Purged	13 weli volumes b	ased on previo	us water level a	nd field paren	neters stabiliz	ed.				
1 V	i well until field par	rameters stabil	ized.							
Other:				•						
Additiona	Comments:	Myrc	n Ult	iamete	<u>LL</u>					
		U								

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h
Task No:	(.0				Date:	1970112		
Well ID:	NWG-	Юс.			Weather:	Sunny ho	1	
ADWR No:					Sampler:	VNH		
				WELL DAT				
Well D	epth (ft bis):				Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot
						2 4	0.16	1
Casing [	Diameter (in):					5	1.02	
Static Wate	r Level (ft bmp):					6 8	1.47 2.61	
Casing	Volume (gal):		x3 =			10	4.08	
Total Volur	ne Purged (gal):				Casin	g Volume = gallons	/foot * water colum	in (feet)
			FIEI	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (⁰C)	Specific Conductance (µS/cm)	Comme	ents
	Pump On							
0947				7.07	23,8	390		
0952				7.30	22,9	380		
0957				7.36	25.8	340		
1002				7.39	22.8	380		
				L				
					-			
							Pump Off	
			ATION: Three o		dings within (	0.2 su pH, 2 degree	•	m)
	FIELD PARAWE			MPLE INFOR	n an			
			08.5.4.6.8.8.		No. of		r din puesto de la contra de la c Contra de la contra d	Filtered
Sa	imple ID	Time	Container Type	Volume	Containers	Analysis Method	Preservative	(y/n)
NWC-	<u>^</u>	1006	Poly	256mL		300.0	NA	γ
	- 00	1000						
			L VATER LEVEL		MENTICOLI	FETION		
	evel measuremer er level measuren		No access to w	ellhead/No po	rt in wellhead			
1	er level measuren							
R No wat	er level measuren	nent collected.	Well is pumping	<b>j</b> .				
D' Other:								
				PURGING IN	rukma hun			
	3 well volumes a   3 well volumes b			nd field parem	neters stabilize	ed.		
	i well until field pa							
Other:	Will is	pompine	7					
Additiona	Comments:	1 / 5						
						,		

Project No:	055038				Client:	- Freeport Coppe	er Queen Brand	sh
Task No:	1,0				Date:	10-Jul 2	ØIZ	
Well ID:	Palmer				Weather:	Sunny, br		5
ADWR No:					Sampler:	UNIF	(	
				WELLDA	A			
Well De	epth (ft bls):				Nominal	Size (inches)	Capacity Gallons per L	inear Foot
	Diameter (in):					2 4	0.16	
_						5	1.02 1.47	1
Static Wate	r Level (ft bmp):					8	2.61	
Casing V	Casing Volume (gał): X3 =					10	4.08	
Total Volum	ne Purged (gal):					g Volume = gallons	/foot * water colun	nn (feet)
Time	Elapsed Time	Discharge Rate	Total Discharge	D SAMPLIN pH	Temp	Specific Conductance	Comm	ents
r in ric	(min)	(gpm)	(gallons)	(SU)	(°C)	(µS/cm)		
	Pump On							
				7,30	27,9	390		
	_							
		,						
							Pump Off	
	FIELD PARAMET	ER STABILIZ	TION: Three c	nsecutive rea	dings within (	).2 su pH, 2 degree	s C, and 200 μS/c	m)
			SAN	IPLE INFOR	MATION			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Palme	,	121Ce	Polv	250mL	~ (	300.0	N/A	<u> </u>
			/					
		Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	evel measuremen	t collected.	andrene (Marine Largert (1993) (Marine (1993) (M	erner het lenner (***	tersett artispiration day (Minis)		x or section of the output	a constant of particular property found of the ball of the particular of the
	er level measurem				t in wellhead			
	er level measurem er level measurem							
Other:		on concered.	rion to puriping	•				
			WELL	PURGING INI	ORMATION			
	3 well volumes ar							
-	3 well volumes ba well until field par			nd field parem	eters stabilize	90.		
Other:	<i>n</i>	^	tank					
Additional	Comments:							

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h		
Task No:	1,0				Date:	9 JULIZ				
Well ID:	Panagak	05			- Weather:	Sunny, he	1 ~94" F			
ADWR No:	101100 00110				Sampler:	VNH				
				WELL DAT						
Well De	epth (ft bis):	200	ງ'		Nominal	Casing Size (inches)	Capacity Gallons per Li	near Foot		
		10'				2 4	0.16 0.65	1		
Casing D	Diameter (in):					5	1.02	2		
Static Wate	r Level (ft bmp):		.38'	<u> </u>		. 6 8				
Casing \	/oiume (gai):	44	$g_{\mu}(x3 = 1)$	32gal		10		Comments		
Total Volun	ne Purged (gal):			J	Casin	g Volume = gallons	1.47 2.61 4.08 c/foot * water column (feet) Comments Comments 4 4 4 4 4 4 4 4 4 4 4 4 4			
			FIEL	D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (⁰C)	Specific Conductance (µS/cm)	Comme	ents		
11.09	Pump On									
111-1	5	9	45	6.70	24,2	1210				
119	10	9	90	6.79	22.6	1060				
1124	15	9	135	(0.8)	22.3	1110				
1129	20	9	180	6,82	22,2	1140		0		
1130	2.0		189				Jump off	7		
							D			
					diana withia (			m)		
	FIELD PARAME I	ERSTABILIZ		MPLE INFOR	regisige) verse regiser to	J.z. su pri, z degree				
								Filtered		
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative			
22	alan	1134	Poly	250m L	1 1	300,0	NA	Ý		
Panag			10.00	1 COME						
			VATER LEVEL	. WIEASUKE	VIEIN I COLL					
	evel measuremen er level measuren		No proper to w	allhaad/No no	t in wellhead					
	er level measuren er level measuren				S III WORRDAN					
1	er level measuren									
Other:	an a									
				PURGING INI	-ORMATION					
1 · · · ·	3 well volumes a 3 well volumes b			nd field noram	eters stahiliza	ed.				
-	well until field par			na nela paran	otoro otobilizo					
Other:										
Additional	Comments:									
							· · ·			

Project No:	055038				Client: 1	Freeport Coppe	er Queen Branc	h	
Task No:	1.0				Date:	182021	2		
Well ID:	Parra				Weather:	Sunny, "	20s		
ADWR No:					Sampler:	VNH			
				WELL DAT	A	Casing	Capacity		
Well De	epth (ft bls):	358	5'		Nominal	Size (inches)	Gallons per Li		
	Diameter (in):	(9	l)			2 4	0.16 0.65		
		(9				5 6	1.02 1,47		
	r Level (ft bmp):		x3 =			8 10	2.61 4.08	1	
	/olume (gal):	<u> </u>	80 mg (		Casin	<b>-</b>	s/foot * water column (feet)		
Total Volun	ne Purged (gal):	FIELD SAMPLIN							
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
1150	Pump On								
1155	5	ί2	60	6.90	22.6	1200			
1200	10	12	120	7,02	22.4	0151			
1205	15	12	180	7.03	22.6	1210			
		ı.							
							Pump Off		
	FIELD PARAMET	I ER STABILIZ	ATION: Three c	onsecutive rea	I adings within (	1 0.2 su pH, 2 degree	·	m)	
				<b>MPLE INFOR</b>					
Sa	ample ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Parr	n	1208	Poly	BOML	}	300.0	NA	<u> </u>	
( )	218202	1208	Poly	250mL	٦	300,0	MA	Ý	
			L VATER LEVEI	MEASURE	MENT COLL	ECTION			
D Water	evel measuremen	t collected.			ing sign partition of the hard out the second				
No wat	er level measuren	nent collected.			rt in wellhead				
	er level measuren								
No water level measurement collected. Well is pumping.     Other:									
	WELL PURGING INFORMATION								
	I 3 well volumes a					t			
1. / -	l 3 well volumes b I well until field pa			ind field paren	neters stabiliz	ea.			
D Other:	i wen until nelo pa	ameters stabl							
1,	l Comments:								



Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h	
Task No:	1.0				Date:	11-TUL12			
Well ID:	Picnke				Weather:	Partly Clou	dy, Hot	Breezer	
ADWR No:	f				Sampler:	VNH	C ,		
				WELL DAT	A		Case all		
Well De	pth (ft bis):	300	m)		Nomina	Casing Capacity Nominal Size (inches) Gallons per			
	iameter (in):	6	))		2 4		0.16 0.65		
-			.97'			5 6	1.02 1.47		
	Level (ft bmp):	$213 x_3 = 639$			8 10	2.61			
Casing V	olume (gal):	- 413	x3 = U		Conir	4.08 s/foot * water colum			
Total Volum	e Purged (gal):					ig volume – galion	STUDE WALEF COULT		
		Discharge		D SAMPLIN	GUAIA	Specific			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comme	ents	
1640	Pump On								
1650	10	6,5	65	6.81	26.7	1310	Semi-tan, do		
1700	20	7.5	140	6.98	2317	1360	el 12	- 11	
1720	40	7.5	290	6.98	23,3	1310		24	
17.90	60	7.5	440	6.83	23.7	1230	Clear, odurle	<u>M</u>	
1800	80	7.5	590	6.99	23.0	1240			
1610	90	4.5	665	6.59	22.9	1280			
······							Pump Off		
		 FR STABIL 17/	ATION: Three c	onsecutive rea	l Idings within	0.2 su pH, 2 degree	1 .	m)	
			nteto per Aleja del Maleja del S	MPLE INFOR	see See the set of the set of the set				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Piont	re	1815	Poly	250mL	l	300.0	MA	4	
			l						
		N	ATER LEVEL	MEASURE	MENT COL				
Ø Water le	evel measuremen	t collected.	regionalizzaten 2008 diziz	aannan een distriktististi	anna dhalfara Shirilarg	daged hereitettettettettettettettettettettettette	engi yang di sakin di Mantal Panini di Pani	nang pinang ng pinang ng pinang pi	
1	r level measurem		No access to w	ellhead/No po	t in wellhead				
	r level measuren								
	r level measuren	nent collected.	Well is pumping	<b>]</b> .					
Other:     WELL PURGING INFORMATION									
PX Purged 3 well volumes and field parameters stabilized.									
D Purged 3 well volumes based on previous water level and field paremeters stabilized.									
-	well until field par	rameters stabil	ized.						
Other:	<u></u>	/1 +	< /	101	< 11	A have	- C		
	Comments:	Used 3	pigot or	<u>, 77.</u>	SIDE	of hous	<u>e. 10r.</u>	purop	
(S) year	<u>O semple</u>								

Project No:	055038				Client:	- Freeport Coppe	er Queen Branc	:h	
Task No:	1.0				Date:	9/18/12		**************************************	
Well ID:	PIONKE	517			Weather:	Sunny			
ADWR No:	- WIVE				Sampler:	Jamie Je	hiseoia		
				WELL DA		Same se	MARCAN		
		inna					Capacity		
VVeli De	epth (ft bis):	609			Nomina	I Size (inches) 2	Galions per L 0.16		
Casing I	Diameter (in):				4		0.65		
Static Wate	r Level (ft bmp):	152				5 6	1.02 1.47		
	(aluma (anl))					8	2.61		
Casing	/olume (gal):	<u> </u>	$\frac{4}{6} \frac{4}{6} \frac{398}{\text{Casing Volume = gallons/foot * water column}}$						
Total Volume Purged (gal): FIELD SAMPLING DATA									
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
12.05	Pump On								
1235	30	17	510	7,88	23.7	399.0	clear		
1205	60	17	1020	7,94	23.2	397.1			
1315	70	17	1190	7.92	237	396.6			
1320	75	17	1275	7.92	22.8	399.6			
1325	86	17	1360	7.91	23.2	397.6			
1330	85	17	1445	7.91	23,4	395.8		······································	
	1								
1338	93	17	1581				Pump Off		
		ER STABILIZ	ATION: Three co	onsecutive rea	dings within (	0.2 su pH, 2 degree	s C, and 200 μS/cr	n)	
			SAN	APLE INFOR	MATION				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
PLONIK	E 517	1336	plastic	250ml	1	300.8	NP	Ý	
		N	ATER LEVEL	MEASUREN	MENT COLL	ECTION			
Water le	vei measuremen	t collected.							
No wate	r level measurem	ent collected.	No access to we	ellhead/No por	t in wellhead		21		
	r level measurem						1		
No wate     Other:	r level measurem	ent collected.	Well is pumping	v			***		
Purged 3 well volumes and field parameters stabilized.									
	3 well volumes ba	•		nd field parem	eters stabilize	ed.			
	well until field par	-							
Other:									
Additional	Comments:	mp >	top of	sound	ling +	tibe (2.	15' stick	up	
					<u> </u>		~	-	

Project No:	055038					Client:	Freeport Coppe	er Queen Branc	:h
Task No:	1					Date:	7/6/12		
Well ID:	Rat	$\mathbb{R}$	a m	irez		Weather:	sunnel.	2015	
ADWR No:			<u></u>			Sampler:	MML		
					WELL DA				
Well De	epth (ft bis):		H	<del>7</del> 30	3	Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
			10	<u> </u>			2	0.16	6
Casing D	liameter (in):	6.				4 5	0.65 1.02	1	
Static Water	r Level (ft bmp):	163.85				6 8	1.47 2.61	1	
Casing V	/olume (gal):	<u> </u>	<u>01</u>	x3 =	603		10	4.08	
Total Volum	ne Purged (gal):					Casin	g Volume = gallons	/foot * water colum	nn (feet)
	FIELD SAMPLING DATA								
Time	Disch Ra (gp	te	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
1251	Pump On								
1301	10	10	2	100	7.31	23.7	422.7		
1311	20			200	7.31	24.0	423.5		
1321	30			300	7.37	23.8	419.9		
1331	40			400	7.32	24.0	417.8		
1341	50			500	7.33	23.9	416.9		
1351	60		/	600	7.32	24.2	415.7		
								Pump Off	
	FIELD PARAME I	ERSI		al a state a state of the state		a an	).2 su pH, 2 degree		11) Namels Nach ann an Airte
		T			APLE INFOR				
Sa	mple ID	Ti	ne	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
RAMI	REZ	135	6	POLY	260	1	300.0	N	X
									·
			Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water is	evel measuremen	t collect	ed.		ien ferkielen die konstant	nenden distandista			
No wate	r level measurem	ent coll	ected.	No access to we	ellhead/No poi	t in wellhead			
	r level measurem								
No water level measurement collected. Well is pumping.     Other:									
WELL PURGING INFORMATION									
Purged	3 well volumes ar	nd field	oarame		ten atten approximited and a second	aradılı ile kirin kirini ki	ol no mata iona iona (1966) Menuacity (1965	in Scinger (1996)	
1	3 well volumes ba				nd field parem	eters stabilize	ed.		
-	well until field par	ameten	s stabil	zed.					
Other:	<b></b>								
Additional	Additional Comments:								

