



**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-0424
www.env.nm.gov

**MICHELLE LUJAN
GRISHAM**
Governor

HOWIE MORALES
Lt. Governor

20190111-007

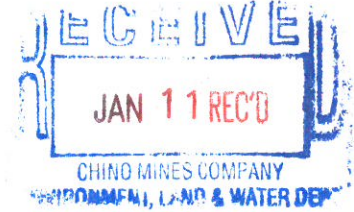


JAMES KENNEY
Cabinet Secretary - Designate

TBA
Deputy Secretary - Designate

January 8, 2019

Ms. Sherry Burt-Kested, Manager
Environment Services
Freeport-McMoRan Chino Mines Company
P.O. Box 10
Bayard, New Mexico 88023



RE: Response to Year 5 Monitoring Report for Smelter/Tailings Soils Investigation (STSIU) Unit (S/TSIU) Amendment Study Plots, dated November 2017, Chino Administrative Order on Consent

Dear Ms. Burt-Kested:

The New Mexico Environment Department (NMED) has reviewed the subject report dated November 2017. The cover letter and report were dated December 5, 2017. As you may recall, this report has considerable overlap with and is related to the delayed White Rain Study. In January 2018, it was decided to delay the White Rain Study and to use it as an attachment for consideration during the Feasibility Study (FS) process. It is our understanding that due to similar differences of view over many technical details of the two documents, FMI wishes to use this document as an attachment to the FS as well. Therefore, review of this document was delayed to some extent with regards to timing and how to utilize the information gathered during the amendment study in the FS process. Our main concerns are with the conclusions of the report and how to best utilize the data going forward.

While we generally agree with the conclusions that pH adjustment and decompaction of the soils appear to be the most effective remedial techniques for increasing the habitat quality of site-impacted vegetation, few if any quantitative conclusions can be made from the studies. This is primarily due to the initial sampling design which makes comparison of effects from the remediation techniques nearly impossible to compare between sites. In addition, the confounding effects of the January 2008 white rain event including the unknown long-term effects of the event, the lack of collocated data for sampling media at all sites pre- and post-treatment, and the assumptions regarding soil disturbance from anecdotal areas outside of the study plots further complicate the analyses in the report and increase the uncertainty in the conclusions that can be reached with confidence from those analyses.

The data included in the study should be used in evaluating remedial technologies, but it is our opinion that the results of this study should be used only as part of the remedial decision-making process in the Feasibility Study. As such, the data from this study must be supported by the more robust data from the Phytotoxicity Study and from other sources. Although the amendment study conclusions indicate that pH adjustment and soil decompaction should only be used in a narrow range of site conditions, the decision to not consider or use the individual or combined technologies discussed in the report is not adequately supported by the results of this study for areas of the site outside of those for which the conclusions recommended their use.

We recommend that the adjustment of soil pH, soil decompaction and possibly soil removal should be evaluated on a location-by-location basis in the FS for areas with cupric ion activity (pCu^{2+}) lower than the pre-FS Remedial Action Criteria (pre-FS RAC) Probably Effects Level (PEL = 5 or lower where total copper in soil > 327 mg/kg) and/or where total copper in soils is greater than 1,600 mg/kg. Consideration of the existing vegetation community quality should be considered along with the total copper and pH in the soils in making feasibility study decisions. The soil type, slope, and overall short- and long-term benefit of any remedial action to the vegetation community and the wildlife habitat it provides should be considered for each location.

We remain concerned with the unsupported conclusions in the amendment plot study due to all the uncertainty and confounding circumstances. However, we believe the amendment plot study led to our further understanding of what may be utilized as a remedy to reduce high copper or low pH conditions. This study along with the phytotoxicity study should help in the decision making for the FS and Record of Decision for the STSIU.

If you have any questions, please contact me at (575) 956-1550.

Sincerely,



David Mercer, Chino AOC Project Manager
Mining Environmental Compliance Section
Ground Water Quality Bureau
New Mexico Environment Department
Silver City Field Office

DWM: dwm

cc:

Kurt Vollbrecht, NMED (via email)
Joseph Fox, NMED (via email)
Petra Sanchez, USEPA (via email)
Alicia Voss, Freeport-McMoRan Inc. (via email)
Pam Pinson, Freeport-McMoRan Chino Mines Company (via email)
Mark Lewis, Formation, Inc. (via email)
Joe Allen, Formation, Inc. (via email)