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

August 11, 2011

Via Certified Mail # 7008 2810 0000 0983 7021
Return Receipt Requested

Ms. Danielle Taber
Project Manager
Voluntary Remediation Program
Arizona Department of Environmental Quality
1110 W. Washington St.
Phoenix, AZ 85007

Re: Voluntary Remediation Program
Freeport-McMoRan Sierrita Inc,
Green Valley, AZ VRP Site Code: 100073-03

Dear Ms. Taber:

In response to your July 20, 2011 electronic mail and questions raised during your June 29, 2011 visit to Freeport-McMoRan Sierrita Inc., I have summarized the action items discussed during the site visit and provided Sierrita's responses.

Action Items:

1) Provide communication with ADEQ regarding Work Plan approval that allowed field work to be conducted prior to the official Work Plan approval dated November 26, 2008.

   Sierrita's response: An e-mail from Ms. Joey Pace to Mr. Ned Hall dated May 28, 2008 (Attachment A) documents the partial approval of the Work Plan for specific areas ahead of any sampling at locations in the Demetrie Wash Area, with the exception of the "Old D Pond". Sierrita initiated sampling in early July 2008 in those areas addressed in Ms. Pace's email. A subsequent letter from Ms. Joey Pace dated July 14, 2008 (Attachment B) approved the Work Plan as submitted, with the exception of the "Old D Pond". Approval for this area was deferred until Sierrita's APP was amended to revise the nomenclature where the "Old E Pond" was mistakenly referenced to as the "Old D Pond".

2) Provide communication with ADEQ regarding Work Plan changes.

   Sierrita's response: As is discussed in Section 2.6 of the Soil and Sediment Characterization Report, the only Work Plan deviation that resulted in the collection of fewer samples was due to the fact that bedrock was encountered at much shallower depths than originally expected at most of sampling locations. This Work Plan change occurred because the depth to bedrock, which could only be estimated at the time the Work Plan was prepared, controlled the number of soil samples that could be collected.

   With respect to Work Plan changes that lead to the collection of more samples, the Work Plan was intentionally structured to include the flexibility of adding soil and bore hole sampling locations that resulted from professional judgment based on field observations. Soil samples were obtained at

locations in several subareas to ensure sufficient soil characterization, and temporary wells were added to characterize alluvial groundwater. Professional judgment was also used in adding the Laydown Yard as a subarea for additional investigation. This subarea was identified after the Work Plan was finalized and added while the sampling team was in the field. Because of the flexibility built into the ADEQ-approved Work Plan, Sierrita did not seek advance approval regarding the collection of additional samples.

3) Information regarding whether the laboratory used was certified for the analysis of uranium.

Sierrita's response: During our meeting you questioned whether ACZ Laboratories was certified for the analysis of uranium. Uranium in groundwater has no EPA approved method under 40 CFR Part 136 so ACZ could not be (and isn't) certified by Arizona Department of Health Services (ADHS) to analyze uranium in water. However, it is standard practice to use EPA Method 200.8 (based on Clean Water Act methods under 40 CFR Part 136 for other dissolved metals) for uranium analysis in water samples. EPA Method 6020 is commonly used for soil samples and is based on EPA Publication SW-846 as referenced under RCRA. EPA Method 6020 was used to analyze all of the samples documented in the Soil and Sediment Characterization Report and ACZ is certified for this method as well as EPA Method 200.8.

4) Information regarding whether the laboratory used was certified for the analysis of uranium and radium isotopes.

Sierrita's response: ADHS offers certification for Alpha Emitting Radium Isotopes and Radium 228 in soil under EPA Methods 9315 and 9320 respectively; ALS Laboratories has these certifications. The Soil and Sediment Characterization Report does not address groundwater. However, under ADHS, ALS Laboratories is also certified for the analysis of Total Radium and Radium 226 in water using EPA Methods 903.0 and 903.1, respectively. ADSH does not offer certification for uranium isotopes (234, 235, & 238) because there is no approved EPA method under 40 CFR Part 136.

5) Information regarding whether the laboratory used was certified for the analysis of hexavalent chromium.

Sierrita's response: Soil samples were analyzed for hexavalent chromium using EPA Method 7196A. The lab utilized was ACZ Laboratories, and is certified by the Arizona Department of Health Services (ADHS) for this method.

6) Sierrita proposal as to how to proceed with the information and recommendations presented in Section 4.0 of the VRP Soil and Sediment Characterization Report.