Project No:	055038				Client:	Freeport Coppe	er Queen Brand	ch		
Task No:	1.0				Date:	6JUL12				
Well ID:	RAY				Weather:	Sunny, 8	03			
ADWR No:	M				Sampler:	VNH				
				WELL DAT	A			s Arban Islan Sund Arekannian Isla An Islam Arban Arban Arban Arban Arban Arban Arban Arban Arban Arban		
Well De	epth (ft bis):	100	, ⁽		Nominal	Casing Capacity Nominal Size (inches) Gallons per Line				
Casing	Diameter (in):	•	, <i>ri</i>		2 4		0.16	1		
-			,75'			5	1.02 1.4			
Static Wate	r Level (ft bmp):			c. 2 I		6 8	2.61	1		
Casing \	/olume (gal):	$61 \times 3 = 183 \text{ gal}$				10	4.0			
Total Volun	ne Purged (gal):					g Volume = gallons	s/root * water colur	nn (teet)		
	FIELD SAMPLING DATA									
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)		Conductance (µS/cm)	Comm	ents		
1055	Pump On									
1100	5	7	35	7.13	73.0	1420	22,7°C			
1105	10	7	70	7.11	72,6	1420	22,5°C			
1110	15	7	105	7.11	72.1	1430	22.3°C 22.3°C			
1115	20	7	140	7.11	72.1	1440	l			
1120	25	7	175	7.((	71.7	1430	<b>22.1</b>	LP		
1122	27	7	189		4		Pump O	77		
							Pump Off			
	FIELD PARAMET	L TER STABILIZ/	ATION: Three c	I onsecutive rea	l Idings within (	L ).2 su pH, 2 degree		m)		
			older an and the literation of the	APLE INFOR	ini de la company de la com					
Sa	imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
Ra	17	1129	Poly	250m2	(	300+0	NA	9		
	¥									
		N T	ATER LEVEL	MEASURE	MENT COLL	ECTION				
25 Water I	evel measuremen									
	evel measuremen er level measurem		No access to we	ellhead/No po	rt in wellhead					
	er level measuren									
□ No water level measurement collected. Well is pumping.										
Other:     WELL PURGING INFORMATION										
Purged 3 well volumes and field parameters stabilized.										
	3 well volumes b			nd field parem	eters stabilize	ed.				
-	well until field par	rameters stabil	ized.							
Other:	-		<u></u>	10 - 1	1	<u>ــــــــــــــــــــــــــــــــــــ</u>	-1 42			
Additional	Comments:	UPX+	gea wa	ater te	s tree	in you	d per o	uner		

Project No:	055038				Client:	Freeport Copp	er Queen Brand	<u>ch</u>		
Task No:	1.0				Date:	1320212	-			
Well ID:	Rogers	596			Weather:	Overas t	, homid,	lut		
ADWR No:	0				Sampler:	Witt	· · ·			
				WELL DA	ΓA	Casing	Capacity			
Well De	epth (ft bis):	<u>.</u>			Nomina	l Size (inches)	Gallons per Linear Foot			
Casing E	Diameter (in):					2 4	0.16 0.65			
Static Wate	r Level (ft bmp):	139	.65			5 6	1.02 1.47			
Casing \	/olume (gal):		x3 =			8 10	2.6 ⁻ 4.08	1		
	ne Purged (gal):	*******			Casing Volume = gallons/foot * water column (feet)					
			F(E)	D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)			ents		
	Pump On									
							<u> </u>			
							Pump Off			
	FIELD PARAMET	ER STABILIZA	ATION: Three co	onsecutive rea	dings within (	0.2 su pH, 2 degree	es C, and 200 μS/c	m)		
			SAN	IPLE INFOR	MATION					
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
		Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION				
	evel measuremen									
	er level measurem er level measurem				t in wellhead					
	r level measurem									
D Other:	1922 Suthi - Anio Anio Asia ang ang a		Structure and community of				na si Ganasanan Bernaina a			
				Purging Inf	ORMATION					
1 -	3 well volumes ar 3 well volumes ba			nd field parem	eters stabilize	ed.				
-	well until field par			ia nota parotri						
D Other:		-*								
Additional	Comments:	WL	-0			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
								± P VI 5 P VI 6		
							·····			
·····										



Project No:	055038				Client:	- Freeport Coppe	er Queen Branc	h	
Task No:	1.0				Date:	13. ていしに			
•		000			-	werast he			
Weli ID:	Rogers	803				INH	- novrazo	·····	
ADWR No:				WELL DAT					
		140'		Statistical education (Institution)	Casing Capacity				
Well De	epth (ft bls):	170			Nominal Size (inches) Gallons per Line 2 0.16				
Casing D	Diameter (in):				4		0.65	1	
Static Wate	r Level (ft bmp):	139.65	From 1	Rocius 596		5 6	1.02 1.47	1	
		: 139.65 From Rogers 596 x3=				8 10	2.61 4.08		
Casing V	/olume (gal):				Casin		s/foot * water colum		
Total Volume Purged (gal):		24	<u></u>	LD SAMPLIN					
Time	Elapsed Time	Discharge Rate	Total Discharge	pН	Temp	Specific Conductance	Comme	ents	
Time	(min)	(gpm)	(gallons)	(SU)	(ºC)	(µS/cm)			
1240	Pump On								
1242	2	7.5	15	7.09	25.7	720			
1245	5	7.5.6	16.3	7.20	24.4	670			
1250	10	.6	19.3	7.26	24.1	740			
1255	15	:6	22,8	7.26	24.0	820			
1257	17	1 Le	24			g			
							Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three o	consecutive rea	idings within (	).2 su pH, 2 degree	es C, and 200 µS/cr	n)	
			SA	MPLE INFOR	MATION				
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Brans	803	1306	Poly	25CmL	7	300,0	NA	Y	
NOUZ1	37012	1317	BOW	250ml	ί	30C, O	JA	1	
	<u>S wi c</u>		<u> </u>						
	evel measuremen er level measurem		No access to w	ellhead/No por	t in wellhead				
	er level measurem								
	er level measurem								
□ Other:									
			and an	PURGING INI	-ORMATION				
	3 well volumes an				otoro otobili-	ad			
-	3 well volumes ba well until field par			and neid parem	eters stabilize	su.			
□ Other:	wen unter nete par								
L	Comments:								

Project No:	055038				Client:	- Freeport Coppe	er Queen Brand	ch		
Task No:	100				Date:	1770212				
Well ID:	Rogers	E			Weather:	Partly Clou				
ADWR No:	<u>, voge s</u>				Sampler: 1	VNH VNH				
				WELL DA						
Well Dr	epth (ft bis):	291	-,)		Nomina	Casing Size (inches)	Capacity Gallons per L	inear Foot		
		<u>(</u> )			2		0.16	3		
Casing L	Diameter (in):				- 4 5		1.02			
Static Wate	r Level (ft bmp):			6 8		1.47 2.61				
Casing V	/olume (gal):	198 x3 = 594		0 10		4.08				
Total Volun	ne Purged (gal):	6	eOO		Casing Volume = gallons/foot * water of			nn (feet)		
			FIEI	D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Comm	ents		
1438	Pump On									
1448	10	10	100	7.36	23,3	430				
1458	20	10	200	7.33	22,8	440				
1508	30	10	300	7.36	22.7	43c				
1518	40	10	400	7.36	22.7	440				
1528	50	10	500	7.35	22.5	420				
1538	60	10	600	7.32	22.7	420				
		<u>.</u>					Pump Off			
	FIFI D PARAMET	ER STABILIZ/	ATION: Three c	onsecutive rea	dinas within (	).2 su pH, 2 degree	· ·	m)		
			and states data based to a direction of the	APLE INFOR	Interpreterated to the second second					
			Container		No. of			Filtered		
Sa	mple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)		
Reciers	E	1541	Poly	250mL	l	300.0	NA	P		
0			(							
		ι I	ATER LEVEL	MEASURE	MENT COLL	ECTION				
Ø Water i	evel measuremen	t collected.	nin kata pina diserika ngan				a se anna an a	inden för sen sen statiska statiska som		
· · ·	er level measurem		No access to we	ellhead/No por	t in wellhead					
	er level measurem									
	er level measurem	ent collected.	Well is pumping							
	Other:     WELL PURGING INFORMATION									
X Purged										
12 -	3 well volumes ba			nd field parem	eters stabilize	ed.				
_	well until field par	ameters stabili	zed.							
Other:	<u> </u>									
Additional	Comments:									
·····		· · ·								

