

Freeport-McMoRan Chino Mines Company  
P.O.Box10  
Bayard, NM 88023

October 30, 2015

**Certified Mail #7015166000060761815**  
**Return Receipt Requested**

Trais Kliphuis, Director  
New Mexico Environment Department  
Water Protection Division  
P.O. Box 5469  
Santa Fe, New Mexico 87502

Dear Ms. Kliphuis:

**Re: Chino AOC Quarterly Report, Third Quarter 2015**

This Administrative Order on Consent (AOC) Quarterly Report documents activities performed during the reporting period from July 1 through September 30, 2015. 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 2015, the following major activities occurred:

- Chino submitted the Year 5 Report on pH Monitoring to Evaluate the Effect of the White Rain on the Smelter/Tailing Soils Investigation Unit to NMED for review and comment prior to finalization.
- Chino resubmitted the Year 5 Monitoring Report for Smelter/Tailing Soils Investigation Unit Amendment Study Plots to NMED for review and comment prior to finalization.
- Chino performed quarterly post-reclamation and remedial monitoring of the Groundhog Mine Site and the Historic Small Stockpiles under the Hanover/Whitewater Creeks Investigation Unit (HWC IU).
- Chino performed a quantitative vegetation survey in September of the Groundhog Mine and Small Historic Stockpiles to evaluate the progress of the reclamation after a minimum of five growing seasons.
- Chino performed quarterly post-remediation monitoring of the Hurley Railroad Site under the Smelter Tailings Soils Investigation Units (STS IU).
- The Community Work Group met on September 15 in Bayard, NM.
- The AOC Technical Group participated in meetings and/or conference calls on August 19, September 15 and October 20 to review the AOC progress.

**Hanover/Whitewater Creeks Investigation Unit**

Following approval by NMED of the completion report for the Interim Remedial Action (IRA) at the Groundhog Mine Site, Chino has performed quarterly post-reclamation water quality, erosion, and vegetation monitoring of the site since 2009. Chino submitted an addendum to the 2009 *Groundhog IRA Completion Report* for the

remediation of the old pipeline corridor in 2011. Chino performed the annual vegetation survey in September 2015 and submitted the Groundhog Mine Site annual monitoring report on October 30, 2015 to NMED.

Chino continues to perform quarterly post-reclamation water quality, erosion, and vegetation monitoring of the historical Osceola, CB Bell, and Tenderfoot mine sites following approval by NMED of the IRA completion report.

These survey results are included in the Groundhog Mine Site annual monitoring reports. Following Chino's

submission of the Star Rock Stockpile IRA Completion Report as part of the Historic Small Stockpiles earlier in 2011, the site is now also included in the quarterly monitoring program.

MMD has approved extension requests by Chino under Permit GR009RE for the Lucky Bill Groundhog Mine No. 5 site for completion of reclamation activities. Chino submitted an additional extension request to MMD on May 21, 2014 proposing to move the date for completion of closeout plan activities to June 2018. The MMD provided an approval permit of Modification 14-1 to Revision 01-1, Permit GR009RE in a letter dated September 18, 2014. This extension period is necessary for Chino to sequence the MMD reclamation process with the AOC. Furthermore, Chino has attempted to collect stockpile seepage since 2011 in response to NMED's request that Chino demonstrate that the seepage meet applicable groundwater quality standards. However due to multiple years of less than average precipitation and an inadequate seepage collection system design, Chino proposed an improved plan to monitor seepage. Following a February 2014 site visit by the Technical Group and MMD, Chino submitted the *Groundhog No. 5 Stockpile Draft Work Plan for Additional Characterization and Controls for the HWC IU*. NMED approved the workplan in a letter dated June 25, 2014. Chino installed the new seepage collection system in June 2014. Chino has since collected water samples from the collection system following a series of high precipitation events. Chino anticipates submitting a report on the results during the fourth quarter of 2015.

The NMED completed and provided the revised *Draft Ecological Risk Assessment (ERA)* report to Chino and the public for review in 2012. NMED provided a revised ERA report to the administrative record on April 20, 2015. Revisions to the report are in response to comments received from Chino and other stakeholders. Chino submitted comments on the revised report on June 18, 2015. No other public or stakeholder comments were received by NMED. NMED provided responses to Chino's comments in a letter dated October 6, 2015. Chino has no further comments on the ERA, and NMED anticipates finalizing the ERA by the end of the year.

#### Hurley Soils Investigation Unit

There were no activities this quarter to report for the Hurley Soils Investigation Unit.

#### Lampbright Investigation Unit

The NMED provided the *Draft LIU Ecological Risk Assessment* to Chino for informal review and comment in early 2013. NMED provided a revised Draft ERA to Chino in February 2014. Chino provided comments on the draft via email on April 11, 2014. NMED anticipates responding to these comments and providing the final report to Chino and the public for review during the fourth quarter of 2015 or early 2016.

