



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Henry R. Darwin
Director

Via U.S. Mail and E-Mail

September 12, 2014
VRP 15-046

Mr. John Broderick
Freeport-McMoRan Inc. - Sierrita Operations
Post Office Box 527
Green Valley, Arizona 85622-0527

RE: Response to ADEQ Comments on Groundwater Investigation Report
Green Valley, Arizona
VRP Site Code: 100073-03

Dear Mr. Broderick:

The Arizona Department of Environmental Quality (ADEQ) Waste Program's Division Voluntary Remediation Program Unit (VRP) has reviewed the letter titled *Response to Comments, Voluntary Remediation Groundwater Investigation Report Freeport-McMoRan Sierrita Mine Green Valley, Arizona; Site Code: 100073-03* (Letter) dated May 23, 2014 and received by ADEQ on May 28, 2014. The letter was submitted by ARCADIS on behalf of Freeport McMoRan Copper & Gold (now Freeport-McMoRan Inc.) Sierrita Operations (Sierrita). The Letter was submitted in response to an ADEQ comment letter dated April 11, 2014.

General Comments

In the Letter, Sierrita requested that ADEQ approve the *Voluntary Remediation Groundwater Investigation Report* (Report) based on the premises that the work presented in the Report was conducted in accordance with the VRP Investigation Work Plan (Work Plan) and that Sierrita would fulfill obligations related to VRP's comments.

VRP concurs that the work presented in the Report was generally completed in accordance with the Work Plan and that deviations from the Work Plan were adequately documented. **Based upon this and Sierrita's commitment to address VRP's comments in a forthcoming Data Gaps Work Plan, VRP approves the Report.**

VRP concurs and approves Sierrita's responses to ADEQ's comments: 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15.

Southern Regional Office
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VRP would like to provide clarification to the following two comments:

Comment #1

VRP acknowledges that the groundwater investigation is in the preliminary stages of the investigation. However, remediation or action levels for groundwater and soil have been established for many of the potential contaminants of concern at the site. Analytical results of environmental media need to be compared to a baseline/standard in order to determine if there is an exceedance that needs to be addressed. Whether the comparison is to an accepted background concentration, a promulgated standard, or a guidance level, those levels should be identified.

Comment #3

VRP understands that the Soil and Sediment Characterization (SSCR) and Groundwater Investigation Reports were kept separate to facilitate the ease of data review. However, VRP's intent with this comment was to state that a brief summary of what was observed with the soil and/or sediment investigation may be useful in developing the overall Conceptual Site Model with respect to groundwater.

Specific Comments

Comment #4

VRP notes Sierrita's response, however, all data, whether pre-VRP or that collected through another environmental program, would assist VRP in evaluating and making a determination at the site and therefore should be submitted accordingly. VRP recommends including respective data in the forthcoming Data Gaps Work Plan.

Comment #12

In the Report, Table 17 identifies various features and their specific objective as identified in the Work Plan. VRP's intent with this comment was to request that information be included in the table to document whether Sierrita felt the "feature" had achieved the objective(s) or whether additional work may be needed. As mentioned in Sierrita's response to this comment, this information should be included in the forthcoming Data Gaps Work Plan.

Comment #16

VRP's April 11, 2014 letter requested additional information that clearly and decisively proves whether the wells that Sierrita has deemed representative of background are correct for that purpose. VRP acknowledges Sierrita's statement that the locations of the background wells were selected and approved in the Work Plan; however, based upon the information presented to date, the wells appear to not have been placed in the best locations for establishing background levels. VRP has concerns with the following factors (this list is not all inclusive):

- ♦ Proximity to natural drainages that historically may have been impacted by non-stormwater discharges;
- ♦ Proximity to current and historical mining and/or production operations;

- ♦ Proximity to disturbed areas, waste rock piles, and active leaching facilities; and
- ♦ An inconsistent data set of water levels, water quality parameters, geological cross-sections, and other various data gaps.

VRP does not agree that Sierrita has clearly and decisively illustrated that these wells are truly representative of background groundwater quality. As such, VRP cannot make a determination on this subject at this time. However, VRP does concur with the approach that Sierrita has proposed to address VRP's comments through the forthcoming Data Gaps Work Plan. VRP is willing to discuss this topic in further detail and in collaboration Sierrita and their consultant(s).