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h	
Task No:	1.0				Date:	18JUL 12			
Well ID:	Ruiz				Weather:	Hot, SU	my high	. 90 3	
ADWR No:				the second se	Sampler:	VN41			
				WELL DAT	A	Casing	Capacity		
Well De	epth (ft bls):	312	>		Nominal Size (inches)		Gallons per Linear Foot		
Casing E	Diameter (in):	6	ly.		2 4		0.16 0.65	i į	
_			111 2.97	201	5		1.02 1.47	1	
		22				8	2.61 4.08		
Casing \	Volume (gal):		<u>xs = (</u>		Casin	10 g Volume = gallons			
Total Volun	ne Purged (gal):			D SAMPLIN			water oordin		
		Discharge	Total			Specific	i la la constanti di si constanti di secondo		
Time	Elapsed Time (min)	Rate (gpm)	Discharge (gallons)	pH (SU)	Temp (°C)	Conductance (µS/cm)	Comme	ents	
1251	Pump On								
1256	5	4,5	22,5	6.91	21,7	890			
1301	10	4,5	45	6.73	21.8	910			
1306	เร	4,5	67.5	6.87	21.6	900			
							······		
							Dunna Off		
					dinas within (	).2 su pH, 2 degree	Pump Off	m)	
	FIELD PARAIVE		http://www.snince.com	APLE INFOR	n (n. 11. (n. 1				
Sa	imple ID	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered (y/n)	
			Туре	2	Containers	220 0	¥[ A	1	
Avie		1309	Poly	250mL	{	300.0	NA	7	
		Ν	ATER LEVEL	MEASURE	MENT COLL	ECTION			
1	evel measuremen								
	er level measurem er level measurem				t in wellhead				
	er level measuren er level measuren								
D Other:									
WELL PURGING INFORMATION									
Purged 3 well volumes and field parameters stabilized.									
1 1	3 well volumes ba			nd field parem	eters stabilize	ed.			
D Other:	well until field par	ameters stabil	ized.						
	Comments:	Used E	SWC for	n Ululu	= 297	7.20			
		<u>SACIA</u>		<u></u>			······································		
, <u></u> ,	·····								

Project No:	055038	_	<ul> <li>Freeport Coppe</li> </ul>	r Queen Branc	h				
Task No:	1.0				- Date:	<u> </u>			
Well ID:	Schwa	-4.7			Weather:	Opercost,			
	JOLINO	<u> </u>			Sampler: VNH				
ADWR No:				WELL DAT					
Well De	pth (ft bls):	305	· · · · ·		Casing Capacity Nominal Size (inches) Gallons per Linear Foot				
		305' (0"			2 4		0.16 0.65		
Casing D	iameter (in):					5	1.02		
Static Water	Level (ft bmp):				6 8	1.47 2.61			
Casing Volume (gal):		259	x3 = +	177		10	4.08		
Total Volum	e Purged (gal):	•				g Volume = gallons	/foot * water colum	ın (feet)	
			ing in the production of the production of the pro-	D SAMPLIN	G DATA				
Time Elapsed Time (min)		Discharge Rate (gpm)	Total Discharge (galions)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Comme	nts	
1315	Pump On					$\chi$			
1325	10	10	100	7,26	21.9	740			
1345	30	10	,300	7.29	21.9	720			
1405	50	10	500	7.28	22,0	710			
1425	70	10	700	7.27	22.0	710			
1435	80	10	800	7.31	21,9	FIO			
							Pump Off		
		ER STABIL 17/	ATION [,] Three c	onsecutive rea	dinas within (	).2 su pH, 2 degree	•	m)	
			a for the second se	APLE INFOR	a second a la seconda da seconda s				
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Schw	+ 7	1440	Poly	250mL	(	300.0	K/A	M	
Jonas	arce		10 14			<u> </u>	<u> </u>		
			I /ATER LEVEL			FCTION			
No wate	evel measuremen er level measuren	n collected. nent collected.	No access to w	ellhead/No po	rt in wellhead				
No wate	er level measurem	nent collected.	Obstruction in w	vell.		*			
□ No water level measurement collected. Well is pumping.									
Other:     WELL PURGING INFORMATION									
A Purged 3 well volumes and field parameters stabilized.									
	3 well volumes b			nd field parem	eters stabilize	ed.			
Purged	well until field pa								
□ Other:									
Additional	Additional Comments:								

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Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h	
Task No:	1.0				Date:	970212		······	
Well ID:	Stephens				Weather:	970212 Sunny, 2	: 90°F		
ADWR No:	1		•			VNH			
				WELL DA	TA				
Well D	epth (ft bls):				Nominal	Casing Capacity Nominal Size (inches) Gallons per Linear			
					2		0.16 0.65		
-	Diameter (in):		1		<b>4</b> 5		1.02		
Static Wate	er Level (ft bmp):	10.69			-	6 8	1.47 2.61		
Casing	Volume (gal):		x3 =		10 2.01				
Total Volur	ne Purged (gal):				Casin	g Volume = gallons	s/foot * water colum	in (feet)	
				D SAMPLI	NG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comme	ents	
	Pump On								
				rger produkt janski konstruktion ja					
							Pump Off		
		FR STABI	TION: Three co	nsecutive re	adings within (	) 0.2 su pH, 2 degree		m)	
			were a subsect of the second	IPLE INFO	ugiyestetereni interrigiy				
		<u> (1986)</u> 1	Container		No. of			Filtered	
Sa	imple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)	
	<u> </u>								
$\langle$									
			ATER LEVEL	MEASURE		EGITON			
	evel measuremen				مسمقال من الله مسمأ				
1	er level measurem er level measurem				n in weinedu				
	er level measurem								
D Other:									
			WELLI	PURGING IN	IFORMATION				
D Purged	3 well volumes ar	nd field parame	ters stabilized.	¢					
-	3 well volumes ba			nd field paren	neters stabilizo	ed.			
-	well until field par	ameters stabili	zed.						
Other:	<b>A</b>	Start			)	J C.I	1. 1		
Additional	Comments:	<u>Stephe</u> ,	ns prope	$f = \int_{-\infty}^{\infty} f = $	corner	07 Carti	<u>is in C</u>	2 Pactus	
Barder	- <u>na n</u>	<u> </u>	15DEP C	Y UMCY	ori. Or	I TAST SI	UT AT (		
W	D taken	@ Well	Next to	Blue Jav	rk, rear	driveway	gate on	Cactus	
in gio	le af prof	verty				<u> </u>	<u> </u>		
:\Data\Projects\G	/ / / / & K\055038_Copper Qu	( een Branch Mitigatio	on Order/Groundwate	r Monitoring\For	ms\Groundwater Sa	ampling Sheet			

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Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch	
Task No:	1.0				Date:	9JUL12			
Well ID:	Sunber	!£			Weather:	Overcast, 1	iot, humi	el	
ADWR No:					Sampler:	WH			
				WELL DA	ΓΑ		Cananita in the second		
Well Da	epth (ft bis):				Nomina	Casing Capacity Nominal Size (inches) Gallons per Linea			
Casing F	Diameter (in):		****		2 4		0.16 0.65		
_		T T7	$\overline{\checkmark}$			5	1.0 1.4	2	
	r Level (ft bmp):		<i>i</i>			8	2.6	1	
Casing V	/olume (gal):		x3 =			10	4.0		
Total Volum	ne Purged (gal):				<u> </u>	ng Volume = gallons	s/foot * water colur	nn (feet)	
			ningistatinintation at test	_D SAMPLIN	IG DATA	<u> </u>			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Comm	ients	
	Pump On								
			·						
					Ĺ				
				Í					
							Pump Off		
		EP STABILIZ			dinos within (	2 su pH 2 degree	rees C, and 200 μS/cm)		
			uga geographi uni dala dala	APLE INFOR	ienzolaneurolitienien				
Sa	mple ID	Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered	
	·		Туре		Containers	-		(y/n)	
		Ŵ	ATER LEVEL	MEASURE	VENT COLL	LECTION			
1 Water le	evel measuremen	t collected.							
	er level measurem				t in wellhead				
1	er level measurem er level measurem								
D Other:			· · · · · · · · · · · · · · · · · · ·						
			WELL	PURGING IN!	ORMATION				
-	3 well volumes ar								
_	3 well volumes ba			nd field parem	eters stabilize	ed.			
D Purged	well until field par	ameters stabil	zea.						
	Comments:	WLO							

