



Sierrita Operations  
Environment, Land & Water Department  
6200 West Duval Mine Road  
PO Box 527  
Green Valley, Arizona 85622-0527

March 28, 2013

**Via Certified Mail # 7011 1150 0000 0283 8249**  
**Return Receipt Requested**

Ms. Mindi Cross  
Arizona Department of Environmental Quality  
Water Quality Compliance Section  
1110 West Washington Street  
Phoenix, Arizona 85007-2935

**Re:      Mitigation Order on Consent Docket No. P-50-06**  
**January 1<sup>st</sup> through March 31<sup>st</sup>, 2013 Status Report**

Dear Ms. Cross:

In accordance with Section V.A. of the Mitigation Order on Consent, Docket No. P-50-06, Freeport-McMoRan Sierrita Inc. (Sierrita) submits the Status Report covering the period from January 1<sup>st</sup> through March 31<sup>st</sup>, 2012.

Since the last Status Report was submitted, the following measures have been taken under Section III of the Mitigation Order:

- Completed the 1<sup>st</sup> quarter, 2013 groundwater monitoring activities.
- Completed drilling, air lifting, and pump testing on FFS-3, FFS-4, FFS-5, and MC-2 wells.
- Commenced drilling of FFS-2 and FFS-1 wells.
- Completed construction of the booster station needed for the entire mitigation well conveyance system.
- Continued construction of conveyance system on West Desert Trails (former state land).
- Continued work on the feasibility study for the new tailings impoundment.
- Held the first CAG meeting of the year on March 14<sup>th</sup>, 2013.

During the next quarter, the following activities will be conducted:

- Continue drilling the remaining MC and FFS wells.
- Complete pump installation on all PS wells.
- Complete 25kV distribution line for all FFS, MC, and PS wells.
- Complete inspections and testing of booster station for the entire mitigation well conveyance system.
- Continue development of the new tailing impoundment feasibility study.
- Conduct subsidence study evaluating Mitigation Order pumping plan impacts to community and Sierrita operational structures.
- Complete and submit the Semiannual Groundwater Monitoring Report, due on April 30th, 2013.
- Conduct quarterly groundwater monitoring according to the revised groundwater monitoring schedule.
- Continue to revise Mitigation Plan implementation schedule for later submittal for ADEQ approval.

- Hold the next CAG meeting.

Also, please find the attached 2012 Interceptor Well Field Operations Monitoring Report, which Sierrita agreed to submit in the Mitigation Plan approval deferral letter sent to ADEQ on March 18, 2009.

Please do not hesitate to contact me at (520) 393-2514 if you have any question regarding this submittal.

Sincerely,

*Clinton D. Beck*  
*for* Clinton D. Beck, E.I.T.  
Environmental Engineer  
Freeport-McMoRan Sierrita Inc.

CDB/ms  
20130326\_003

xc: David Haag, Arizona Department of Environmental Quality  
John Broderick, Sierrita  
Lana Fretz, Sierrita  
Ned Hall, Freeport-McMoRan Copper & Gold  
Stuart Brown, Freeport-McMoRan Copper & Gold  
Jim Norris, Clear Creek Associates

**TECHNICAL MEMORANDUM REPORT**

TO: Ms. Martha Mottley  
Chief Environmental Engineer  
Freeport--McMoRan Sierrita Inc.  
6200 West Duval Mine Road  
Post Office Box 527  
Green Valley, AZ 85622-0527

FROM: BasinWells Associates, PLLC

PREPARED BY: Buck Schmidt, Principal Hydrologist  
BasinWells Associates, PLLC

REVIEWED BY: Michael W. Bostic, R.G., Principal Hydrogeologist  
BasinWells Associates, PLLC

DATE: March 28, 2013

PROJECT NO.: 12-001

SUBJECT: 2012 Freeport -- McMoran Sierrita Inc. Interceptor Well Field  
Operations Performance Technical Memorandum Report.

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**1.0 INTRODUCTION**

This operations performance technical memorandum presents operational information for calendar year 2012 for the Freeport-McMoRan Sierrita Inc. (Sierrita) Interceptor Well Field. The Sierrita Interceptor Well Field is comprised of 24 active interceptor wells, with four new interceptor wells, IW-25, IW-26 IW-27 and IW-28, installed in late 2010 and activated in April 2012. The locations of the interceptor wells are shown on Figure 1. Table 1 tabulates well information including cadastral legal locations, target yield rates, well construction details, completion date and well age. Target yield rates were developed by groundwater modeling and capture zone analyses (HydroGeoChem & Clear Creek Associates PLC, 2010). Additional plume stabilization, mass capture, and focused feasibility study wells are planned in the future for an area to the northeast and east of the existing Interceptor wells.