Recommendations

VRP recommends that Sierrita submit their proposed Data Gaps Work Plan within 60 calendar days from the date of this letter. VRP also recommends that Sierrita prepare the Data Gaps Work Plan in accordance with Arizona Revised Statutes (A.R.S.) § 49-175 and have it submitted for review and approval by VRP under the authority of A.R.S. § 49-177. Work Plan requirements for which Sierrita would like to request a waiver for should be submitted in writing prior to the submittal of the draft Data Gaps Work Plan.

Attached to this letter is a VRP Work Plan Checklist that has been provided for Sierrita's use to assist in complying with A.R.S. § 49-175. Please note that the use of the check list is optional.

How to Submit

Please submit documents sent in response to this letter using one of the following methods:

1. Hard copy to:

ADEQ

Attention: Danielle Taber, Voluntary Remediation Program

1110 W. Washington Street

Phoenix, AZ 85007

2. E-mail to dt3@azdeq.gov

In general, VRP requests two hard copies and one electronic copy (.pdf) of submitted documents.

Additional Information

The VRP site name and site code should be consistently used on all correspondence and reports relating to this site to ensure accuracy of file identification.

Information pertaining to the Voluntary Remediation Program can be obtained by accessing ADEQ's web page at www.azdeq.gov, or by visiting ADEQ's office at 1110 W. Washington Street, Phoenix, Arizona. Information pertaining to A.R.S. Title 49 can be obtained by accessing the Arizona State Legislature web page at www.azleg.gov. Information pertaining to Arizona Administrative Code rule citations may be found at www.azsos.gov.

You may contact the ADEQ Records Management Center staff about reviewing or copying file information at 602-771-4380.

Mr. John Broderick
September 12, 2014
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VRP appreciates Sierrita's continued efforts in characterizing this site. If you have any questions, please contact me by electronic mail at dt3@azdeq.gov or by telephone at (602) 771-4414.

Sincerely,



Danielle Taber, Project Manager
Voluntary Remediation Program, Waste Programs Division

enc: Voluntary Remediation Program Work Plan Checklist

cc: Stuart Brown, FMI, Senior Director – Remediation Projects
Deborah Chismar, FMI – Sierrita Operations, Senior Environmental Specialist
Katy Brantingham, ARCADIS, Project Manager
John Patricki, ADEQ
Jerry Smit, ADEQ
Mindi Cross, ADEQ

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: _____ VRP Site Code: _____

Volunteer/Applicant Name: _____

Volunteer/Applicant Email Address and Phone: _____

Authorized Agent (AA)/Consulting Company: _____

AA/Consultant Email Address and Phone: _____

Reference	Summary of Statutory Requirement <small>(please review all statutes in their entirety to ensure compliance)</small>	Page(s) Where Addressed in Work Plan <small>(write N/A if not applicable)</small>	VRP Use Only
<u>§49-175A.1</u>	Summary of existing site characterization and assessment information; information regarding any remediation previously conducted; copies of referenced reports not previously submitted;	_____	<input type="checkbox"/>
<u>§49-175A.2</u>	If the site has not been characterized, a plan to conduct site characterization and a schedule for completion.	_____	<input type="checkbox"/>
<u>§49-175A.3.a</u>	If site characterization is completed, a description of how the remediation will comply with <u>§49-175B</u> ("Work Plans") and how the completion of remediation will be verified. A schedule for completion must be included.	_____	<input type="checkbox"/>
<u>§49-175A.3.b</u>	If site characterization is completed, the work plan may provide for the remediation to be conducted in phases or tasks. A schedule for completion must be included.	_____	<input type="checkbox"/>
<u>§49-175A.4</u>	Schedule for submission of progress reports.	_____	<input type="checkbox"/>
<u>§49-175A.5</u>	A proposal for community involvement as prescribed by <u>§49-176</u> ("Community Involvement Requirements")	_____	<input type="checkbox"/>
<u>§49-175A.6</u>	If known, a list of institutional or engineering controls necessary during remediation and after completion of the proposed remediation to control exposure to contaminants.	_____	<input type="checkbox"/>
<u>§49-175A.7</u>	A proposal for monitoring during remediation and after the remediation if necessary to verify whether the approved remediation levels or controls have been attained and will be maintained.	_____	<input type="checkbox"/>
<u>§49-175A.8</u>	A list of any permits or legal requirements known to apply to the work or already performed by the applicant.	_____	<input type="checkbox"/>
<u>§49-175A.9</u>	If requested by the department, information regarding the financial capability of the applicant to conduct the work identified in the application. <i>(IF APPLICABLE)</i>	_____	<input type="checkbox"/>