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	<u>h</u>
Task No:	1.0				Date:	10-10112		
Well ID:	Swan				Weather:	Sunny, bra	2ezy, 90s	
ADWR No:					Sampler:	VNH		
				WELL DAT	A	Casino	Capacity	
Well De	epth (ft bis):	90			Nominal	Size (inches)	Galions per L 0.16	
Casing D	)iameter (in):	2	, 13			2 4	0.65	š 🕴
Static Wate	r Level (ft bmp):	L	10.39'			5 6	1.02 1.47	
		26		79		8 2.61 10 4.08		
	/olume (gal):			<u> </u>	Casin	g Volume = gallons		
Total Volum	ne Purged (gal):			D SAMPLIN				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
1362	Pump On							
1305	Iditionationi@utheitrinetetPetranet		33	6,89	26.8	360		
1310	8	11	88	6.96	23.8	360		
1318	16	11	1760	6,96	23,0	370		
1322	20	11	220	7,00	22,7	370		
	÷							
							Pump Off	
	L FIELD PARAMET	L ER STABILIZ/	TION: Three c	onsecutive rea	dings within (	0.2 su pH, 2 degree	es C, and 200 μS/c	m)
			SAN	MPLE INFOR	MATION			
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
Dea	$\hat{\mathcal{O}}$	1320	Poly	250mL	1	300.0	AU	Y
								ŕ
		M	ATER LEVEL	MEASURE	MENT COLL	ECTION		
K Water le	evel measuremen	t collected.		a di kan milan i nisi kan di si kan kan di s			1999 (Calendrich) (Constructional Construction (Construction)	
	er level measurem				t in wellhead			
	er level measurerr er level measurerr							
Other:	e level measuren	ient conected.	AAGE IS DOUIDING	y,				
			WELL	PURGING INF	ORMATION			
	3 well volumes a							
	3 well volumes ba			ind field parem	eters stabilize	əd.		
D Other:	well until field par	ameters stabil	200.					
L	Comments:	Dischara	o, less a	Uran (a	st rea	rs and w	vell need	ec
fuice	the dir		stabaliz	e				
•								

		استوسيت فتعريف والبريج			Client:	Freeport Coppe	r Queen Brank	:h
Project No:					- Date:	8-13-12		
Task No:					- Weather:	SUMMUL		
Well ID:	-JM	-2:4-	and a state of the			Vastophy 1	1 1	
ADWR No:	·		ana da mangalakan yang barang bar	WELL D/	Sampler:	<u>M45700W7 1</u>	Solling N	and ( particular distance)
	and the second secon					Cesing	Capacity	
Wall Depth (ft i	ils):	9	25		Nominal S	lize (inches)	Gallons per l 0.1	linear F 6
			411	-		4	0.5 1.0	5
Casing Diamot		A)	344.53			5	1.0	
Static Water Lo	rvel (ft bmp):		571.32			8	2.6 4.5	
Casing Volume	(gals):		77.7			10 j g Volume = gallons	and the second	
3 Casing Volum	nes (gals):	11	33.7		COLUMN STREET, STRE	3 VOMINIA - Barrow		
			ŕæ	LD SAMPL	ING DATA			
Time	Elapsed Time (min)	Oischarge Rate (gpm)	Total Discharge (gallons)	р:: (SU)	Temp (°C)	Specific Conductance (uSicm)	Com	nents
1300						T		
1305	5	25	32		24	349		
1400	1.0	G.C.	450	1.55	24.6 74.7	The second s		
1430	100-	3.7	120	745-	24.	349	·	
1530_	140	1.86	912	7.69	24.6	348		1
1610-	200	445		(			Baka S	inte
flelo								
			· ·				479.7	5
0800		1820 5.5	110	7.61	24.6	360	·	
0820	90 20 2 10 40	200055		7.64	241	363		
0841	بمحاب ومستجد بالمتحد بالتباري والاحتاج		s/	AMPLE INF	ORMATION	7.65 24.	6 366	
	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	·Preservative	Ca
Ť'n	n-24.	0900	plastic	250 ml	1	EPA 300.0	nóne,	<u></u> fi
, <u> </u>						×.		
						<u> </u>	<u> </u>	
<u>}</u>						L		
						L		1
Additional C	onments:							/
	Contraction of the local division of the loc							

	Groundw	ater Sam	pling Forn	n					
Project No:					Client:	Freeport Cop	per Queen Bra	anch	
Task No:			•		Date:	le: <u>7-9-12</u>			
Well ID:	······································	TM-6			Weather: Partly Clauds				
ADWR No:		7			Sampler:	1/151starles	- 1 Star	na	
				WELL C	ATA				
		ሳ /	۰ <i>۰</i>		N		g Capacity	er Linear Foot	
Vell Depth (it t	ils):	2(	<u>W</u>			Size (inches) 2		0.15	
asing Diamot	ər (in):	· .	411			4	(	0.85	
		······	× + × /		5 1.02				
Natic Water Le	vel (it bmp):		21.7		ł	6		1.47 2.61	
asing Volume	(gals):	÷	25			10	6	1.08	
Casing Volum					Casing Volume = galions/foot * water column (feet				
	ing an		FI	eld Sampl	ING DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	рН (SU)	Temp (°C)	Specific Conductance (u3/cm)	Con	nments	
1420					••			·	
1475	5	11.5	57	C.RO	21.0	517			
1430	10	11.5	115	6.91	50, 8	509			
1435	15	11.5	177	1.82	20.8	505			
	· · · · · · · · · · · · · · · · · · ·				<i>v</i>				
·	·							and the second secon	
	· ·								
	· · · · ·		·						
			•						
میں ان میں میں میں میں اور اور میں میں اور اور میں میں اور میں میں اور میں میں اور اور میں میں اور اور میں میں میں اور									
t 				MPLE INFO		-			
Semj	ole ID	Time	Container Type	Volumo	No. of Containers	Analysis Method	Preservative .	Gomments	
Tm-	1	1435	plastic	250 mi	1	EPA 300.0	none;	filtered	
	<u></u>	<i>i i c i</i>		, 					
			. 7			· ·		-:'	
								_	

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Groundwa	ter Samp	ling Form	<u> </u>					
				Cilent:	Freeport Copp	er Queen Brai	រជា	
				Date:	Q-12-1	2		
TI	カンフ			Weather:	Luxur			
	C			Sampler:	( Jan to De	~ L Sheven	<u>~11</u>	
	ana an		WELL D	ATA		•	· · · · · · · · · · · · · · · · · · ·	
			an an a tha an tha an tha ta an tha Degma					
ols):				Nominal				
					4		65	
er (in):	ليستعم ويتفاده ومعيره				5		02	
wei (ft bmp):	TM-	-7			6			
	-	1			8			
e (gals):				Casin	· · · · · · · · · · · · · · · · · · ·			
nes (gals):		Ê	TI D SAMPL					
	, 			[	Specific			
Elapsed Time (min)	Discharge Rate (gpm)	) ciai Discharge (gallons)	рН (SU)	Temp (°C)	Conductance (µS/cm)	Comments		
2	ľ'n	20	1.73	20.9	682		-	
	- 1 9							
Ч	10	40	1.20	240	400			
1-4-			6.6	Ľ		·		
1:	1	C.D	60 84	264	405			
	1 7			<u> </u>			***	
3	10	90	1,83	21.7	415		والمراجع المراجع الم	
	1-11-11	, w	t.	<u></u>	<i>v</i> •			
						an a		
							an a	
		S/	AMPLE INFO	DRMATION				
nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Comments	
.1.	1093	plastic	250 ml	1	EPA 300.0	none	filtered	
{	1	1		1		-		
					\ \			
	-		-					
				-			· ·	
		1						
	ols): er (in): evel (ft bmp): e (gals): nes (gals): Elapsed Time	$\frac{1}{1} \frac{1}{1} \frac{1}$	$\frac{1}{10000000000000000000000000000000000$	WELL D       ols):	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	