Well field performance goals established by Sierrita to meet the goal of operation include:

- Operate all interceptor wells on a continual duty cycle run time, as close to 100 percent as practical. Acceptable duty cycle run time is identified within the range of 90 to 95% considering required maintenance and monitoring activities.
- Operate each interceptor well at or above target yield rates developed for each well.

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1

Groundwater from the interceptor wells is collected through a transmission pipeline running along the east and south flank of the tailings impoundment (Figure 1). Groundwater is conveyed through this transmission pipeline to the Sierrita Interceptor Tank, and then boosted to the Reclaim Tank. At the Reclaim Tank, the groundwater developed by the Interceptor Well Field is combined with reclaim water from the tailings impoundment dewatering for pumping to the mill site. The Reclaim water system provides a portion of the process water supply for mine operations.



Figure 1. Sierrita Interceptor Well Field

TABLE 1. 2012 SIERRITA INTERCEPTOR WELL FIELD INFORMATION

Well	Cadastral Location	ADWR Reg. No.	Target Yield Rate (gpm)	Well Depth (ft)	Well Dia. (in.)	Borehole Diameter (in.)	Casing Material	Upper Screen Depth (ft bbls)	Lower Screen Depth (ft bbls)	Pump Gallery?/ Interval (ft bbls)	Current Pump Setting (ft bbls)	Filter Pack Material	Basin Fill Base Depth (ft bbls)	Completion Date	Well Age
IW-1	D-18-13 29DCD	55-623129	250	855	14		LCS	234	843	No	480	GRAVEL	760	7/31/1978	34.7
IW-2A	D-18-13 28CCC	55-216464	425	1051	14	20	HSLA	350	1031	600-640	620	GRAVEL	1020	3/11/2008	5.0
IW-3A	D-18-13 28CBC	55-201732	500	1052	14	20	LCS	400	1030	No	540	GRAVEL	820	1/1/2004	9.2
IW-8	D-18-13 28BCC	55-508236	425	783	14	20	LCS	382	783	No	540	GRAVEL	759	7/26/1984	28.7
IW-9	D-18-13 28BCC	55-508238	250	853	14	20	LCS	412	853	No	605	GRAVEL	740	8/6/1984	28.6
IW-4	D-18-13 28BCB	55-623132	80	946	14		LCS	312	946	No	600	GRAVEL	490	7/23/1978	34.7
IW-24	D-18-13 28BBB	55-200556	100	884	14	20	LCS	348	860	No	602	GRAVEL	410	1/1/2004	9.2
IW-5A	D-18-13 28BBB	55-219131	100	900	14	20	SS	382	890	620-640	630	TACNA GRAVEL	436	5/1/2010	2.9
IW-23	D-18-13 21CCB	55-200555	150	964	14	20	LCS	375	935	No	550	TACNA GRAVEL	420	1/1/2004	9.2
IW-10	D-18-13 21CBC	55-508237	325	831	14	20	LCS	420	831	No	600	GRAVEL	730	8/15/1984	28.6
IW-22	D-18-13 21CBC	55-200554	325	590	14	20	LCS	359	560	No	550	GRAVEL	550	1/1/2004	9.2
IW-11	D-18-13 21CBC	55-508235	325	605	14	20	LCS	371	605	No	500	GRAVEL	563	8/24/1984	28.6
IW-6A	D-18-13 21BBC	55-545565	90	497	12	20	LCS	356	456	No	460	GRAVEL	456	11/29/1994	18.3
IW-12	D-18-13 21BBC	55-545555	150	600	12	20	LCS	358	560	No	560	GRAVEL	498	12/6/1994	18.3
IW-13	D-18-13 21BBC	55-545556	0	497	12	20	LCS	355	456	No	460	GRAVEL	452	12/1/1994	18.3
IW-14	D-18-13 21BBB	55-545557	75	549	12	20	LCS	357	508	No	520	GRAVEL	509	12/20/1994	18.3
IW-15	D-18-13 16CCC	55-545558	50	547	12	20	LCS	357	506	No	505	GRAVEL	507	1/8/1995	18.2
IW-19	D-18-13 16BCC	55-545562	200	540	12	20	LCS	379	499	No	522	GRAVEL	498	1/30/1995	18.1
IW-20	D-18-13 16BCB	55-545563	0	502	12	20	LCS	380	460	No	460	GRAVEL	470	2/6/1995	18.1
IW-21	D-18-13 16BBC	55-545564	150	601	12	20	LCS	400	560	No	520	GRAVEL	520	2/1/1995	18.1
IW-25	D-18-13 28CBD	55-219596	400	782	16	24	SS	359	720	No		SILICA SAND	475	11/1/2010	2.4
IW-26	D-18-13 28BCD	55-219143	400	780	16	24	SS	340	720	No		SILICA SAND	475	11/1/2010	2.4
IW-27	D-18-13 28BBD	55-219136	400	720	14	22	SS	380	660	No		SILICA SAND	465	11/1/2010	2.4
IW-28	D-18-13 21CCA	55-219137	400	760	16	24	SS	380	700	No		SILICA SAND	680	11/1/2010	2.4

**Note:**

LCS = low-carbon steel

HSLA = High-Strength Low Alloy Steel

SS = Stainless Steel

## 2.0 INTERCEPTOR WELL FIELD OPERATIONS

Total groundwater withdrawals in 2012 of the Sierita Interceptor Well Field are tabulated on Table 2. The well field withdrew about 7,400 acre-feet of groundwater in 2012. The Sierrita Interceptor Well Field, in total, produced 90 percent of the performance goals with respect to potential total groundwater withdrawal considering the target rates.

