



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

November 26, 2018

EA-16-114

Thomas Wohlford
Closure Manager
Homestake Mining Company of California
P.O. Box 98
Grants, NM 87020

SUBJECT: HOMESTAKE MINING COMPANY, NRC INSPECTION
REPORT 040-08903/2018-002

Dear Mr. Wohlford:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) team inspection conducted August 27-30 and September 10-12, 2018, at the Homestake Mining Company site near Grants, New Mexico. This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, performance of independent radiation surveys, and interviews with personnel. The enclosed report presents the results of this inspection.

The inspection included a review of the 16 conditions specified in the Confirmatory Order dated March 28, 2017 (Agencywide Documents Access and Management System [ADAMS] Package ML17060A752). The inspection also included a review of three previously identified NRC inspection findings. The preliminary inspection results were presented to you and your staff at the conclusion of the onsite inspection on September 12, 2018. The final inspection results were presented to you by telephone on October 19, 2018, after the NRC completed its enforcement review of the inspection findings.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation involved your discharge of liquid effluents in excess of the site groundwater protection standards established in the license. This violation is being treated as a Non Cited Violation (NCV), consistent with Paragraph 2.3.2.b of the NRC's Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. The violation is not being cited because you identified and notified the NRC about the exceedances, and you took corrective actions to prevent recurrence of the violation. The NCV is described in Section 3.2 of the enclosed inspection report.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this letter, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region IV; and (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS) accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, if you choose to provide one, should not include any personal privacy or proprietary information so that it can be made available to the Public without redaction.

Should you have any questions concerning this inspection, please contact Dr. Robert Evans at 817-200-1234, or the undersigned at 817-200-1151.

Sincerely,

/RA/

Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket No.: 040-08903
License No.: SUA-1471

Enclosure:
Inspection Report 040-08903/2018-002

cc w/enclosure:
M. Hunter, New Mexico Environment
Department
S. Rodriguez, New Mexico Environment
Department
D. Barr, U.S. Department of Energy

**U.S. NUCLEAR REGULATORY COMMISSION
Region IV**

Docket No.: 040-08903

License No.: SUA-1471

Report No.: 040-08903/2018-002

Licensee: Homestake Mining Company of California

Facility: Grants Reclamation Project

Location: Cibola County, New Mexico

Inspection Dates: August 27-30 and September 10-12, 2018

Inspectors: Robert Evans, PhD, PE, CHP, Senior Health Physicist
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Approved by: Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Attachment: Supplemental Inspection Information

Enclosure

EXECUTIVE SUMMARY

Homestake Mining Co. of California
NRC Inspection Report 040-08903/2018-002

This U.S. Nuclear Regulatory Commission (NRC) team inspection was a routine, announced inspection of decommissioning activities being conducted at the Grants Reclamation Project site in Cibola County, New Mexico. In summary, the licensee conducted decommissioning activities in accordance with license and regulatory requirements, with one exception as described below.

Management Organization and Controls

The licensee implemented its change process in accordance with license and procedural requirements. A previously cited violation involving cultural resource inventories was closed. (Section 1.2)

Radioactive Waste Processing, Handling, Storage, and Transportation

The licensee conducted site activities with an emphasis on safety. Site fences, gates, and perimeter postings were maintained by the licensee. Independent measurements of ambient radiation levels were observed to be consistent with previous NRC inspection findings. The licensee established operating procedures, but these procedures needed to be clarified and updated. The inspectors reviewed evaporation pond operations with the licensee's staff including current issues and future actions that may be taken to resolve these issues. A previously identified violation involving radon flux was left open pending the NRC review of the licensee's methodology for estimating public doses and the licensee's submittal of an updated exemption request to the NRC. A previously identified unresolved item involving monitoring of workers was closed based on the licensee's study to demonstrate that occupational monitoring was not required. (Section 2.2)

Effluent Control and Environmental Protection

The licensee continued to implement an extensive groundwater corrective action program in accordance with license requirements, with one exception. The licensee reinjected water into groundwater aquifers with concentrations of uranium and molybdenum that exceeded the groundwater protection standards as specified in the license. The licensee identified and reported the exceedances to the NRC, and the licensee took corrective actions to prevent recurrence of the exceedances. These exceedances were identified as a non-cited violation of license requirements. (Section 3.2)

