

Freeport-McMoRan Chino Mines Company
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Certified Mail #7017100000085316481
Return Receipt Requested

Mr. Bruce Yurdin, Director
New Mexico Environment Department
Water Protection Division
P.O. Box 5469
Santa Fe, New Mexico 87502

Dear Mr. Yurdin:

Re: Freeport-McMoRan Chino Mines Company
AOC Quarterly Report, Fourth Quarter 2017

This Administrative Order on Consent (AOC) Quarterly Report documents activities performed during the reporting period from October 1 through December 31, 2017. The report is submitted and organized as outlined in Article IX, Section E of the AOC between the New Mexico Environment Department (NMED) and Freeport-McMoRan Chino Mines Company (Chino). Chino also submits a copy of this report to the New Mexico Energy, Mineral and Natural Resources Department, Mining and Minerals Division (MMD), per its request.

AOC Activities

During the fourth quarter of 2017, the following major activities occurred:

- Chino submitted the *Year 5 Monitoring Report for Smelter/Tailing Soils Investigation Unit (STS IU) Amendment Study Plots*, which combines the October 2013 vegetation survey completing the five year review requirement and the annual soil sampling results.
- The Community Work Group (CWG) participated in their annual AOC site tour on October 7th.
- Chino sampled soils for three residential sites within the Hurley Soils Investigation Unit.
- Chino submitted the Annual IRA Groundhog Mine Site Monitoring Report for the Hanover Whitewater Creeks Investigation Unit (HWC IU).
- Chino and NMED with their consultants participated in a conference call to discuss the Groundhog No. 5 Stockpile geochemical evaluation report on November 8th.
- Chino performed quarterly post-remediation monitoring of the Razorback Ridge Interim Remedial Action site under the STS IU.
- Chino performed quarterly post-reclamation and remedial monitoring of the Groundhog Mine Site and the Historic Small Stockpile sites under the HWC IU.
- Chino performed quarterly post-remediation monitoring of the Hurley Railroad Site under the STS IU.
- The AOC Technical Group participated in meetings and/or conference calls on October 23rd and November 29th to review the AOC progress. On October 5th, Chino and NMED toured potential sites for the pending CWG annual tour.

Hanover/Whitewater Creeks Investigation Unit

Following NMED's 2009 approval of the *Groundhog Mine Site Interim Remedial Action (IRA) Completion Report*, Chino submitted an addendum to the completion report for the remediation

of the old pipeline corridor in 2011 as well as the *Star Rock Stockpile IRA Completion Report* as part of the Historic Small Stockpiles. These stockpiles are comprised of the historical Osceola, CB Bell, and Tenderfoot mine sites per the IRA completion report approved by NMED in 2009. Since those NMED approvals, Chino has performed quarterly post-reclamation erosion and vegetation monitoring of the sites during the series of required growing seasons defined to meet successful revegetation establishment, as well as bi-annual water quality monitoring. Chino continues to perform bi-annual water quality monitoring of the site since 2005. These survey results are included in the Groundhog Mine Site annual monitoring reports. Chino submitted the *Groundhog Mine Site Annual Monitoring Report* on October 31, 2017.

Chino performed a quantitative vegetation survey of these IRA sites in 2015. The quantitative survey evaluated the success of the revegetation of the sites after a minimum of five growing seasons as per the IRA work plans. Chino submitted the *Vegetation Monitoring Report* in 2016, which provides the quantitative survey evaluation for the IRA sites. Following receipt of a response letter from Chino to their comments on the report, NMED then approved the *Vegetation Monitoring Report* in a letter dated August 31, 2017.

MMD has approved extension requests by Chino under Permit GR009RE for the completion of reclamation activities at the Lucky Bill Groundhog Mine No. 5 site. MMD issued permit Modification 14-1 to Revision 01-1, Permit GR009RE in a letter dated September 18, 2014 that sets June 2018 as the date for completion of closeout plan activities. This extension period is necessary for Chino to sequence the MMD reclamation process with the AOC. Additionally, in 2014 Chino submitted the *Groundhog No. 5 Stockpile Work Plan for Additional Characterization and Controls for the HWC IU* to address inadequate seepage capture for sampling at the toe of the stockpile. In June 2014, NMED approved the work plan, and Chino installed the new seepage collection system which has been performing well. Chino continues to collect samples from the engineered system. Chino revised a draft interim report from early 2016 on the geochemical evaluation in response to preliminary informal comments received from NMED in September 2016. NMED provided informal comments in early October on the revised draft report, submitted by Chino informally in January 2017. Chino and NMED with their consultants participated in a conference call to discuss revisions to the Groundhog No. 5 Stockpile geochemical evaluation report on November 8, 2017. Chino anticipates finalizing the report in first quarter 2018.