Well performance in 2012 on a well by well basis are tabulated in Attachment A. Run time percentages ranged from 62.7 to 98.6. Lower percentages are mostly associated with new interceptor wells activated in April 2012. As needed well and transmission line maintenance activities, and shut down of wells to perform monitoring activities resulted in performance of most interceptor wells within 90 to 95 percent duty cycle run times and considered acceptable.

Interceptor well field data plots including a well construction diagram; static and pumping water levels; yield rates; calculated specific capacity; sulfate concentrations; static saturated thickness of basin fill alluvium; and annotated descriptions of maintenance activities from 2003 to 2012 are included in Attachment B.

TABLE 2. 2012 INTERCEPTOR WELL FIELD TOTAL GROUNDWATER WITHDRAWAL	
Total Gallons Pumped:	2,413,055,610
Total Acre-Feet Pumped:	7,405

## 3.0 SUMMARY OF WELL MAINTENANCE ACTIVITIES

Summary of well and pump maintenance activities performed in 2012 are tabulated on Table 3 below. All maintenance activities were performed following collection and evaluation of maintenance monitoring parameters as described in the *Operations and Maintenance Manual for the Interceptor Well Field* (BasinWells, 2011).

TABLE 3. 2012 INTERCEPTOR WELL FIELD SUMMARY OF WELL AND PUMP MAINTENANCE ACTIVITIES		
Well	Approx. Dates Off Line for Maintenance	Maintenance Activities
IW-1	-	-
IW-2A	-	-
IW-3A	7/17/2012 - 8/6/2012	Replaced column pipe and pump
IW-8	9/?/2012 - 12/?/2012	Transformer Failure
IW-9	-	-
IW-4	11/1/2012 - 11/26/2012	Replaced column pipe and pump 11/30/2012 - Hour meter replaced
IW-24	-	-
IW-5A	-	-
IW-23	-	-
IW-10	-	11/30/2012 - Hour meter replaced

**TABLE 3. 2012 INTERCEPTOR WELL FIELD SUMMARY OF WELL AND PUMP MAINTENANCE ACTIVITIES**

Well	Approx. Dates Off Line for Maintenance	Maintenance Activities
IW-22	2/20/2012 - 3/7/2012	Replaced column pipe and pump 2/14/2012 - Hour meter replaced
IW-11	-	-
IW-6A	3/20/2012 - 4/10/2012	Replaced column pipe with fiberglass column pipe and replaced submersible pump
IW-12	5/?/2012	Replaced column pipe with fiberglass column pipe and replaced submersible pump
IW-13	-	-
IW-14	1/23/2012 - 2/7/2012	Replaced column pipe with fiberglass column pipe and replaced submersible pump
IW-15	1/1/2012 - 1/10/2012	Replaced column pipe with fiberglass column pipe and replaced submersible pump
IW-19	-	10/15/2012 - Hour meter replaced
IW-20	7/26/2012 - 8/7/2012	Replaced column pipe and submersible pump
IW-21	-	11/14/2012 - Totalizer replaced
IW-25	1/1/2012 - 4/15/2012	4/16/2012 - Put online for service
IW-26	1/1/2012 - 4/15/2012	4/16/2012 - Put online for service
IW-27	1/1/2012 - 4/15/2012	4/16/2012 - Put online for service
IW-28	1/1/2012 - 4/15/2012	4/16/2012 - Put online for service