Closeout Inspection and Survey

As required by the Confirmatory Order, the licensee submitted a land application impact assessment report, final status survey plan, and final status survey report to the NRC for four properties previously used for land application irrigation. The licensee's final status survey report concluded that the four properties met the criteria for release for unrestricted use. The NRC elected to conduct a confirmatory survey of the four areas. The confirmatory survey results were not available at the end of the onsite inspection. (Section 4.2)

Follow up of Confirmatory Action Letters or Orders

Confirmatory Order EA-16-114, Conditions 1, 9, and 11-13 have been evaluated and are determined to be satisfied. Confirmatory Order Conditions 2-8, 10, and 14-16 remain open with pending actions and will continue to be evaluated by the NRC. (Section 5.2)

Report Details

Site Status

The Homestake Mining Company facility was a conventional uranium mill that operated from 1958-1990. The mill was decommissioned in 1993-1994, and cleanup of the wind-blown tailings was completed in 1995. Tailings generated from milling operations were placed in two onsite piles, a large tailings pile and a small tailings pile.

The side slopes of the large tailings pile have been covered with a permanent radon barrier and erosion protection layer. An interim cover is being maintained on top of the large tailings pile. Two lined evaporation ponds are situated on top of the small tailings pile. The remainder of the small tailings pile is covered with an interim cover. In addition, two water collection ponds were constructed adjacent to the small tailings pile. A third evaporation pond was constructed and placed into service in 2010-2011 to the north of the large tailings pile.

At the time of the inspection, the licensee continued to implement the groundwater corrective action program. The licensee continued to operate injection and recovery wells, as well as the reverse osmosis and zeolite cleanup systems. The licensee continued to dispose of wastewater in the three evaporation ponds.

At the time of the inspection, the licensee was slowly draining Evaporation Pond EP-1 in preparation for liner replacement in 2019. After the relining of Pond EP-1, the licensee plans to remove the other two evaporation ponds from service for liner repair. In the future, the licensee plans to conduct a pilot test by adding a polymer to the water entering the reverse osmosis units, to determine the effectiveness of the polymer in reducing the turbidity of the water and to protect the membranes of the reverse osmosis units. The licensee also plans to implement a pilot test to determine the feasibility of using horizontally drilled wells to remediate the groundwater underneath the large tailings pile.

1 Management Organization and Controls (88005)

1.1 Inspection Scope

The inspectors reviewed the licensee's oversight and control of licensed activities. Specifically, the inspectors reviewed the licensee's implementation of its change process.

1.2 Observations and Findings

a. Review of Licensee's Change Process

Materials License SUA-1471, Amendment 52, License Condition 16 states, in part, that before engaging in any activity not previously assessed by the NRC, the licensee shall prepare and record an environmental evaluation of such activity. In addition, License Condition 43 states, in part, that before engaging in any developmental activity not previously assessed by the NRC, the licensee shall administer a cultural resource inventory.

The licensee's program to evaluate changes was described in Standard Operating Procedure SOP-10, "Procedure for Conducting a Safety and Environmental Review

Panel,” Revision 5, from the licensee’s Manual of Standard Practices. During 2018, the licensee issued four Safety and Environmental Review Panel (SERP) evaluations. The inspectors reviewed these four evaluations for compliance with procedural and license requirements:

- SERP 18-01 concerning geochemistry testing with core borings taken from the large tailings pile
- SERP 18-02 concerning the relining of Evaporation Pond EP-1
- SERP 18-03 concerning the re-seeding of former land application areas
- SERP 18-04 concerning a pilot test using a polymer at the reverse osmosis plant

A fifth SERP evaluation involving a pilot test for horizontal drilling was started, but had not been issued at the time of the inspection. The inspectors did not review this incomplete SERP evaluation.

The NRC inspectors confirmed that the licensee implemented the change process in accordance with license and procedural requirements. However, when reviewing the documentation provided by the licensee for the SERP evaluations mentioned above, the inspectors determined that more information could have been provided to ensure that future inspectors and licensee staff understand the rationale for the technical evaluations and associated conclusions. For example, a majority of the questions asked in the SERP process were answered with one sentence. Detailed answers would help ensure that the licensee took into account the appropriate potential technical issues, environmental hazards, and cultural resource impacts prior to implementing changes to its programs. During the inspection, the licensee’s staff agreed to reconsider the level of detail provided in the SERP evaluations.

b. Failure to Conduct Cultural Resource Inventory

During the April 2017 inspection, documented in NRC Inspection Report 040-08903/2017-001 dated July 6, 2017 (ADAMS Accession ML17164A088), the inspectors concluded that the licensee failed to conduct an environmental evaluation and cultural resource inventory during the evaluation of SERP 15-01. These failures were identified as violations of License Conditions 16 and 43, respectively. The inspectors noted that a potential cause for these two non-compliances could be traced to the licensee’s implementing procedure.