Sierrita's response: The intent of Section 4.0 is to provide an initial risk-based screening for the soil and sediment sampling results to evaluate whether a request to ADEQ for a No Further Action determination can be supported in certain subareas. As indicated in Section 4.0, further evaluation of the results through site-specific risk assessment is needed. Therefore, Sierrita proposes to defer any no further action determination request until a site-specific risk assessment has been completed in accordance with ADEQ guidance. Sierrita expects that the risk assessment will be based on a commercial/industrial use consistent with the current and likely future land use of the property.

7) Sierrita anticipated timeline for the groundwater report.

Sierrita's response: As we discussed during the site visit, Sierrita is reviewing the groundwater investigation results and evaluating its consultant support on this work. We expect to have a clearer understanding of how we plan to proceed and should be able to provide you with a specific timeline for the report by the end of October.

I hope we have addressed your action items. It is our understanding that ADEQ will provide written comments on the VRP Soil and Sediment Characterization Report now that we have provided a response to item 6 above. If you need additional information please do not hesitate to contact me at (520) 393-2696 or Mr. Stuart Brown at (602) 448-0972.

Sincerely,

Martha G. Mottley

Martha G. Mottley
Chief Environmental Engineer
Freeport-McMoRan Sierrita Inc.

MGM:ms
Attachments (2)

xc: Tom DiDomizio, Arizona Department of Environmental Quality
John Broderick, Sierrita
Lana Fretz, Sierrita
Suart Brown, Freeport-McMoRan Copper & Gold
Ned Hall, Freeport-McMoRan Copper & Gold

ATTACHMENT A

Mottley, Martha

From: Joey A. Pace [Pace.Joey@azdeq.gov]
Sent: Wednesday, May 28, 2008 6:33 AM
To: Hall, E. L. (Ned)
Cc: Fretz, Chad; Jennifer Barr
Subject: Partial Work Plan Approval and VRP Status Update

Ned – Per our conversation yesterday, the VRP hereby approves of the investigative proposals for the following Demetrie Wash locations, as requested in the April 2008 *FMI Sierrita Investigation Work Plan*:

1. "Former CLEAR Plant"
2. Former CLEAR Plant "Former Evaporation Pond"
3. Former CLEAR Plant "Former E Pond"
4. Former Esperanza Mill
5. "Former C Pond"
6. "Former Raffinate Pond"

As we discussed, the VRP cannot approve the investigation of the actual "Old D Pond" until an amendment is filed (and accepted) by the Aquifer Protection Program to revise the nomenclature in the current Permit, where the "Old E Pond" is mistakenly referenced as the "Old D Pond".

Additionally, as we discussed, you should expect two letters from ADEQ. The first will be comments and revisions for the QAPP and SAP. The second will be approval of the Work Plan. As you are aware, there are a few things that must be addressed before the VRP will approve the Work Plan. This includes an internal VRP discussion with the APP, and submittal of some additional information from FMI regarding the proposed Esperanza Tailings investigation.

Please feel free to contact me with any questions or comments. I look forward to continuing our work on this project.

Joey Pace, Project Manager/Hydrologist
Waste Programs Division, Remedial Projects Section
Voluntary Remediation Program Unit (VRPU)
Arizona Department of Environmental Quality
1110 West Washington Street, Mail Code 4415B-1
Phoenix, Arizona 85007
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ENVIRONMENTAL QUALITY

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Janet Napolitano
Governor

Stephen A. Owens
Director

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JUL 16 2008

July 14, 2008

VRP 09:009

Mr. Ned Hall
Chief Environmental Engineer
Freeport-McMoRan Sierrita Inc.
Environment, Land & Water Department
6200 West Duval Mine Road, PO Box 527
Green Valley, AZ 85622-0527

RE: Voluntary Remediation Program Investigation Work Plan
Freeport-McMoRan Sierrita Inc. Green Valley, Arizona
VRP Site Code: 100073-03

Dear Mr. Hall:

The Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP) has reviewed the *VRP Investigation Work Plan* (Work Plan), submitted by URS Corporation (URS) on behalf of Freeport-McMoRan Sierrita Inc (Sierrita), received by ADEQ on May 2, 2008. The VRP has issued, under separate cover, comments regarding the *Quality Assurance Project Plan* (submitted in Volume II as Appendix B of the Work Plan) and the *Sampling and Analysis Plan* (submitted in Volume I as Section 4.0 of the Work Plan). This letter pertains to all other sections of the Work Plan.