#### 4.0 FUTURE MAINTENANCE ACTIVITIES

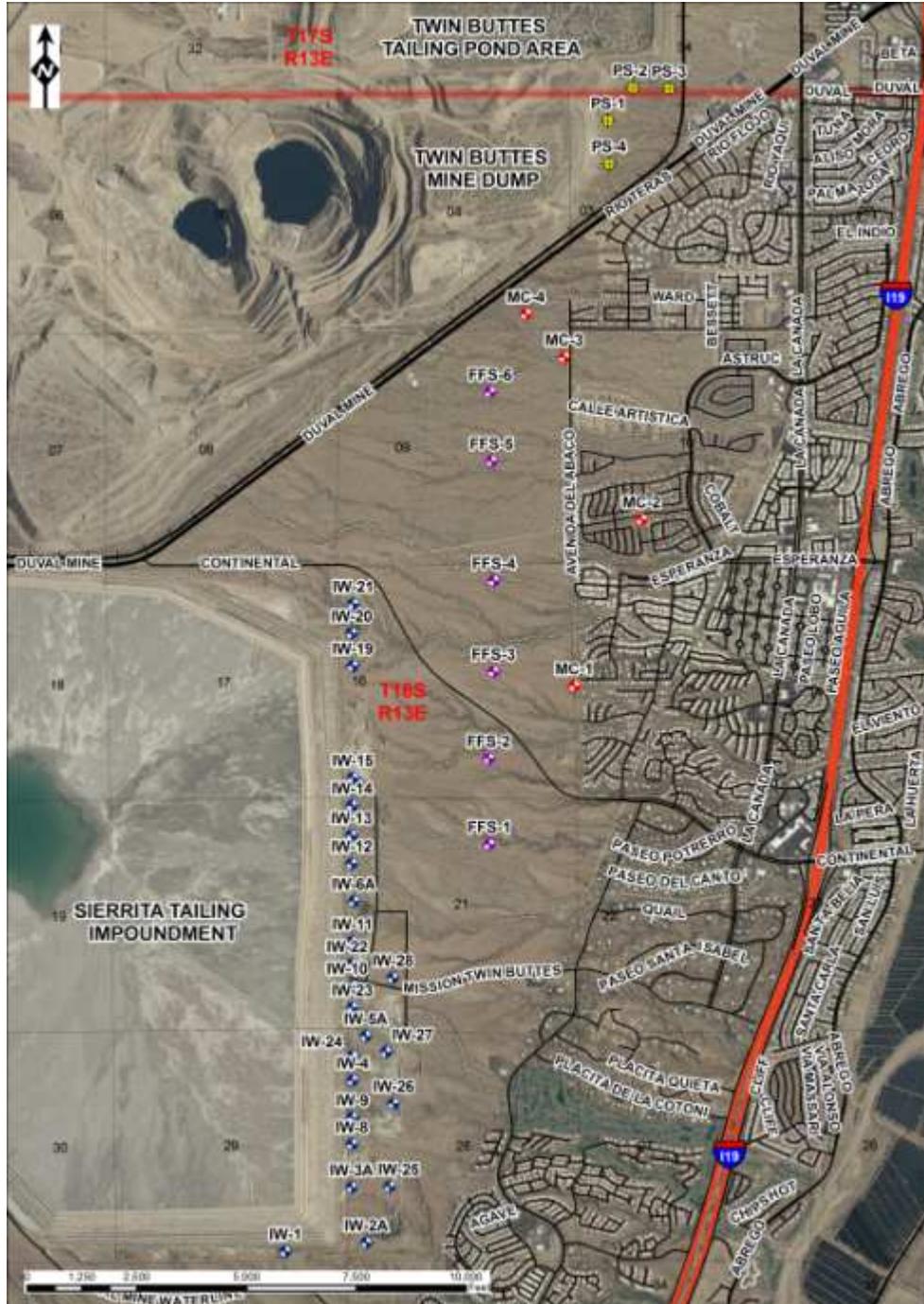
Future maintenance activities will continue to adhere to activities and frequencies as described in *Operations and Maintenance Manual for the Interceptor Well Field* (BasinWells, 2011). All maintenance activities to be performed following collection and evaluation of maintenance monitoring parameters.

Specific activities identified include the installation of a new interceptor well approximately 1,200 feet east of IW-11 and IW-6A (BasinWells, 2012). Operationally, IW-11 and IW-6A could continue to operate in conjunction with the new well. Once it is determined that life cycle of IW-11 or IW-6A have been exceeded, the new well should be able to maintain effective groundwater capture in the area. The original well(s) will either be abandoned or utilized for future groundwater monitoring. Construction of the new well is scheduled for 2013.

#### 5.0 OTHER ONGOING ACTIVITIES

Series of plume stabilization, mass capture and focused feasibility study wells are currently being installed and equipped. Location of these wells along with active inceptor wells are shown on Figure 2. Cadastral locations and Arizona Department of Water Resources (ADWR) registration numbers are tabulated in Table 4. Schedule of target yield rates for these wells are included on Tables 5, 6 and 7. Below summaries status of construction of these wells as of date of this report:

- Four plume stabilization wells have been installed and are in process of being equipped.
- Three of four of the mass capture wells have been installed and will be equipped by late 2013.
- Five of six of the focused feasibility study wells have been installed and will be equipped by late 2013.