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Project No:	055038				Client:	- Freeport Coppe	er Queen Brand	;h
Task No:	1				Date:	9/13/12		
Well ID:		U58	$\overline{\mathcal{O}}$		Weather:	Sunny	705	
ADWR No:		<u> S CACIO</u>			Sampler:	MML		
				WELL DA		ere les estant les désidées et de la company de la comp		
Well De	pth (ft bls):	290	)		Nominal	Casing Size (inches)	Capacity Gallons per L	inear Foot
		(o``				2 4	0.16	1
	iameter (in):	17020	<u> </u>			5	1.02	2
Static Water	Level (ft bmp):	210.0	)			6 8	1.47 2.61	1
Casing V	olume (gal):		x3 =		10			3
Total Volum	e Purged (gal):					g Volume = gallons	/foot * water colun	nn (feet)
			trib doministry approximation ( )	D SAMPLIN	G DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (⁰C)	Specific Conductance (µS/cm)	Comm	ents
	Pump On							
-1661269				8.16	21.2	403.4	clear stig	to brown
1219				8.13	21.5	405.7		~~~~
1229				8.12	21.2	406.8		
1239				8.09	21.1	407.0		
			······				*	
	1							
							Pump Off	
	FIELD PARAMET	ER STABILIZA	TION: Three c	L onsecutive rea	l Idings within (	).3 su pH, 2 degree		m)
			Anteriology representation and anterior de	IPLE INFOR	9.1.000 Million (2010) 2010 2010			
Sai	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
TM-10	USBP	1239	Poly	250	١	300.0	N	<u> </u>
								/
		Ŵ	ATER LEVEL	MEASURE	MENT COLL	ECTION		
Water le	vel measuremen	t coliected.	, sana gaalan ka ka ka ka	ana ana ang ang ang ang ang ang ang ang		and an		
	r level measurem				t in wellhead			
	r level measurem r level measurem							
No wate     Other:	i ievei measurem	ient collected. 1	vaca is pumping	ļ.				
			WELL	PURGING INF	ORMATION			
Purged	3 well volumes ar	nd field parame	ters stabilized.					
-	3 well volumes ba			nd field parem	eters stabilize	ed.		
Purged     Other:	well until field par	ameters stabili	zed.					
	Comments:							<u></u>
	COMINGINS.							

	Groundwa	ater Samp	oling Form	7 ·			`			
Project No:					Client:	Freeport Copp	er Queen Bra	nch		
Task No:	-				Deto:	7-10-1	2			
	TV	n - 15			Weather:	Sanny				
Well ID:	-	<u>l</u>			Sampler:	- Sanny Austorier )_ Slavim-				
ADWR No:				WELL D	Contraction of the local division of the loc	han the territies of the second second	GALEGO CALINGUNAN			
					i	Casin	i Capacity			
Well Depth (it i	sis):	32	25		Nominal	Size (inches)		Gallons per Linear Foot		
	,		111			2		.76 .65		
Casing Diamet	er (in):	÷	7	-		5		.02		
Static Water Le	nal (it issue).	R	IA			6		47		
Static Address me	tack for mireful-	CONTRACTOR OF THE OWNER				8		<b>61</b>		
Casing Volume	: (gals):					10 4.88 Casing Volume = gailons/foot * water column (feel)				
3 Casing Volum	nes (gals):					g Volume = gallon	siloot " water co	auu (iser)		
		、 、	FIE	ld Sampl	ING DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	рН (SU)	Temp (°C) Conductance (USicm) Comments			ments		
1200						-				
1220	20	2	140	6.93	24.2	376				
1940	40	5	280	701	225	328	aganga marakati pinta ana ina pinta a			
7.0	10	7	420	7.04	337	379				
7300-				1.4	~~~(		` 			
						•				
			•							
			<u>in an an air an air an </u>	_			· · · · · · · · · · · · · · · · · · ·			
			S/	MPLE INFC	RMATION					
Sarr	nple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	·Preservative	Comments		
TM-	15	1300	plastic	250 ml	1	EPA 300.0	néne,	filtered		
				1		54				
·						a an				
<u> </u>		]	<u> </u>	1	1	4				

Additional Comments:

Airline BO, Brolan Soundar Time in place

			No. of Concession, Name of Street, or other					
				Client:	Freeport Coppe	r Queen Branc	h	
				Date:	7-9-1	2		
			[	Weathar:	Smary 97			
<u> </u>	-16-			Sampler: Christoday 2 Shumm				
f			WELL DA	Colored Street, St	1153.27 are	incyf link briederione	E (Kali ja kali	
					Casing	Capacity		
		115		Nominal S		Gailons per L	inear Foot	
ls): _		1.11			2	0.6		
r (iri):	7.1			4 5	1.0			
		7255	- 1		6	1.4		
vel (it bmp):		10.00		- 8		4.08		
/maia}*		27.5		and the second	10			
	<u></u>	82.5		Casin	y Volume = gallons	/feot * water colu	nn (reer)	
es ((1215):		Élei	LD SAMPL	NG DATA				
Elapsed Time	Discharge Rate	Total Discharge	pH (SU)	Temp (°C)	Conductance	Comm	ents	
(min)	(gpan)	(gañons)	ZOTO CONTRACTOR OF CONTRAC	CONTRACTOR OF TAXABLE	and the second			
		1001	1.00	910	1294	(1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977) - 1977)		
5	21	1:05		Concession of the local division of the loca				
10	21	219			1.6.4			
15	21	315	6.75	1219-				
- Internet from the	<i>«</i> [	Contraction of the local division of the loc		<u> </u>				
				<u> </u>	<u> </u>			
		·			[			
				<u></u>		استعلال معالي معتنار معرية مستند مرافا معرا		
		•					NE LONG VERY CLOUD AND	
				<u> </u>			فسيستجذب يفتسيكم والمسيني	
		SA	/WPLE 1141-		1		Comm	
mple ID	Time	Container Type	Volume	No. et Containers	Analysis Method	+Preservative	(COLUMN	
			260 mi	4	EPA 300.0	nóne,	filter	
1-16	1215	plasuc				r		
			+		-			
	_	<u> </u>						
			+					
		and the second		Contractor of the second				
	(gais): es (gais): Elapsed Time (min)	r (In): rol (ft Inmp): (gals): res (gals): Elapsed Time (min) 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 21 15 15 15 15 15 15 15 15 15 1	r (in): 72.55 (gais): 27.5 res (gais): 27.5 res (gais): 27.5 82.5 FIE Elapsed Time 72.55 82.5 FIE Cischarge 70 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 105 1215 105 105 105 1215 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 12	r (in): $72.55$ red (it imp): $72.55$ (gais): $27.5$ res (gais): $82.6$ FIELD SAMPLI Elapsed Time Rate Discharge (su) (gain) (gain) (su) 52.1 105 (c.98 19 2) $210$ (c.98 19 2) $210$ (c.98 15 2) $105$ (c.98 100 $100$ Time Container Volume 100 $1215$ plastic 250 mi 100 $1215$ plastic 250 mi	s):	Image: System       Image: System<	Image: Solution     Image: Solution     Solution     Solution     Solution     Solution     Solution     Solution       r (m):	

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Project No:		•			Glient:	Freeport Copp	er Queen Brar	nch		
Task No:					Date:	771-				
		TM-19	A_		Weather: Partly Cloudy					
Well ID:		11114	<u></u>		Sampler:	(hastopher	1 Sugar	$\sim$		
ADWR No:				WELL D		Providence		an a		
							Capacity			
Weil Depth (it	bis):	700	2		Nominal	Size (Inches) 2	Gallons per 0.*	Linear Foot 16		
Casing Diame	tər (ils):	4	et			4	0.			
-	-		125			5	1.	57 57		
Static Water L	svel (ft bmp):	204.75			8		1         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         2         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51         51			
Casing Volum	e (gals):	, 	322			10         1				
3 Casing Volu	mes (gais):	9	11.			g Volume = gallon	Siloot - Waler Coa	anan (reet)		
	ni da gan Bio gan di na manana anna	, t	FIE	ild sampli	NG DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Totai Discharge (galions)	рН (SU)	Temp (°C)	Specific Conductance (j:S/cm)	Comments			
1200										
1215	15	25	325	7.17	23.5	506	· .			
1225	25	25	425	710	93.5	-507				
1240	- yp	25	- pon-	7.12		505				
1						·		-		
			-							
			•							
						<u> </u>				
			S/	MPLE INFO	RMATION	and the second				
; 	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative .	Comments		
TM	-194	1240	piastic	250 ml	1	EPA 300.0	ngne;	filtered		
				<b>_</b>	<u> </u>	••	, 			
				<u> </u>	<u> </u>					
								and the second		
Additional Co	mments:	1979)					1 - 2 - 1			
				ř	19/512					