The VRP hereby approves the Work Plan as written, with the exception of proposed work at the "Old D Pond". As indicated by the VRP in a meeting held with Sierrita on May 27, 2008, the VRP cannot approve the proposed investigation of the "Old D Pond" until an amendment is filed with, and accepted by, the Aquifer Protection Permit (APP) Program to revise the nomenclature in the current APP, where the "Old E Pond" is mistakenly referenced as the "Old D Pond". Once the VRP is shown the amended APP, the Old D Pond will be accepted by the VRP as an approved area for investigation under the VRP.

The attached table lists the VRP-approved Areas of Interest and their target compounds. The table includes five main soil investigative areas (A - E) which are further broken down into subset areas. In addition, the table includes the site-wide groundwater investigation (F). Please feel free to use the alpha-numeric references from this table in future submittals to the VRP to reduce crowding of text on the figures and for ease of reference. If you have any questions regarding this letter, please do not hesitate to contact me by electronic mail at jp8@azdeq.gov or by telephone at (602) 771-4574.

Respectfully,

Joey Pace, Project Manager/Hydrologist
Voluntary Remediation Program

C: Richard Mendolia, ADEQ, WQD, GWS, APP & Drywell Unit

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
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ATTACHMENT B

Sierrita Mine Investigation Work Plan

Approved Areas of Interest

Freeport-McMoRan Sierrita Inc. Green Valley, Arizona
VRP Site Code: 100073-03

ADEQ Map Ref	Area of Interest	APP Regulated Facility? (Y or N)	Target Compounds	Former Use	Current Use	Goal in Work Plan	Notes
A	**DEMETRIE WASH**						
A1a	*Former CLEAR Plant* (including A1b & A1c)	N	metals	The copper leach electrowinning and regeneration plant operated 1977 through 1983;	The CLEAR Plant building remains but the process equipment is gone.	No Further Action Determination through VRP	
A1b	*Former Evaporation Pond*	N	metals	This pond received spent copper solution from CLEAR Plant.	Excavated soils removed, stockpiled, and later used to grade New D Pond.	No Further Action Determination through VRP	
A1c	*Former E Pond*	N	metals	This pond contained overflow from CLEAR Plant.	None	No Further Action Determination through VRP	
A2	*Old D Pond*	see notes	metals	This pond was located 1000' south of CLEAR Plant and used in 1990s. It was constructed in 1974. Pond misidentified in APP Permit.	None	No Further Action Determination through VRP	Sierrita must amend APP prior to investigation of this location commencing under the VRP. The APP lists Old D Pond to be closed. Permit will be revised to reflect Old E Pond.
A3	*Former Esperanza Mill*	N	metals	Mill processed sulfide ore. Area had mill, two thickeners, raw water pond. Mill operated 1959 through 1981.	None	No Further Action Determination through VRP	
A4	*Former C Pond*	N	metals	Pond received runoff from Sierrita crusher dust. Duval Canal Extension put pond out of use in 1994;	None	No Further Action Determination through VRP	Investigation will include C Spoils Area, the area which received sediments too think to be piped out;
A5	*Former Raffinate Pond*	N	metals	Received raffinate from Former Precipitate Plant but was replaced by APP permitted ponds elsewhere. This pond appears in 1979 aerials but is gone by 1994.	None	No Further Action Determination through VRP	
B	**AMARGOSA WASH**						
B1a	*Headwall No. 1*	Y	metals radionuclides	N/A	PLS collected at Headwall No. 1 is conveyed to SX Plant No. 2	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
B1b	*Bailey Lake*	Y	metals radionuclides	N/A	Contains overflow and subsurface flow from Headwall No. 1.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
B2	*Raffinate Pond No. 2*	Y	metals radionuclides	N/A	Temporarily stores copper-depleted leachate solution from SX Plants 1 & 2; raffinate gets recycled back to leach piles; constructed in 1983; it is double lined.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
B3	*Amargosa Pond*	Y	metals radionuclides	Previously served as old raffinate pond until 1993 and was upgraded and expanded in 1994.	A single-lined pond capable of containing 100-yr/ 24 hr storm event; Also provides containment for Headwall No. 1 upset conditions	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	Amargosa Pond was unlined prior to APP regulations.
B4	*Former A Pond*	Y	metals radionuclides	Pond built to retain overflow from Amargosa Pond during storm events; use ceased after 1995.	Amargosa Pond improvements made in 1995 led to Former A Pond falling into disuse. Closure is regulated under APP Permit.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	Former A Pond was closed under the APP. If impact is discovered, cleanup will be under the APP, but the investigation of potential releases will be overseen by the VRP.
B5	*Former B Pond*	Y	metals radionuclides	Pond constructed in 1960. Received overflow from Former A Pond.	None	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	Former B Pond has not yet closed under the APP. If impact is discovered, cleanup will be under the APP, but the investigation of potential releases will be overseen by the VRP.
B6	*Launders Facility*	Y	metals radionuclides	Pond constructed in 1958 and contained 22 bins filled with scrap iron. PLS was pumped into bins and copper precipitated onto iron. Use discontinued in 1987.	None	To investigate any potential releases through VRP in order to close (with APP) in advance of Final Mine Closure.	
C	**ESPERANZA WASH**						
C1	*Headwall No. 2*	Y	metals radionuclides	None listed; This impoundment may have been unlined historically.	Lined impoundment receives PLS from leach stockpiles. PLS from here is pumped to Raffinate Pond No. 3.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
C2	*Headwall No. 3*	Y	metals radionuclides	None listed; This impoundment may have been unlined historically.	Lined impoundment collects PLS from leach stockpiles in the former channel of Esperanza Wash; built in 1993;	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
C3	*Raffinate Pond No. 3*	Y	metals radionuclides	Originally designed to store raffinate; Pond constructed in 1993.	Pond receives solutions from Headwall No. 3 through concrete vault & pump system. PLS is also pumped from Headwall No. 5 to here.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	