**Figure 2. Sierrita Interceptor, Plume Stabilization, Mass Capture and Focused Feasibility Study Well Field**

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**TABLE 4. PLUME STABILIZATION, MASS CAPTURE AND FOCUSED FEASIBILITY STUDY WELLS' ADWR REGISTRATION NUMBERS AND CADASTRAL LOCATIONS**

Well	ADWR Reg. No.	Cadastral Location
PS-1	55-220861	D-18-13 03BBA
PS-2	55-220862	D-17-13 34CDC
PS-3	55-220863	D-17-13 34CDD
PS-4	55-220864	D-18-13 03BCA
MC-1	55-221660	D-18-13 16DAA
MC-2	55-221761	D-18-13 10CCB
MC-3	55-221661	D-18-13 09AAA
MC-4	55-220842	D-18-13 04DDC
FFS-1	55-221662	D-18-13 21ABC
FFS-2	55-221663	D-18-13 16DCA
FFS-3	55-221664	D-18-13 16ACD
FFS-4	55-221665	D-18-13 16ABA
FFS-5	55-221666	D-18-13 09DBA
FFS-6	55-221667	D-18-13 09ACA

**TABLE 5. TARGET YIELD RATE SCHEDULE FOR PLUME STABILIZATION WELLS**

Well Name	PUMPING RATE IN GALLONS PER MINUTE				
	2014 to 2020	2021 to 2025	2026 to 2030	2031 to 2035	2036 to 2042
PS-1	600	600	600	750	750
PS-2	600	450	450	450	450
PS-3	600	450	450	0	0
PS-4	750	750	800	1100	1100
<b>Totals</b>	<b>2550</b>	<b>2250</b>	<b>2300</b>	<b>2300</b>	<b>2300</b>

**TABLE 6. TARGET YIELD RATE SCHEDULE FOR MASS CAPTURE WELLS**

Well Name	PUMPING RATE IN GALLONS PER MINUTE				
	2014 to 2020	2021 to 2025	2026 to 2030	2031 to 2035	2036 to 2042
MC-1	700	700	700	700	700
MC-2	700	700	700	900	900
MC-3	600	600	600	900	900
MC-4	600	600	600	600	0
<b>Totals</b>	<b>2600</b>	<b>2600</b>	<b>2600</b>	<b>3100</b>	<b>2500</b>

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**TABLE 7. TARGET YIELD RATE SCHEDULE FOR FOCUSED FEASIBILITY STUDY WELLS**

Well Name	PUMPING RATE IN GALLONS PER MINUTE						
	2014 to 2020	2021 to 2025	2026 to 2030	2031 to 2035	2036 to 2042	2043 to 2050	2051 to 2060
FFS-1	700	700	500	500	200	200	200
FFS-2	600	400	400	400	100	200	200
FFS-3	400	400	400	400	400	200	200
FFS-4	500	500	300	300	300	400	400
FFS-5	900	900	900	900	900	500	300
FFS-6	600	600	600	400	400	200	200
<b>Totals</b>	<b>3700</b>	<b>3500</b>	<b>3100</b>	<b>2900</b>	<b>2300</b>	<b>1700</b>	<b>1500</b>

## 6.0 REFERENCES

- BasinWells Associates, PLLC, *Freeport-McMoran Sierrita Inc., Operations and Maintenance Manual for the Interceptor Well Field*, June 30, 2011.
- BasinWells Associates, PLLC, *Optimally Site and Design a Replacement Interceptor Well at the Freeport-McMoran Sierrita Inc.*, February 6, 2012.
- BasinWells Associates, PLLC, *Freeport-McMoran Sierrita Inc., 2011 Sierrita Interceptor Well Field Operation Performance Technical*, March 28, 2012.
- HydroGeoChem, Inc. and Clear Creek Associates, P.L.C., *Freeport-McMoran Sierrita Inc., Final Wellfield Conceptual Design*, January 29, 2010.

