

Freeport-McMoRan Chino Mines Company  
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Bayard, NM 88023

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October 30, 2017

**Certified Mail #70160750000113392847**  
**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, Third Quarter 2017**

This Administrative Order on Consent (AOC) Quarterly Report documents activities performed during the reporting period from July 1 through September 30, 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 third quarter of 2017, the following major activities occurred:

- Chino provided the *Phytotoxicity and Vegetation Community Study* report under the STS IU for review to the NMED.
- Chino and NMED participated in a field mapping exercise for the pending HWC IU interim removal action workplan proposal during August 22<sup>nd</sup> and 23<sup>rd</sup>.
- 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 Hanover Whitewater Creeks Investigation Unit (HWC IU).
- Chino performed quarterly post-remediation monitoring of the Hurley Railroad Site under the STS IU.
- The Community Work Group met on September 12<sup>th</sup> in Bayard, NM.
- Chino and NMED performed annual post-reclamation monitoring of AOC Interim Remedial Action sites on September 21<sup>st</sup>.
- The AOC Technical Group participated in meetings and/or conference calls on July 20<sup>th</sup>, August 17<sup>th</sup> and September 12<sup>th</sup> to review the AOC progress.

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 Osceolla, 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 will submit the annual *Groundhog Mine Site Annual Monitoring Report* on October 31, 2017.

Chino performed a quantitative vegetation survey of these IRA sites in September 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* on September 30, 2016, which provides the quantitative survey evaluation for the IRA sites. NMED provided comments on the report in a letter dated June 13, 2017. Chino submitted responses to those comments in a document dated July 21, 2017. 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 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 fourth quarter of 2017. As part of that effort, Chino and NMED participated in a field mapping exercise in Whitewater Creek during August 22 and 23 of 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 and soil sampling was completed at all three Hurley properties on October 11, 2017. Data results from the samples will be provided in a technical memorandum to NMED once the outreach program has been completed.

#### 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 fourth quarter of 2017.

#### 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 fourth quarter of 2017.

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 on April 19, 2017.
  - Following a meeting in Albuquerque and two discussions by teleconference during the second quarter by Chino and NMED with their risk assessors, the *Phytotoxicity and Vegetation Community Study* report was finalized for submittal informally to NMED on August 4, 2017.
  - Chino anticipates submitting the draft FS report in 2018, following incorporation of phytotoxicity study 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 May 2013 and again in October 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 to SWQB in April 2013.
    - Chino submitted the *Revised Site-Specific Copper Toxicity Model Report* to the SWQB in October 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 SWQB 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 October 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.
- Chino received comments in August 2016 from NMED following their informal review of the draft report. Chino provided informal responses to those comments to NMED on June 9, 2017. Chino and NMED with their consultants discussed the revisions to the draft report based on those responses and comments in a conference call on July 20, 2017. Chino anticipates finalizing the report in fourth quarter 2017.

As part of the amendment study process, Chino has been monitoring 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 November 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 early November 2016.
- Following the informal review of the draft report, Chino participated in a conference call with NMED and their risk assessor consultant to help finalize the draft on March 3, 2017.
- Chino submitted the *Year 5 Report on pH Monitoring to Evaluate the Effect of the White Rain on the STS IU* to NMED on April 18, 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 the March 3, 2017 conference call.

#### Community Relations

The Community Work Group (CWG) met on September 12, 2017. The CWG elected to meet again on January 9, 2017. The CWG scheduled their annual AOC site tour for 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 fourth quarter of 2017:

- Submit the *Year 5 Monitoring Report for STS IU Amendment Study Plots*, which combines the October 2013 vegetation survey completing the five year review requirement and the annual soil sampling results.
- Submit a *"Hot Spot" 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*.
- Quarterly inspections of interim remediation sites with the HWC IU and STS IU.
- CWG annual site tour on October 7, 2017.
- The AOC Technical Group will meet monthly.

#### Personnel Changes

There were no personnel changes during the quarter.

#### 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.

Mr. Bruce Yurdin  
October 30, 2017  
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Sincerely,

A handwritten signature in blue ink, reading "Sherry Burt-Kested". The signature is fluid and cursive, with the first name "Sherry" being the most prominent.

Sherry Burt-Kested  
Manager, Environmental Services

SBK:pp  
20171027-001

xc (via email):

David Mercer, NMED  
Joseph Fox, NMED  
DJ Ennis, MMD  
Holland Shepherd, MMD  
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