The NMED provided the revised *Ecological Risk Assessment* (ERA) report to Chino and the public for review in October 2015. Chino has no further comments on the ERA. NMED and Chino met in Santa Fe on June 20, 2017 to discuss deferring the draft human health risk addendum to the 2008 Human Health Risk Assessment (HHRA). The AOC Technical Group discussed optimizing resources into performing an interim removal action (IRA) instead of utilizing effort into identifying any additional data gaps. A HHRA would then be performed following the IRA to then evaluate remaining risk. NMED gave approval for Chino to develop a workplan for an IRA for their review and comment in a letter dated June 30, 2017. Chino anticipates providing this workplan by first quarter of 2018. As part of that effort, Chino and NMED participated in a field mapping exercise in Whitewater Creek during August 2017.

Hurley Soils Investigation Unit

Chino instigated an outreach program to the remaining six Hurley homeowners to perform soil sampling and potential yard remediation during the second and third quarter. Chino was able to reach agreement with three homeowners to participate in soil sampling which was completed at all three Hurley properties on October 11, 2017. Chino anticipates remediating the only residential site that requires cleanup based on sampling results during the second quarter of 2018. Data results from the samples will be provided in a technical memorandum to NMED once the outreach program has been completed.

Chino plans to provide the annual health advisory by certified mail to the four Hurley homeowners requiring sampling and/or remediation, and the adjacent property owners, during the first quarter as required by the Record of Decision.

Lampbright Investigation Unit

The NMED provided a revised *Draft LIU Ecological Risk Assessment* to Chino for comment in February 2014. Chino provided comments on the draft that April. NMED anticipates responding to these comments and providing the final report to Chino and the public for review during the first quarter of 2018.

Smelter Tailings Soil Investigation Unit

Chino submitted a 5 year monitoring report to NMED and received their approval of the *Vegetation Monitoring Report for the Golf Course Interim Remedial Action, STS IU* in 2014. Chino also submitted a supplemental completion report following a second phase of the Golf Course IRA which addressed an additional 30 acres of impacted soils in the vicinity of the Hurley railroad area in 2013. As documented in this supplemental report, Chino is conducting quarterly post-remediation erosion and vegetation monitoring. Following the quantitative vegetation survey to be performed in October, these survey results will be submitted to NMED in a cumulative survey report after five years of monitoring, anticipated in first quarter of 2018.

Between 2013 and 2014, Chino excavated 94 acres of copper impacted soils from Razorback Ridge and from the hillside slope to the east of Razorback Ridge as part of the Lake One Closure Project. Reseeding of these acres was completed by May 2015. Chino submitted the finalized *Razorback Ridge Area IRA STS IU Supplemental Completion Report* in July 2016 to NMED. As documented in this report, Chino is conducting quarterly post-remediation erosion and vegetation monitoring.

Historical tailings material located in the Apache Tejo drainage was incorporated into the STS IU by NMED in 2009. NMED requested that Chino submit an IRA work plan for Apache Tejo drainage system. Chino plans to submit a survey report and work plan after addressing site access issues. Chino and NMED inspected the "Big Berm" site in March 2017.

The STS IU Pre-Feasibility Study Remedial Action Criteria (RAC) were established by NMED in letters dated September 16, 2010, and March 2, 2011. The following summarizes the activities that occurred in response to this letter:

- The 2011 feasibility study (FS) work plan initiated the following activities and processes:
 - Chino completed survey and soil sampling requirements per the FS Appendix A and B field sampling plan in late 2011.
 - Following the evaluation of the data resulting from the 2011 sampling programs, Chino developed a *Phytotoxicity and Vegetation Community Study Work Plan* to conduct seed collection and soil sampling/collection field events.
 - Following field events and generation of lab data lab during 2014 and 2015, the study component was completed in 2015. Chino provided the *Phytotoxicity and Vegetation Community Study* report for informal review to NMED in April 2017.
 - The *Phytotoxicity and Vegetation Community Study* report was finalized for appending to the draft FS report, and provided again informally to NMED for their review in August 2017.
 - Chino anticipates submitting the draft FS report in 2018, following incorporation of phytotoxicity study and its results, as well as the pending five year monitoring reports for the amendment study and the white rain monitoring study.