#### 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* during the spring of 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 completion report, Chino is conducting quarterly post-remediation erosion and vegetation monitoring. These survey results will be submitted to NMED in a cumulative vegetation survey report after five years of monitoring, expected in 2017.

During 2013, Chino removed approximately 85 acres of copper impacted soils from Razorback Ridge and in March 2014 removed approximately 20 additional acres from the hillside slope to the east of Razorback Ridge

as part of the Lake One Closure Project. Reseeding of the remaining acres will occur in April 2015. The excavated soils were used as fill material for the Lake One Closure Project. Chino provided a draft completion report in the first quarter of 2015 to NMED for review and received comments in third quarter. Chino submitted the finalized completion report on October 7, 2015.

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.

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:

- Following submittal of a draft feasibility study (FS) work plan in late 2010, Chino finalized the FS work plan (proposal) in third quarter 2011. The following activities for the FS process occurred:
  - 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 *Draft Phytotoxicity and Vegetation Community Study Work Plan* to conduct seed collection and soil sampling/collection field events in 2013.
  - Chino submitted the finalized *Phytotoxicity and Vegetation Community Study Work Plan* to NMED and received conditional approval in March 2014.
  - Chino conducted additional seed collection and vegetation survey field events during September 2014. The generation of lab data under this study was completed in third quarter of 2015. Chino anticipates submitting the *Phytotoxicity and Vegetation Community Study* report in early 2016.
  - Chino anticipates submitting the draft FS report in 2016, 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).
  - Chino revised the UAA based on comments received by SWQB from the public notice and resubmitted the HP report in May 2013.
  - The NMED SWQB submitted, pursuant to Subsection C, 20.6.4.15 NMAC, a request to the EPA for technical approval of the UAA in a letter dated June 26, 2013.
  - EPA responded to SWQB in a letter dated June 26, 2014, providing comments on the HP Report. EPA requested additional information to be added to the HP Report. In coordination with SWQB Chino submitted a revised the HP Report with responses to comments to SWQB via email on October 24, 2014. Chino participated on a teleconference and webinar with EPA and NMED on January 16, 2015 to address EPA comments and questions on the HP report.
  - 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.
  - 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 2015 or 2016.

- 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 on October 1, 2013.
  - In an email communication dated October 31, 2013, SWQB agreed with the revisions to the model report and that site specific criteria could be supported by this work.
  - Chino presented the *Site-Specific Copper Toxicity Model Report* to the CWG on September 16, 2014.
  - Chino filed a Petition to Amend the Surface Water Quality Standards (20.6.4 NMAC) and Request For Hearing with the WQCC on September 30, 2014.
  - Chino filed testimonies supporting the Site-Specific Copper criteria petition with the WQCC on December 12, 2014, in advance of the Triennial Review hearing that occurred in October 2015.

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 fifth year of monitoring and bi-annual soil sampling in 2013, as well as the five year vegetation survey.
- The annual monitoring data were combined under the five year data analysis report titled *Year 5 Monitoring Report for STS IU Amendment Study Plots*, which was submitted to NMED in October 2014 for informal review. Chino resubmitted a draft report in third quarter of 2015, and anticipates comments and final submittal in fourth quarter 2015.

As part of the amendment study process, Chino developed a work plan to monitor 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. NMED approved the "*White Rain*" *Soil pH Monitoring Plan* in July 2010. The current activities associated with the study are as follows:

- Following the fall sampling in 2013, Chino submitted the Year 4 Report on May 28, 2014, which was approved by NMED on June 24, 2014.
- The fifth year soil sampling of this five year study was performed in November 2014.
- Chino submitted the annual monitoring data combined with the five year review report in third quarter of 2015 for informal review, and anticipates finalizing the report in fourth quarter 2015 following receipt of comments.

#### Community Relations

The Community Work Group (CWG) met on September 15, 2015. During that meeting, Chino's consultant ARCADIS presented "pH Monitoring to Evaluate the Effects of White Rain" for STSIU. The CWG also met on October 20, 2015 where NMED's consultant Formation presented "Ecological Risk Assessment Update" for HWCUIU to the group. The CWG elected to meet again on January 19, 2016. The three local Chino AOC document repositories continue to be maintained and updated with current documentation. The online electronic document repository is also up to date.

Next Quarter's Scheduled Activities

The following work and activities are projected for the fourth quarter of 2015:

- 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 the *Year 5 pH Monitoring Report for the STS IU*, which combines the annual soil sampling results and the final report; an analysis and summary of the 5 years of monitoring data.
- Submit the revised *Draft Ecological Risk Assessment* for the Lampbright IU for Chino and public review.
  
- 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 Ned Hall at (520) 393-2292 with any questions or comments concerning this report.

Sincerely,



Sherry Burt-Kested, Manager  
Environmental Services

SBK:eh  
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c:

Joseph Fox, NMED (via email)  
Chris Eustice, MMD (via email)  
Holland Shepherd, MMD (via email)  
Petra Sanchez, US EPA (via email)  
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