ATTACHMENT A

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**SIERRITA INTERCEPTOR WELL FIELD PERFORMANCE SUMMARY**

BasinWells Associates PLLC

9

**ATTACHMENT A.**  
**SUMMARY OF 2012 INTERCEPTOR WELL PERFORMANCE**  
**FREEPORT MCMORAN SIERRITA, INC.**

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)	Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-1	Jan	17,306,000	742	53.1	389	IW-2A	Jan	16,173,000	765	50.2	357
	Feb	14,883,000	645	45.7	386		Feb	15,955,000	645	42.8	361
	Mar	16,835,000	734	51.7	382		Mar	15,283,000	719	46.9	354
	Apr	17,376,000	780	52.7	387		Apr	14,171,000	666	43.5	355
	May	15,350,000	678	47.3	377		May	14,325,000	673	44.0	358
	Jun	17,555,000	756	53.9	387		Jun	14,360,000	689	44.1	347
	Jul	15,395,000	671	46.6	377		Jul	15,423,000	736	47.5	349
	Aug	15,448,000	682	47.4	378		Aug	14,081,000	683	43.2	344
	Sep	16,664,000	761	51.1	375		Sep	14,930,000	736	45.8	338
	Oct	16,282,000	718	50.0	378		Oct	14,376,000	719	44.1	331
	Nov	15,989,000	649	46.3	387		Nov	14,049,000	708	43.1	331
	Dec	12,135,000	738	37.3	274		Dec	14,484,000	734	44.4	329
IW-1 Total Gallons Pumped:						IW-2A Total Gallons Pumped:					
IW-1 Total Acre-Feet Pumped:						IW-2A Total Acre-Feet Pumped:					
IW-1 Average Yield Rate (gpm):						IW-2A Average Yield Rate (gpm):					
IW-1 % Run Time:						IW-2A % Run Time:					
IW-3A	Jan	25,670,000	770	78.8	556	IW-4	Jan	18,932,000	773	58.1	409
	Feb	20,974,000	645	64.4	542		Feb	15,937,000	646	48.9	411
	Mar	20,771,000	718	63.7	482		Mar	17,667,000	734	54.2	412
	Apr	17,513,000	663	53.7	440		Apr	18,071,000	732	55.5	411
	May	16,955,000	673	49.3	398		May	16,650,000	678	51.0	410
	Jun	14,317,000	693	48.5	349		Jun	16,831,000	694	51.6	404
	Jul	2,272,000	183	7.0	207		Jul	18,450,000	264	56.6	402
	Aug	21,528,000	546	66.1	657		Aug	9,745,000	405	29.9	401
	Sep	29,370,000	735	89.5	663		Sep	2,286,000	136	8.5	400
	Oct	28,281,000	720	86.8	635		Oct	0	0	0.0	
	Nov	27,632,000	709	88.8	649		Nov	0	0	0.0	
	Dec	28,452,000	673	87.2	704		Dec	0	0	0.0	
IW-3A Total Gallons Pumped:						IW-4 Total Gallons Pumped:					
IW-3A Total Acre-Feet Pumped:						IW-4 Total Acre-Feet Pumped:					
IW-3A Average Yield Rate (gpm):						IW-4 Average Yield Rate (gpm):					
IW-3A % Run Time:						IW-4 % Run Time:					
IW-9	Jan	11,936,000	772	36.8	258	IW-4	Jan	2,638,000	774	8.1	57
	Feb	10,054,000	651	30.8	257		Feb	2,286,000	651	7.0	59
	Mar	10,990,000	715	33.7	256		Mar	2,603,000	715	7.6	58
	Apr	10,849,000	712	33.3	254		Apr	2,618,000	727	7.4	55
	May	10,029,000	677	30.8	247		May	2,025,000	670	6.2	50
	Jun	9,908,000	692	30.4	239		Jun	1,886,000	679	5.7	46
	Jul	10,754,000	266	33.0	234		Jul	1,990,000	282	6.1	42
	Aug	9,481,000	684	29.1	231		Aug	1,689,000	684	5.2	41
	Sep	10,195,000	761	31.3	229		Sep	1,722,000	243	5.3	39
	Oct	9,845,000	709	30.2	231		Oct	453,000	222	1.4	38
	Nov	9,426,000	687	28.9	229		Nov	333,000	78	1.0	35
	Dec	8,530,000	634	26.4	226		Dec	2,254,000	455	6.9	82
IW-9 Total Gallons Pumped:						IW-4 Total Gallons Pumped:					
IW-9 Total Acre-Feet Pumped:						IW-4 Total Acre-Feet Pumped:					
IW-9 Average Yield Rate (gpm):						IW-4 Average Yield Rate (gpm):					
IW-9 % Run Time:						IW-4 % Run Time:					
IW-24	Jan	4,887,000	772	15.0	106	IW-5A	Jan	4,243,000	775	13.0	91
	Feb	3,813,000	629	11.7	101		Feb	3,578,000	645	13.0	92
	Mar	4,021,000	719	12.3	95		Mar	3,982,000	715	12.2	93
	Apr	3,726,000	657	9.9	92		Apr	3,908,000	752	12.0	89
	May	3,159,000	677	9.7	78		May	3,153,000	673	9.7	78
	Jun	2,994,000	688	9.2	73		Jun	2,829,000	684	8.7	68
	Jul	2,844,000	771	8.7	61		Jul	2,745,000	783	8.8	60
	Aug	2,715,000	681	6.9	55		Aug	2,235,000	684	6.9	54
	Sep	2,578,000	762	7.3	53		Sep	2,197,000	715	6.7	51
	Oct	2,321,000	732	7.1	52		Oct	2,060,000	718	6.5	48
	Nov	2,242,000	704	6.9	53		Nov	2,014,000	708	6.2	47
	Dec	2,330,000	737	7.3	52		Dec	1,971,000	737	6.0	45
IW-24 Total Gallons Pumped:						IW-5A Total Gallons Pumped:					
IW-24 Total Acre-Feet Pumped:						IW-5A Total Acre-Feet Pumped:					
IW-24 Average Yield Rate (gpm):						IW-5A Average Yield Rate (gpm):					
IW-24 % Run Time:						IW-5A % Run Time:					

