

Freeport-McMoRan Sierrita Inc.
6200 W. Duval Mine Rd.
PO Box 527
Green Valley, Arizona 85622-0527

December 23, 2008

Via Certified Mail #7007 3020 0001 8578 1951
Return Receipt Requested

Ms. Cynthia S. Campbell
Manager, Water Quality Compliance Section
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007-2935

Re: Mitigation Order on Consent No. P-50-06
Recommended Groundwater Monitoring for Sulfate

Dear Ms. Campbell:

Quarterly groundwater monitoring pursuant to Mitigation Order on Consent No. P-50-06 has been conducted since the fourth quarter of 2006 according to the specifications of the Work Plan¹. The purpose of the groundwater monitoring was to document sulfate concentrations and water levels for determining the lateral and vertical extent of the sulfate plume and providing data for development of conceptual and numerical models of the sulfate plume. Submittal of the Aquifer Characterization² and Feasibility Study³ reports has fulfilled the objectives of monitoring recommended by the Work Plan. As we discussed at our meeting on November 20, 2008, Freeport-McMoRan Sierrita Inc. (Sierrita) recommends revising the groundwater monitoring program to match the current project status.

Specifically, the objectives of groundwater monitoring should be differentiated based on the startup of the additional mitigation actions recommended in the Feasibility Study. It will take at least two years to implement the additional mitigation actions. The objectives of groundwater monitoring prior to startup of the mitigation should be to track the location of the plume edge and monitor drinking water supply wells near the plume. The objectives of groundwater monitoring after startup of the mitigation would be the same as before the startup, but would also include monitoring the attenuation of the plume and monitoring at the mitigation extraction wells to determine their performance.

The vertical and horizontal delineation of the sulfate plume is complete with respect to the objectives of plume characterization with the exception of the southeastern plume boundary in the

¹ Hydro Geo Chem, Inc. 2006. Work Plan to Characterize and Mitigation Sulfate in Drinking Water Supplies in the Vicinity of the Phelps Dodge Sierrita Tailing Impoundment, Pima County, Arizona. August 11, 2006. Revised December 20, 2006.

² Hydro Geo Chem, Inc. 2007. Aquifer Characterization Report, Task 5 of Aquifer Characterization Plan, Mitigation Order on Consent Docket No. P-50-06, Pima County, Arizona. December 28, 2007.

³ Hydro Geo Chem, Inc. 2008. Feasibility Study for Mitigation of Sulfate in the Vicinity of the Freeport-McMoRan Sierrita Inc. Tailing Impoundment, Mitigation Order on Consent Docket No. P-50-06. October 22, 2008.

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vicinity of MO-2007-5. Sierrita is proceeding with plans to install well MO-2009-1 near Community Water Company well CW-10 to complete the plume characterization (Figure 1). Furthermore, the groundwater monitoring data collected during the previous nine (9) quarters are representative of current conditions in the vicinity of the sulfate plume and trends in sulfate concentrations have been stable or decreasing in approximately 80 percent of the wells evaluated.

The following groundwater monitoring is recommended for the period prior to the implementation of the additional mitigation actions. The monitoring should be implemented by January 1, 2009 using the same quality assurance and quality control procedures identified in the Work Plan.

- Collect filtered groundwater samples semiannually during the first and third quarters from the twenty-nine (29) monitor wells listed in Table 1.
- Measure water levels annually during the third quarter at the sixty (60) monitor wells listed in Table 1.
- Analyze filtered groundwater samples for dissolved sulfate following U.S. Environmental Protection Agency (EPA) Method 300.0. (Please note that on January 31, 2008, Freeport submitted a letter⁴ to Arizona Department of Environmental Quality (ADEQ) requesting ADEQ limit monitoring to the use of filtered samples for determination of dissolved sulfate concentrations only. This request was made to eliminate the unnecessary monitoring of total sulfate concentrations because the results of prior monitoring indicated negligible difference between dissolved and total sulfate analytical results.)
- Submit groundwater monitoring reports to ADEQ on the last day of the month in April and October.

A groundwater monitoring plan will be included in the Mitigation Plan to be submitted within sixty (60) days of receiving ADEQ's written approval of the Feasibility Study. The pre-mitigation groundwater monitoring recommended in this letter will be incorporated into the Mitigation Plan along with specifications for post-startup monitoring when the additional mitigation actions commence. Sierrita will notify ADEQ if monitoring data indicates a change in the sulfate plume that would warrant modification of the recommended groundwater monitoring program.

