

From: [Whited, Jeffrey](#)
To: ["Wohlford, Tom"](#)
Subject: NRC DRAFT RAI-Groundwater Monitoring Plan License Amendment Request
Date: Monday, September 17, 2018 1:34:00 PM
Attachments: [DRAFT NRC Groundwater Monitoring Plan RAIs.pdf](#)

Mr. Wohlford,

By letter dated November 20, 2017, the Homestake Mining Company of California (HMC, the licensee) submitted a license amendment request to the U.S. Nuclear Regulatory Commission (NRC) staff for review and approval. Specifically, HMC proposed an update to the groundwater monitoring plan listed in Materials License SUA-1471, License Condition 35A, to adjust the compliance monitoring for the groundwater restoration areas at the Grants Reclamation Project Site. HMC is proposing this update to take into account changes in the restoration program and problematic wells. After conducting its initial assessment, the NRC staff determined that the requests for additional information (RAIs) attached are necessary to complete its detailed technical review.

The RAIs are attached in DRAFT form. Please review these RAIs and let me know if you would like to hold a clarification call with the NRC to ensure the RAIs are clear, the responses to the questions aren't readily available, and that the information hasn't previously been docketed. Following this discussion I will issue a letter providing the RAIs.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this e-mail and its attachment will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Please contact me with any questions or concerns.

Sincerely,

Jeffrey Whited

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**REQUEST FOR ADDITIONAL INFORMATION
HOMESTAKE MINING COMPANY OF CALIFORNIA
REVIEW OF GROUNDWATER MONITORING PLAN
LICENSE AMENDMENT REQUEST**

Docket Number: 040-08903

License Number: SUA-1471

By letter dated November 20, 2017,¹ the Homestake Mining Company of California (HMC, the licensee) submitted a license amendment request to the U.S. Nuclear Regulatory Commission (NRC) staff for review and approval. Specifically, HMC proposed an update to the groundwater monitoring plan listed in Materials License SUA-1471, License Condition 35A, to adjust the compliance monitoring for the groundwater restoration areas at the Grants Reclamation Project Site. HMC is proposing this update to take into account changes in the restoration program and problematic wells.

Figures 2-2, 2-3, 2-4, and 2-5 of the request provide the location of the proposed compliance monitoring wells and areas of contamination exceeding the site standards for the Alluvial, Upper Chinle, Middle Chinle, and Lower Chinle Aquifers, respectively. These wells are intended to be used to demonstrate groundwater restoration at the Grants site relative to site standards listed in License Condition 35B. These wells have already been installed and are currently being sampled. HMC also notes that these wells are expected to also be used for post-closure monitoring. Groundwater restoration for the Grants site are separated into three areas: On-Site, South Off-Site, and North Off-Site restoration areas, as shown in Figure 1-1 of the licensee's request.

After conducting its initial assessment, the NRC staff determined that the requests for additional information (RAIs) below are necessary to complete its detailed technical review.

RAI 1

Comment: HMC did not submit completed NRC Form 313 for the Groundwater Monitoring Plan License Amendment Request.

Basis: Title 10 of the *Code of Federal Regulations* (10 CFR) Section 40.44, *Amendment of licenses at request of licensees*, states:

Applications for amendment of a license shall be filed on NRC Form 313 in accordance with [10 CFR] 40.31 and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

¹ Agencywide Document Access and Management System (ADAMS) Accession No. ML18018A102.

Path Forward: Please submit NRC Form 313 for the Groundwater Monitoring Plan License Amendment Request as part of the HMC response to these RAIs.

RAI 2

Comment: HMC did not specify how its license should be amended.

Basis: 10 CFR Section 40.44, states:

Applications for amendment of a license shall be filed on NRC Form 313 in accordance with [10 CFR] 40.31 and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

Path Forward: Please provide the requested changes to License Condition 35A that would be implemented with this license amendment request.

RAI 3

Comment: Additional information is needed to verify that restoration is not needed in the Middle Chinle aquifer to the north of Large Tailings Pile (LTP).

Basis: 10 CFR 40 Appendix A, Criterion 7A, states, in part, that:

In conjunction with a corrective action program, the licensee shall establish and implement a corrective action monitoring program. The purpose of the corrective action monitoring program is to demonstrate the effectiveness of the corrective actions.

In Section 2.3 of its amendment request, HMC stated that restoration north of CW17 is not required because these concentrations are natural. Figures 1.1-20, 1.1-21, 1.1-22, and 1.1-23 in the 2017 Annual Monitoring Report/Performance Review,² which are from 1982, 1996, 1999, and 2014, respectively, do not show evidence of contamination in the Middle Chinle aquifer to the north of the LTP. However, Figure 1.1-24 for 2017 shows contamination to the north of the LTP. Section 6.3.4 of the 2017 Annual Monitoring Report/Performance Review states that uranium concentrations in the Middle Chinle aquifer, west of the West Fault, northwest of the LTP, naturally exceed 0.18 mg/L. However, the report further states that values in several wells have increased above this level from the movement of alluvial water in the subcrop to these wells.

It is not clear to NRC staff why restoration of this area of the Middle Chinle aquifer is not included in the groundwater monitoring program. It appears that contamination exceeding the

² ADAMS Package Accession No. ML18102A947.

groundwater protection standards that are identified in License Condition 35B has migrated into the Middle Chinle aquifer from the Alluvial aquifer.

Path Forward: Please include restoration of the Middle Chinle aquifer north of the LTP in the groundwater monitoring program or provide additional justification demonstrating that the observed concentrations are natural.

RAI 4

Comment: The licensee did not provide a proposal for a monitoring period after the cessation of groundwater restoration activities. This should include a discussion on HMC's groundwater monitoring strategy to consolidate the groundwater monitoring well network as groundwater remediation is completed.

Basis: 10 CFR 40 Appendix A, Criterion 7A, states, in part, that

[t]he purpose of the corrective action monitoring program is to demonstrate the effectiveness of the corrective actions.

Groundwater restoration activities could, in the short term, result in relatively low contaminant concentrations. These contaminant concentrations could increase (i.e., rebound) after the cessation of restoration activities. The licensee's amendment request does not provide discussion on the strategy to consolidate the groundwater monitoring well network after groundwater restoration has been completed in areas with contamination. The amendment request also does not include discussion of a proposed monitoring period after the cessation of corrective actions.

Path Forward: Propose and justify a monitoring period after the cessation of corrective actions to verify that contaminant concentrations do not rebound after groundwater restoration activities have been completed. As part of that response, please provide a discussion of HMC's strategy to consolidate the groundwater monitoring program as restoration of the groundwater is completed.

RAI 5

Clarifying Comment: Sampling Point 2 (SP2) is listed in Table 2-1 of the amendment request, as a groundwater monitoring location. The NRC staff notes that monitoring of SP-2 is already required in License Condition 35C, and listing it as a groundwater monitoring location may be redundant.

RAI 6

Clarifying Comment: Clarify whether well DE9 in the last sentence of Section 2.2 of the amendment request should be well CE9.