**BasinWells Associates PLLC**

**ATTACHMENT A.**  
**SUMMARY OF 2012 INTERCEPTOR WELL PERFORMANCE**  
**FREEPORT MCMORAN SIERRITA, INC.**

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)	Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-23	Jan	7,032,000	750	21.6	156	IW-10	Jan	15,783,000	770	48.4	342
	Feb	6,085,000	635	18.7	160		Feb	15,485,000	651	41.4	345
	Mar	6,598,000	720	20.6	155		Mar	24,579,000	713	44.7	341
	Apr	6,139,000	688	18.8	149		Apr	14,699,000	731	45.1	335
	May	4,944,000	565	15.2	146		May	12,828,000	668	39.4	320
	Jun	5,013,000	592	15.4	141		Jun	13,164,000	702	40.4	313
	Jul	5,192,000	630	15.9	137		Jul	14,490,000	745	44.5	328
	Aug	5,437,000	685	16.7	135		Aug	12,719,000	685	39.0	309
	Sep	5,645,000	762	17.3	127		Sep	13,653,000	742	41.9	307
	Oct	7,450,000	717	23.0	174		Oct	12,159,000	673	37.3	301
	Nov	5,231,000	541	16.1	163		Nov	9,431,000	530	28.9	297
	Dec	5,171,000	478	15.9	180		Dec	13,043,000	715	40.0	304
IW-23 Total Gallons Pumped:				30,077,000		IW-10 Total Gallons Pumped:				160,054,000	
IW-23 Total Acre-Feet Pumped:				215		IW-10 Total Acre-Feet Pumped:				493	
IW-23 Average Yield Rate (gpm):				151		IW-10 Average Yield Rate (gpm):				320	
IW-23 % Run Time:				88.9%		IW-10 % Run Time:				95.0%	
IW-22	Jan	9,601,000	655	29.5	245	IW-11	Jan	19,507,000	773	59.9	423
	Feb	476,000	44	1.5	180		Feb	16,648,000	652	51.1	426
	Mar	12,826,000	548	39.4	390		Mar	28,004,000	713	55.2	420
	Apr	16,609,000	734	50.9	377		Apr	17,940,000	731	55.1	409
	May	16,485,000	654	45.4	369		May	16,058,000	676	49.4	400
	Jun	15,070,000	682	46.2	368		Jun	16,167,000	677	49.6	398
	Jul	16,406,000	756	50.3	362		Jul	17,829,000	766	54.9	389
	Aug	14,542,000	679	44.6	357		Aug	15,698,000	682	48.2	384
	Sep	15,705,000	762	48.2	355		Sep	16,866,000	738	51.8	381
	Oct	15,410,000	733	47.3	350		Oct	16,164,000	717	49.6	376
	Nov	14,718,000	711	45.2	345		Nov	13,893,000	711	48.5	370
	Dec	14,950,000	738	45.8	337		Dec	16,115,000	738	49.5	363
IW-22 Total Gallons Pumped:				180,789,000		IW-11 Total Gallons Pumped:				202,889,000	
IW-22 Total Acre-Feet Pumped:				493		IW-11 Total Acre-Feet Pumped:				623	
IW-22 Average Yield Rate (gpm):				348		IW-11 Average Yield Rate (gpm):				395	
IW-22 % Run Time:				87.0%		IW-11 % Run Time:				97.0%	
IW-6A	Jan	3,741,000	662	11.5	94	IW-12	Jan	5,955,000	755	18.3	131
	Feb	3,229,000	570	9.9	94		Feb	4,861,000	621	14.9	130
	Mar	454,000	80	1.4	95		Mar	4,900,000	752	15.1	112
	Apr	2,774,000	451	8.5	105		Apr	980,000	309	3.0	53
	May	4,104,000	676	12.6	101		May	3,602,000	478	13.1	126
	Jun	3,779,000	633	11.6	99		Jun	5,834,000	682	16.7	133
	Jul	4,484,000	766	13.8	98		Jul	7,316,000	763	21.5	153
	Aug	3,912,000	682	12.0	96		Aug	6,205,000	684	19.0	151
	Sep	4,155,000	742	12.7	99		Sep	6,670,000	743	20.5	150
	Oct	3,932,000	715	12.0	91		Oct	6,400,000	717	19.6	149
	Nov	3,792,000	710	11.6	89		Nov	6,295,000	710	19.3	148
	Dec	3,802,000	731	11.7	87		Dec	6,471,000	738	19.9	146
IW-6A Total Gallons Pumped:				42,156,000		IW-12 Total Gallons Pumped:				64,798,000	
IW-6A Total Acre-Feet Pumped:				129		IW-12 Total Acre-Feet Pumped:				209	
IW-6A Average Yield Rate (gpm):				95		IW-12 Average Yield Rate (gpm):				138	
IW-6A % Run Time:				90.7%		IW-12 % Run Time:				90.0%	
IW-13	Jan	3,077,000	759	3.3	34	IW-14	Jan	602,000	401	1.8	25
	Feb	958,000	670	2.9	24		Feb	2,508,000	491	7.7	85
	Mar	1,041,000	737	3.2	28		Mar	3,641,000	736	13.2	82
	Apr	1,034,000	740	3.2	25		Apr	3,552,000	719	10.9	82
	May	936,000	675	2.5	25		May	3,373,000	677	10.3	83
	Jun	954,000	677	3.0	24		Jun	3,258,000	584	10.0	93
	Jul	1,104,000	766	3.4	24		Jul	3,703,000	846	11.4	73
	Aug	982,000	688	3.0	24		Aug	3,283,000	688	10.1	80
	Sep	1,053,000	762	3.2	24		Sep	3,454,000	742	10.6	78
	Oct	1,015,000	735	3.1	23		Oct	3,198,000	691	9.8	77
	Nov	962,000	711	3.0	23		Nov	2,918,000	638	9.0	76
	Dec	1,004,000	738	3.1	23		Dec	2,596,000	566	8.0	76
IW-13 Total Gallons Pumped:				12,136,000		IW-14 Total Gallons Pumped:				36,096,000	
IW-13 Total Acre-Feet Pumped:				37		IW-14 Total Acre-Feet Pumped:				213	
IW-13 Average Yield Rate (gpm):				23		IW-14 Average Yield Rate (gpm):				77	
IW-13 % Run Time:				98.0%		IW-14 % Run Time:				98.0%	