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				, 		ويودين والأنساني بالمتعادية أنامده				
Project No:					Client	Freeport Cor	oper Queen Br	anch		
Task No:	,,				Date:		1-12			
Well (D:	Th	1-42			Weather:	Weather: Partly Cloudy				
ADWR No:	7				Sampler:	Christophe	2-Staring			
				WELL	DATA			Prosection of Life and Science		
			2/21			Casing Capacity				
Wall Depth (ft	bla):		250'		Nominal Size (inches) Gallo 2			er Linear Foot 0.16		
Casing Diame	ter (in):	·	511			4		0.65		
		. 1	1/1.		1	5		1.02		
Static Water L	evel (ft bmp):	<u>`</u> ک	16.10		-	6	3	1.47 2.61		
Casing Volum	e (gals):		34.6		[	10	1	4.08		
Casing Volu		10	3.2		Casi	ng Volume = gallo	ns/foot * water co	olumn (feet)		
	All and a second se	- l ×	Â	eld sampi	ING DATA	an a		i i i i i i i i i i i i i i i i i i i		
Time	TimeElapsed TimeDischargeTotalpH(min)(min)(gpm)(gallons)(SU)				Temp (°C)	Specific Conductance (µS/cm)	Can	nments		
0615										
0625	10	5	30	1.75	21.1	1169				
01.35	20	3	100	6.71	21.7	1152				
0445	30	5	150	1,72	211	1155				
Most	Man	22-	2017	04		1.	-			
	•									
			·							
i			SA	MPLE INFO	RMATION					
Sam	pie ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative .	Comments		
Tm	- 42 .	01.45	plastic	250 ml	1	EPA 300.0	náne	filtered		
· ·	,			, 						
•						· ·				
	21210.21.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		~					and a state of the		
dditional Con				24	NR. M. P. Bandar M. C.					
	Calibort of	Motor	- 							

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Project No:	055038				Client:	Freeport Copp	er Queen Bran	ch
Task No:	1.0				Date:	16-TUL		
Well ID:	tvi	236			Weather:	Partly C	lowdy, b	reezy
ADWR No:					Sampler:	VAH	ł	
				WELL DA	TA			
Well D	epth (ft bis):	222,			Nomina	Casing Size (inches)	Capacity Gallons per L	
Casing I	Diameter (in):	12"				2 4	0.1 0.6	
Static Wate	er Level (ft bmp):	127.8	31		]	5 6	1.0 1,4	
	Volume (gal):	(000	x3 = (	80 <i>0</i>		8 10	2.6 4.0	
	ne Purged (gal):				Casin	ig Volume = gallon	s/foot * water colur	mn (feet)
			FIE	D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (°C)	Specific Conductance (µS/cm)	Comm	ents
1530	Pump On							
1535	5	100	500	7.12	22.0	540		
1540	10	100	1000	7,29	21.3	530		
1545	15	100	1500	7.30	21.1	500		
1550	20	100	2000				Issues w/ho	se bib
							Pump Off	
	FIELD PARAME I	ER STABILIZ		APLE INFOR		0.2 su pH, 2 degree	es C, and 200 µ5/0	311) Tanada ang ang ang ang ang ang ang ang ang an
			Container	n nu suite de la suite T	No. of			Filtered
Sa	mple ID	Time	Туре	Volume	Containers	Analysis Method	Preservative	(y/n)
TVI	236	1355	Poly	250ml	l	300.0	NA	Y
								Ĩ
		N N	ATER LEVEL	MEASURE	H MENT COLL	ECTION		
🛱 Water i	evel measuremen	t collected.			ut ut de la			
•	er level measurem		No access to w	ellhead/No po	rt in wellhead			
	er level measurem							
	er level measurem	ent collected.	Well is pumping	<b>ļ</b> .				
Other:			WEU	PURGING INI	EORMATION			
R Durgod	3 well volumes ar	d field parame	NGCONTRACTOR AND IN THE	aibulan da kanadi				
E' \ -	3 well volumes ba			nd field parem	eters stabilize	ed.		
	well until field par			•				
D Other:								
Additional	Comments:	Moasi	ired 5	WL	inside	e old w	indwill	<u>b ( dq</u>
·····								<u> </u>



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Project No:	055038				Client:	Freeport Coppe	er Queen Bran	ch
Task No:	1.0				Date:	16 JU112		
Well ID:	TUI 713	5			Weather:	Partly Cloc	dy, hot	
ADWR No:					Sampler:	VNH	1/	
				WELL DA	TA III			
Well D	epth (ft bls):				Nominal	l Size (inches)	Capacity Gallons per L	and the second
Casing I	Diameter (in):					2 4	0.1	
		131.	97			5 6	1.0) 1.4	
Static wate	er Level (ft bmp):					8	2.6	1
Casing	Volume (gal):		x3 =			10	4.0	
Total Volun	ne Purged (gal):					ng Volume = gallons	s/toot * water colur	nn (feet)
				D SAMPLIN	IG DATA			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Specific Conductance (µS/cm)	Comm	ents
	Pump On							
								-
							Pump Off	
	FIELD PARAMET	ER STABILIZ	ATION: Three or	onsecutive rea	dings within (	0.2 su pH, 2 degree	es C, and 200 μS/c	:m) Hennes-karangebraat
			SAN	MPLE INFOR	MATION			
Sa	Imple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)
		, N	I /ATER LEVEL	I MEASUREI		ECTION		
Water I	evel measuremen	t collected.				André istaline nélese lataté line taliné nélesi készi kés		
•	er level measurem		No access to we	eilhead/No poi	rt in wellhead			
4	er level measurem							
	er level measurem	ent collected.	Well is pumping					
Other:			WELL	PURGING INI	ORMATION			
	3 well volumes ar	nd field parame		Engels Eliter Elite	ace and the second s	uner her han der bie her her her her her her her her her he	espinessing, persite	mentalentitentite
9 -	3 well volumes ba			nd field parem	eters stabilize	ed.		
-	well until field par							
□ Other:								
Additional	Comments:	WLG						
·····								
****								

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	:h		
Task No:					Date:	16JUL				
Well ID:	TVI	875			Weather:	Partly C	lovdy			
ADWR No:					Sampler:	WH'	/			
				WELL DAT	A	Casino	Capacity			
Well De	epth (ft bis):	33			Nominal	Nominal Size (inches) Gallons per Linear For 2 0.16				
Casing [	Diameter (in):	B	11			2 4	0.65	5		
Static Wate	r Level (ft bmp):					5 6	1.02 1,47			
	/olume (gal):		x3 =			8 10	2.61 4.08			
					Casin	g Volume = gallons				
Total Volun	ne Purged (gal):		FIEL	D SAMPLIN	G DATA					
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Specific Conductance (µS/cm)	Commo	ents		
1625	Pump On									
1627	2	500	1000	6.93	23,6	\$ 50				
1630	5	500	2500	7.06	22,7	840				
1632	7	500	3500	7.13	22,2	860				
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	······································						Pump Off			
	FIELD PARAMET	ER STABILIZ	ATION: Three c	onsecutive rea	dings within C	).2 su pH, 2 degree	s C, and 200 μS/c	m)		
			SAN	APLE INFOR	MATION					
Sa	mple ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)		
TVI	875	14640	Poly	250mL	l	300.0	NA	Υ		
DUPE	7162012	1640	Poly	250 m L	1	368,0	NA	Y		
		v	VATER LEVEL	MEASURE	MENT COLL	ECTION				
	evel measuremen									
	er level measurem				t in wellhead					
	er level measurem er level measurem									
Other:										
				PURGING INF	ORMATION					
	-⊠-Purged 3 well volumes and field parameters stabilized. □ Purged 3 well volumes based on previous water level and field paremeters stabilized.									
-	3 well volumes ba well until field par			no nelo parem	GIGIS SIGUIIZE	<del>.</del>				
Other:	· · · •									
Additional	Comments:									
					····					