Sierrita Mine Investigation Work Plan

Approved Areas of Interest

Freeport-McMoRan Sierrita Inc. Green Valley, Arizona
VRP Site Code: 100073-03

ADEQ Map Ref	Area of Interest	APP Regulated Facility? (Y or N)	Target Compounds	Former Use	Current Use	Goal in Work Plan	Notes
C4	*Headwall No. 4 (SX-3 Stormwater Pond)*	Y	metals radionuclides	Unlined pond originally used to contain potential overflows from Headwall No. 3 and Raffinate Pond No. 3.	Pond redesigned in 1994 as a single-lined stormwater reservoir. Sierrita intends to maintain this as a stormwater retention pond after APP closure.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
C5	*SX Plant No. 3*	Y	metals radionuclides	Plant constructed in 1994 to handle PLS from sulfide leach piles. The plant only operated for 30 days. The tank farm was exempt under 1999 Best Available Demonstrated Control Technology amendment to APP application.	Remaining plant equipment is used to gather PLS from leach stockpiles and transfer to SX Plant No. 2;	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
D	TINAJA AND UNNAMED WASH						
D1	*Headwall No. 5*	Y	metals radionuclides	Constructed in 1992 and originally planned to contain stormwater and redirect it for mine operations water.	Western portion of active sulfide leach pile drains into unnamed wash and then into Headwall No. 5 where the solutions are pumped into Headwall No. 3.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
E	TAILING IMPOUNDMENTS						
E1	*Esperanza Tailing Impoundment*	Y	metals radionuclides	Impoundment in use from 1959 through 1971; December 1971 - January 1973; Intermittently operated January 1979 - December 1981. Impoundment capped after closure in 1981;	In 1991-1992, tailings from Twin Buttes Mine deposited in west half of tailings impoundment. Currently the impoundment is used for tailing deposition on a limited basis during emergency clean-outs of Sierrita tailing slurry pipeline. Sierrita has stated that the Esperanza Impoundment does not receive wet tailings anymore.	To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
E2	*Rhenium Ponds*	Y	metals radionuclides	Constructed in 1981 and consisted of three cells excavated into Esperanza Tailings. The ponds were used for storage and for evaporation process solutions from Rhenium Plant.	Use discontinued in 1998; soils excavated from cells and placed in leach area and the ponds were backfilled and graded.	To investigate any potential releases through VRP in order to close (with APP) in advance of Final Mine Closure.	
E3	*Sierrita Tailing Impoundment*	Y	metals radionuclides	In operation since 1970;		To investigate potential historical release(s) to the environment. VRP will not issue NFA for this investigation.	
F	GROUNDWATER INVESTIGATION						
	Site-wide	N/A	*Soil:* Total Metals *Soil & Water:* U-234, U-235, and U-238 Anions pH Radium-226 Radium-228 *Water:* Dissolved Metals Gross Alpha & Beta	N/A	N/A	No Further Action Determination through VRP	Three aquifer layers: Alluvial, Basin Fill, and Bedrock; Multiple lithologic formations; Multiple scenarios for uranium source to be investigated;