If you have any questions regarding this request please call me at (520) 648-8857.

Sincerely,



E. L. (Ned) Hall
Chief Environmental Engineer

Attachments
20081223_001

⁴ Correspondence from E.L Hall, Sierrita, to Robert Casey, ADEQ, Regarding: Quarterly Groundwater Monitoring, Phelps Dodge Sierrita, Inc. – Mitigation Order on Consent, Docket No. P-50-06. January 31, 2008.

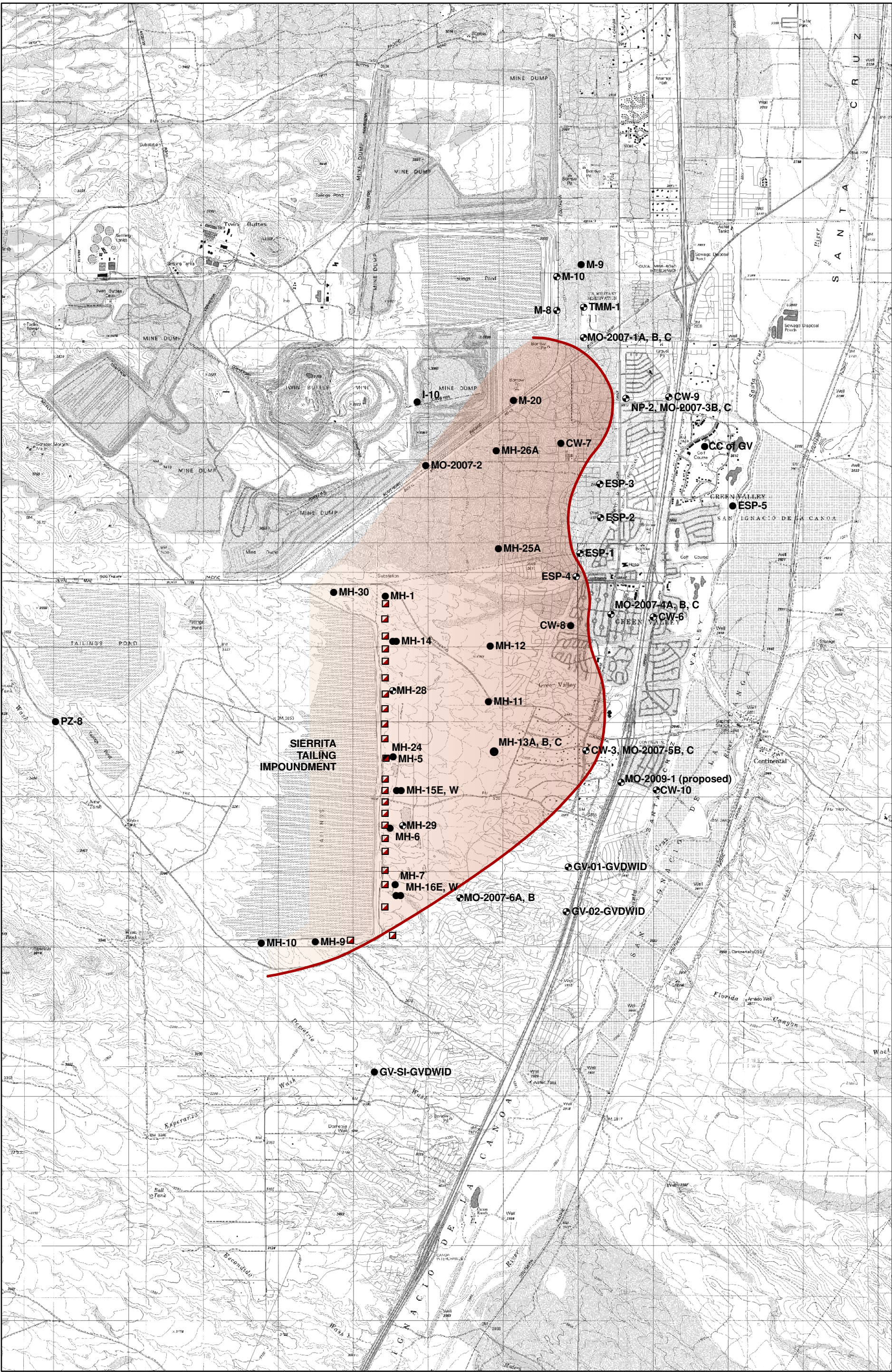


TABLE 1
Semiannual Groundwater Monitoring Program
Freeport-McMoRan Sierrita Inc.