**BasinWells Associates PLLC**

**ATTACHMENT A.**  
**SUMMARY OF 2012 INTERCEPTOR WELL PERFORMANCE**  
**FREEPORT MCMORAN SIERRITA, INC.**

Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)	Well	Month	Gallons Pumped	Hours	Yield (Acrefeet)	Ave. Yield Rate (gpm)
IW-15	Jan	2,183,300	754	6.7	46	IW-19	Jan	7,303,940	779	22.4	256
Feb	1,928,800	665	5.9	48	Feb	6,357,650	670	19.5	158		
Mar	2,083,000	724	6.4	48	Mar	6,901,950	731	21.2	157		
Apr	2,161,900	780	6.6	49	Apr	6,778,910	753	20.8	154		
May	1,777,300	653	5.5	45	May	6,163,310	678	18.9	152		
Jun	1,936,300	679	5.9	48	Jun	6,113,360	676	18.8	151		
Jul	2,232,100	765	6.8	49	Jul	6,986,130	766	21.2	150		
Aug	2,005,900	688	6.2	49	Aug	6,077,040	679	18.6	149		
Sep	2,129,300	783	6.5	48	Sep	6,546,440	782	20.1	147		
Oct	2,069,000	735	6.3	47	Oct	6,520,520	735	20.0	148		
Nov	1,986,300	711	6.3	47	Nov	6,270,000	709	19.2	147		
Dec	2,050,300	734	6.3	47	Dec	6,403,000	733	19.6	145		
IW-15 Total Gallons Pumped:						IW-19 Total Gallons Pumped:					
IW-15 Total Acre-Feet Pumped:						IW-19 Total Acre-Feet Pumped:					
IW-15 Average Yield Rate (gpm):						IW-19 Average Yield Rate (gpm):					
IW-15% Run Time:						IW-19% Run Time:					
IW-20 Total Gallons Pumped:						IW-21 Total Gallons Pumped:					
IW-20 Total Acre-Feet Pumped:						IW-21 Total Acre-Feet Pumped:					
IW-20 Average Yield Rate (gpm):						IW-21 Average Yield Rate (gpm):					
IW-20% Run Time:						IW-21% Run Time:					
IW-25 Total Gallons Pumped:						IW-26 Total Gallons Pumped:					
IW-25 Total Acre-Feet Pumped:						IW-26 Total Acre-Feet Pumped:					
IW-25 Average Yield Rate (gpm):						IW-26 Average Yield Rate (gpm):					
IW-25% Run Time:						IW-26% Run Time:					
IW-27 Total Gallons Pumped:						IW-28 Total Gallons Pumped:					
IW-27 Total Acre-Feet Pumped:						IW-28 Total Acre-Feet Pumped:					
IW-27 Average Yield Rate (gpm):						IW-28 Average Yield Rate (gpm):					
IW-27% Run Time:						IW-28% Run Time:					

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ATTACHMENT B

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**SIERRITA INTERCEPTOR WELL FIELD DATA PLOTS**

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13