Voluntary Remediation Program Work Plan Checklist
Complete Shaded Areas and Submit with Work Plan

Site Name: _____ VRP Site Code: _____

Reference	Summary of Statutory Requirement	Page(s) Where Addressed in Work Plan	VRP Use Only
	<small>(please review all statutes in their entirety to ensure compliance)</small>	<small>(write N/A if not applicable)</small>	
§49-175B	Remediation levels or controls for remediation conducted pursuant to this article shall be established in accordance with rules adopted pursuant to <u>§49-282.06</u> unless one or more of the following applies: see §49-175B.1 through §49-175B.4, below.	_____	<input type="checkbox"/>
§49-175B.1	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of contaminated soil comply with <u>§49-152</u> and the rules adopted.	_____	<input type="checkbox"/>
§49-175B.2	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of landfills or other facilities that contain materials that are not subject to <u>§49-152</u> (i.e.: asbestos) do not exceed a cumulative excess lifetime cancer risk between 1×10^{-4} to 1×10^{-6} , and a hazard index of no greater than 1.	_____	<input type="checkbox"/>
§49-175B.3	The applicant demonstrates that on achieving remediation levels or controls for a source or potential source of contamination to a navigable water, the source of contamination will not cause or contribute to an exceedance of surface water quality standards, or if a permit is required pursuant to <u>33 United States Code §1342</u> for any discharge from the source, that any discharges from the source will comply with the permit.	_____	<input type="checkbox"/>
§49-175B.4	The applicant demonstrates that, on achieving remediation levels or controls for a source of contamination to an aquifer, the source will not cause or contribute to an exceedance of aquifer water quality standards (AWQS) beyond the boundary of the facility where the source is located.	_____	<input type="checkbox"/>
§49-175C	The VRP may waive any work plan requirement under this section that it determines to be unnecessary to make any of the determinations required under <u>§49-177</u> . <i>If any waivers are requested in the Work Plan or have been previously requested and approved by the VRP, cite them in the Work Plan, including a citation of the statute for which the waiver applies.</i>	_____	<input type="checkbox"/>

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: _____ VRP Site Code: _____

To support the prerequisites established by A.R.S. §49-177 and §49-180, the VRP expects certain documentation to accompany a Work Plan. The following provides a list of attachments/exhibits which are recommended for submittal with a Work Plan to provide the information required by the statutes.

Work Plan Information	Title of Figure/Table/Attachment/Exhibit Where Requested Information is Cited <small>(write N/A if not applicable)</small>	Figure/Table/ Attachment or Report Page Number <small>(write N/A if not applicable)</small>	VRP Use Only
Site Location Map <i>(topographic or aerial)</i>	_____	_____	<input type="checkbox"/>
Site Map <i>(to scale)</i>	_____	_____	<input type="checkbox"/>
Historical Sampling Data Table	_____	_____	<input type="checkbox"/>
Historical Sample Location Map <i>(to scale)</i>	_____	_____	<input type="checkbox"/>
Proposed Sample Location Map <i>(to scale)</i>	_____	_____	<input type="checkbox"/>
Sampling and Analysis Plan <i>(includes Field Sampling Plan & Quality Assurance Plan)</i>	_____	_____	<input type="checkbox"/>
Proposed Remediation System Location Map	_____	_____	<input type="checkbox"/>
Proposed Remediation System Layout <i>(Design Drawings)</i>	_____	_____	<input type="checkbox"/>
Schedule for Implementation of Project Activities* <i>(Gantt Style Chart)</i>	_____	_____	<input type="checkbox"/>
<small>*Project Activities are defined in A.R.S. §§49-175A.2 through 49-175A.4, and 49-176A.2 (Community Involvement).</small>			
Proposed Language for Public Notification of Remediation <i>(i.e.: example signage)</i>	_____	_____	<input type="checkbox"/>
Plan for Investigative Derived Waste (IDW)	_____	_____	<input type="checkbox"/>
Evaluation of Remedial Alternatives <i>(i.e. for Feasibility Study Work Plan)</i>	_____	_____	<input type="checkbox"/>

DOES THE WORK PLAN PROPOSE IMPLEMENTING SITE-SPECIFIC REMEDIATION LEVELS?

Yes No

DOES THE WORK PLAN PROPOSE EVALUATION OF BACKGROUND LEVELS?

Yes No

NOTE: When reports are submitted which document any type of sampling activity, the submittal of Electronic Data per ADEQ's [Groundwater Data Submittal Guidance \(V3.4\)](#) is strongly recommended.