- As part of the process to address RAC for surface water, Chino submitted two work plans in 2011: 1) *Application of the Hydrology Protocol to STS IU Drainages*; and 2) *Use Attainability for Stock Tanks*.
 - Chino performed field work for both of the plans in 2011 and submitted the sampling results in the *Expedited Use Attainability Analysis (UAA): Application of NMED Hydrology Protocol to STS IU Drainages* in 2012 to NMED Surface Water Quality Bureau (SWQB).
 - NMED commented on the *Use Attainability Analysis for Stock Tanks Work Plan* in a Notice of Disapproval letter dated June 30, 2011. Chino plans to respond to the comments when presenting the sampling results to the NMED in 2018 based on the work as described in the following bullets.
 - Chino revised the UAA and resubmitted the HP report in 2013 and again in 2014 based on comments received by SWQB from the public notice and later from the EPA.
 - SWQB petitioned the NM Water Quality Control Commission (WQCC) to accept the proposed UAA, in advance of the Triennial Review hearing that occurred in October 2015.
- Additionally, in support of the process to address RAC for surface water, Chino submitted for review to the NMED SWQB the *Development of Site-Specific Copper Criteria Work Plan for the STS IU* in 2011.
 - Chino performed the two phases of surface water sampling during 2011 under the approved copper criteria adjustment work plan.
 - Chino submitted a finalized interim report on the *Development of Site-Specific Aquatic Life Criteria for Copper in STSIU Drainages* study and the *Revised Site-Specific Copper Toxicity Model Report* to the SWQB to SWQB in 2013.
 - Following the filing of the Petition to Amend the Surface Water Quality Standards (20.6.4 NMAC) and Request For Hearing with the WQCC, Chino filed testimonies supporting the Site-Specific Copper criteria petition with the WQCC in December 2014, in advance of the Triennial Review hearing that occurred in October 2015.
- On January 7, 2017 the WQCC Statement of Reason and Final Order was signed for proposed amendment to standards for interstate and intrastate waters 20.6.4 NMAC which includes Chino's site specific standard and UAA for drainages in the STS IU. These revised Water Quality Standards became effective on March 2, 2017, pursuant to the laws of the State of New Mexico.
 - In a letter dated June 8, 2017 to the WQCC and at their request, the EPA provided a review on the revisions to New Mexico's Standards for interstate and intrastate surface waters under 20.6.4 NMAC, as required under federal regulations. The EPA has determined that it cannot take action on the STS IU amended designated uses or criteria at this time as additional information is needed.
 - Chino is coordinating with NMED to address EPA questions.

Chino completed the five year phase of bi-annual sampling and monitoring of the pilot amendment study area in October 2013. The current activities associated with the study include:

- Chino conducted the five year quantitative vegetation survey in 2013.
- The annual monitoring data were included with the five year data analysis report titled *Year 5 Monitoring Report for STS IU Amendment Study Plots*, provided to NMED for informal review in 2015. NMED provided comments based on their informal review of the draft report in 2016 followed by Chino's informal responses to those comments to NMED in June 2017.

- Chino submitted the *Year 5 Monitoring Report for STS IU Amendment Study Plots* on December 6, 2017, following a July conference call discussion with NMED on final revisions to the draft report based on those responses and comments.

As part of the amendment study process, Chino monitored the effects to soil pH following its *White Rain Technical Memorandum* report that documented changes in the pH of the soils plots caused by a natural event that occurred in January 2008. Chino completed the five year phase of annual sampling of soil sites in 2014. The current activities associated with the study are as follows:

- The annual monitoring data generated from the soil samples were included in the draft *Year 5 Report on pH Monitoring to Evaluate the Effect of the White Rain on the STS IU* provided to NMED for informal review in 2015 with their comments received by Chino in 2016.
- Chino submitted the *Year 5 Report on pH Monitoring to Evaluate the Effect of the White Rain on the STS IU* to NMED in April 2017.
- NMED provided comments on the white rain report in a letter dated September 18, 2017. Chino responded to those comments in a letter dated October 9, 2017 while also providing by email a document that updated comments and responses between Chino and NMED following a March 2017 conference call.
- Following a review of the response to comment document that addressed questions and comments from March, NMED requested a revised report based on comments provided in a letter dated November 16, 2017.
- Chino requested an extension in order to respond to those comments in a letter to NMED dated December 20, 2017. NMED provided approval for the requested 30 day extension in a letter to Chino dated January 9, 2018.
- Chino submitted a response letter to NMED by the deadline date of January 19, 2018.

Community Relations

The Community Work Group (CWG) elected not to meet again until January 9, 2018. Instead for the fourth quarter, the CWG participated in their annual AOC site tour on October 7, 2017. The three local Chino AOC document repositories continue to be maintained and updated with current documentation. The online electronic document repository (<http://www.fcx.com/chino/>) is also up to date.

Next Quarter's Scheduled Activities

The following work and activities are projected for the first quarter of 2018:

- Submit an *Interim Removal Action Workplan Proposal* for the HWC IU.
- Submit the revised *Draft Ecological Risk Assessment* for the Lampbright IU for Chino and public review.
- Submit the vegetation five year monitoring report for the Hurley Railroad IRA under the STS IU.
- Submit the *Interim Report for the Geochemical Evaluation of the Groundhog No. 5 Stockpile, HWC IU*.
- Chino will provide the annual health advisory by certified mail to the remaining 4 Hurley homeowners and the adjacent property owners.
- Quarterly inspections of interim remediation sites with the HWC IU and STS IU.
- The AOC Technical Group will meet monthly.

Personnel Changes

There were no personnel changes during the quarter.

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Problems and Solutions

There were no problems that adversely affected the AOC this quarter.

Please contact Ms. Alicia Voss at (602) 366-8049 with any questions or comments concerning this report.

Sincerely,



Sherry Burt-Kested
Manager, Environmental Services

SBK:pp
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