Semiannual Sampling (1st and 3rd Quarters)		
Well Name	ADWR 55 Program No.	Owner
CW-3	627483	CWC
CW-6	627485	CWC
CW-9	588121	CWC
CW-10	207982	CWC
ESP-1	623102	Sierrita
ESP-2	623103	Sierrita
ESP-3	623104	Sierrita
ESP-4	623105	Sierrita
GV-01-GVDWID	603428	GVDWID
GV-02-GVDWID	603429	GVDWID
M-8	87390	TBPI
M-10	501653	TBPI
MH-28	903648	Sierrita
MH-29	903649	Sierrita
MO-2007-1A	907342	Sierrita
MO-2007-1B	907210	Sierrita
MO-2007-1C	907209	Sierrita
MO-2007-3B	906816	Sierrita
MO-2007-3C	906817	Sierrita
MO-2007-4A	907213	Sierrita
MO-2007-4B	907212	Sierrita
MO-2007-4C	907211	Sierrita
MO-2007-5B	907456	Sierrita
MO-2007-5C	907457	Sierrita
MO-2007-6A	907607	Sierrita
MO-2007-6B	907606	Sierrita
MO-2009-1	ND	Sierrita
NP-2	605898	CWC
TMM-1	616156	Pima County

Annual Water Level Measurements (3rd Quarter)		
Well Name	ADWR 55 Program No.	Owner
CC OF GV	501760	CC of GV
CW-3	627483	CWC
CW-6	627485	CWC
CW-7	502546	CWC
CW-8	543600	CWC
CW-9	588121	CWC
CW-10	207982	CWC
ESP-1	623102	Sierrita
ESP-2	623103	Sierrita
ESP-3	623104	Sierrita
ESP-4	623105	Sierrita
ESP-5	623106	Sierrita
GV-01-GVDWID	603428	GVDWID
GV-02-GVDWID	603429	GVDWID
GV-SI-GVDWID	208825	GVDWID
I-10	608525	TBPI
M-8	87390	TBPI
M-9	501652	TBPI
M-10	501653	TBPI
M-20	906595	TBPI
MH-1	803629	Sierrita
MH-3	803630	Sierrita
MH-5	803632	Sierrita
MH-6	803633	Sierrita
MH-7	803634	Sierrita
MH-9	803635	Sierrita
MH-10	803636	Sierrita
MH-11	803637	Sierrita
MH-12	803638	Sierrita
MH-13A	904071	Sierrita
MH-13B	904072	Sierrita
MH-13C	904073	Sierrita
MH-14	528098	Sierrita
MH-15E	528094	Sierrita
MH-15W	528093	Sierrita
MH-16E	528100	Sierrita
MH-16W	528099	Sierrita
MH-24	563799	Sierrita
MH-25A	201528	Sierrita
MH-26A	201527	Sierrita
MH-30	903884	Sierrita
MO-2007-1A	907342	Sierrita
MO-2007-1B	907210	Sierrita
MO-2007-1C	907209	Sierrita
MO-2007-2	906765	Sierrita
MO-2007-3B	906816	Sierrita
MO-2007-3C	906817	Sierrita
MO-2007-4A	907213	Sierrita
MO-2007-4B	907212	Sierrita
MO-2007-4C	907211	Sierrita
MO-2007-5B	907456	Sierrita
MO-2007-5C	907457	Sierrita
MO-2007-6A	907607	Sierrita
MO-2007-6B	907606	Sierrita
MO-2009-1	ND	Sierrita
NP-2	605898	CWC
PZ-8	561866	Sierrita
TMM-1	616156	Pima County

ADWR = Arizona Department of Water Resources
CC OF GV = Country Club of Green Valley
CWC = Community Water Company of Green Valley
GVDWID = Green Valley Domestic Water Improvement District
ND = No Data
Sierrita = Freeport-McMoRan Sierrita Inc.
TBPI = Twin Buttes Properties, Inc.