Project No:	055038				Client:	Freeport Coppe	er Queen Brand	:h
Task No:	<u>h0</u>				Date:	510212		
Well ID:	Weed				Weather:	Overast, a	indy, ~7	Ĵ
ADWR No:					Sampler:	UNHOM	MU	
				WELL DA	ΓA		Capacity	
Well Depth (ft bis):		-320			Nominal Size (inches)		Gallons per Linear Foot	
Casing Diameter (in):					2 4		0.16 0.65	
Casing Diameter (iii). Static Water Level (ft bmp): Casing Volume (gal):		NA. x3 =			5 6 8 10		1.02	
							2.61	
							4.08 s/foot * water column (feet)	
Total Volun	ne Purged (gal):				[	g volume = gallons	atoot water coun	
			illend hedrosekten beddien, biologika	D SAMPLIN	IG DATA	Specific		
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (℃)	Conductance (µS/cm)	Comments	
1548	Pump On							
1555	7	3	21	7.53	22,1	385,2		
1600	12	3	36	7.51	22.0	385.1		, -
1605	17	ß	51	7,71	21.9	385.6		
1610	22	3	66	7.64	21.7	385.8		
				<u> </u>			Pump Off	
	FIELD PARAMET	I 'ER STABILIZ/	ATION: Three c	I onsecutive rea	udings within (	0.2 su pH, 2 degree	s C, and 200 μS/c	m)
			SAN	IPLE INFOR	MATION			
Someta ID		Time	Container	Volume	No. of	Analysis Method	Preservative	Filtered
	Sample ID		Туре		Containers			(y/n)
		W	ATER LEVEL	MEASURE	MENT COLL	ECTION		
D Water I	evel measuremen	t collected.						
	er level measurem				rt in wellhead			
	er level measurerr							
Other:	er level measuren	nent collected.	weii is pumping	].				
			WELL	PURGING IN	ORMATION			
D Purged	3 well voiumes a	nd field parame	eters stabilized.	en al algun al the Andri Allandi A	ens enabels in the state of the second s	rano myona a harissando da philippi		and a submort of the last of the state of th
Purged	3 well volumes b	ased on previo	us water level a	nd field parem	eters stabilize	ed.		
	well until field par	ameters stabil	ized.					
Additional	Comments:							
						·.		

gad A

Project No:	055038				Client:	Freeport Copp	er Queen Brand	ch	
Task No:	1				Date:	13 50612			
Well ID:	Weiskopf				Weather:	Partly cloudy, 80'F			
ADWR No:	1				Sampler:	VNH (	1 -		
				WELL DA	Γ <b>Α</b>		Connoite:		
Well De	epth (ft bls):	200'			Nominal Size (inches)		Capacity Gallons per Linear Foot		
Casing E	Diameter (in):	(o ^{`)}			2 4		0.16 0.65		
	<b>-</b>		149.79'			5		1.02 1.47	
Static Water Level (ft bmp): Casing Volume (gal):		$74 \times 3 = 222$		777	8		2.61		
				10 Casing Volume – gallon		4.08 s/foot * water column (feet)			
Total Volun	ne Purged (gal):					g volume – galom			
		Discharge		_D SAMPLIN	GUAIA	Specific			
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Conductance (µS/cm)	Comments		
0842	Pump On								
0852	10	6.5	65	6.92	22,6	1350	Water has fishy	1 ador	
0902	20	6.5	130	6.99	221	1440	•ر *	4	
09.12	30	6,5	195	6.79	22.1	1360	۶ <u>(</u>	17	
0917	35	6.5	227.5	6.83	22,2	1530	ч.	4	
				1					
						· · · · ·			
							Pump Off		
	FIELD PARAMET	 FR STABILIZ/	ATION: Three c	I onsecutive rea	l Idinas within (	).2 su pH, 2 degree	1 '	m)	
			di kumum propini da sasti	MPLE INFOR	tana da se				
Sa	mpie ID	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Weisk	Weishopf		Porty	250mL	١	3001 U	NA	Υ	
			/						
		N T	ATER LEVEL	MEASURE	MENT COLL	ECTION			
Water I	evel measuremen	t collected.		len might han teachtraite	5) 50 10 50 50 10 10 10 10 10 10 10 10 10 10 10 10 10	Alexielen in Sulices (Inclusion in	an a	ananan ana ana ana atao atao atao	
· · ·	er level measurem		No access to w	ellhead/No poi	t in wellhead				
	er level measurem								
I	er level measurem	ent collected.	Well is pumping	<b>]</b> .					
Other:			WELL	PURGING INI	ORMATION				
∞ ÆK Puraed	3 well volumes a	nd field parame	eters stabilized.		n de seguide de seguid		an den de la company de la	i / zlatidopiziciajki idajtuten	
	3 well volumes ba			nd field parem	eters stabilize	ed.	-		
-	well until field par	ameters stabil	ized.						
Other:	<u></u>					······			
Auditional	Comments:						·····		

Z:\Data\Projects\G & K\055038_Copper Queen Branch Mitigation Order\Groundwater Monitoring\Forms\Groundwater Sampling Sheet

Project No:	055038				Client:	Freeport Coppe	er Queen Branc	h	
Task No:	4				Date:	17270612			
Weil ID:	Zande				Weather:	Partly doc	dy, hot	805	
ADWR No:					- Sampler:	VNH			
				WELL DA					
Well Depth (ft bls): 280					Casing Capacity Casing Capacity Nominal Size (inches) Gallons per Linear F				
		6".			2 4		0.16 0.65		
Casing Diameter (in): Static Water Level (ft bmp): Casing Volume (gal):					5		1.02		
		150.63				6 8	1.47 2.61		
		190 x3 = 570			10		4.08		
Total Volur	ne Purged (gal):					g Volume = gallons	/foot * water colum	n (feet)	
			SELECTION DESCRIPTION DE LO DA DE LO DA DE LO DA DE LO DE	D SAMPLIN	IG DATA				
Time	Elapsed Time (min)	Discharge Rate (gpm)	Total Discharge (gallons)	pH (SU)	Temp (ºC)	Specific Conductance (µS/cm)	Comments		
1155	Pump On								
1205	10min	11,0	110	7.24	22.2	440			
1215	20	11	220	7.39	22.0	430			
1225	30	· 11	330	7.33	22.0	420			
1235	40	<u>(</u> ]	440	7,34	22,2	430			
1245	50	11	550						
							Pump Off		
	FIELD PARAMET	ER STABILIZA	ATION: Three c	onsecutive rea	u adings within (	).2 su pH, 2 degree	s C, and 200 μS/cr	n)	
			SAN	MPLE INFOR	MATION				
Sa	Sample ID		Container Type	Volume	No. of Containers	Analysis Method	Preservative	Filtered (y/n)	
Fund	Fander		Poly	250 m2	ι	300.0	NA	<u> </u>	
			t					/	
		- W	ATER LEVEL	MEASURE	MENT COLL	ECTION			
A Water	evel measuremen	t collected.		akan Kerjingkan Kernala		nna heisteringen sich verhollte einen sich verheite	naan daha consula da	organismistiki (19	
1 -	er level measurem		No access to w	ellhead/No po	rt in wellhead				
	er level measurem								
□ No wat	er level measurem	ent collected.	Well is pumping	<b>]</b> .					
			WELL	PURGING IN	FORMATION				
Purgec	3 well volumes a	nd field parame	eters stabilized.	en een genaam een maar en de kerkelijk en de de kerkelijk en de de kerkelijk en de de kerkelijk en de de kerkel Een de		Andronanist most grannerg (Classific Arg			
	l 3 well volumes ba	ased on previo	us water level a	ind field parem	eters stabilize	ed.			
-	l well until field par	ameters stabili	ized.						
Other:	-								
Additiona	Comments:		······································						