The licensee responded to these violations by letter dated August 3, 2017 (ADAMS Accession ML17223A189). The licensee committed to develop and/or update written procedures by November 3, 2017. The inspectors reviewed the licensee’s revised Procedure SOP-10, “Procedure for Conducting a Safety and Environmental Review Panel (SERP),” Revision 3, during the March 2018 inspection, as documented in NRC Inspection Report 040-08903/2018-001 dated May 3, 2018 (ADAMS Accession ML18115A480). At that time, the inspectors determined that the environmental review, as required by License Condition 16, was sufficiently described in the procedure, and the violation of License Condition 16 was closed. However, the

procedure did not adequately address the cultural resource inventory, as required by License Condition 43, and the violation remained open.

During the March 2018 inspection, the inspectors concluded that the licensee's procedure did not provide sufficient detail to ensure that License Condition 43 requirements would be correctly implemented during future cultural resource inventory evaluations. At that time, licensee representatives agreed to review SOP-10 and update the procedure as necessary.

The inspectors reviewed the revised Procedure SOP-10 during this inspection. The inspectors determined that the updated procedure provided sufficient detail to ensure compliance with License Condition 43 requirements. Specifically, the SERP checklist was updated and was determined to be sufficient to ensure that the cultural resources inventory would be completed. Accordingly, Violation 040-08903/1701-03 is closed.

1.3 Conclusions

The licensee implemented its change process in accordance with license and procedural requirements. A previously cited violation involving cultural resource inventories was closed.

2 Radioactive Waste Processing, Handling, Storage, and Transportation (88035)

2.1 Inspection Scope

The inspectors interviewed licensee representatives, toured the site, and reviewed applicable records to determine if the licensee had established and maintained an effective program for managing radioactive wastes.

2.2 Observations and Findings

a. Site Tours

The inspectors toured the site and observed the large tailings pile, small tailings pile, evaporation ponds, collection ponds, zeolite systems, and reverse osmosis equipment. No significant erosion problems were identified on the tailings cells or evaporation ponds. The inspectors observed that the licensee continued to drain Evaporation Pond EP-1 for liner replacement. The licensee was using evaporators in Ponds EP-1 and EP-2 to help with the evaporation of fluid in the ponds. The licensee planned to install evaporators in Pond EP-3 in the near future to enhance the evaporation process. The inspectors observed that site activities were being conducted with an emphasis on safety, and site fences, gates, and perimeter postings were being maintained by the licensee.

During site tours, the NRC inspectors conducted independent radiological surveys using a Ludlum Model 2401-S survey meter (NRC 079971, serial number 181513, calibrated to cesium-137, calibration due date of April 2, 2019). With a background of approximately 7 microRoentgen per hour ($\mu\text{R/hr}$), the ambient gamma radiation levels on top of the large tailings pile in the vicinity of the zeolite ponds were observed to be at or near background levels (10-12 $\mu\text{R/hr}$).

The ambient gamma exposure rates in the reverse osmosis building were noted to be at or below background levels. The burial area on the small tailings pile measured approximately 17 $\mu\text{R/hr}$. The highest measurement, 500-600 $\mu\text{R/hr}$, was identified at the edge of Pond EP-1. The elevated measurements were a result of pond sediment that was partially exposed to the environment. This pond is located within the radiologically restricted area and is not accessible to members of the public. These survey results were consistent with results identified during previous NRC inspections. No area was identified that required posting as a radiation area (5,000 $\mu\text{R/hr}$).

b. Procedure Reviews and Walk-downs

License Condition 23 states, in part, that standard procedures shall be established for all activities involving radioactive materials that are handled, processed, or stored. The inspectors reviewed selected operating procedures for completeness. The procedures reviewed involved onsite disposal of wastes, evaporation pond, zeolite system, and reverse osmosis system operations. In summary, the licensee had established adequate procedures for these activities, but the inspectors concluded that the procedures needed to be clarified and updated.

For example, the waste disposal procedure did not clearly explain if items like contaminated tires could be disposed in the onsite disposal cell, and the procedure did not clearly explain how to radiologically survey waste material prior to disposal. The zeolite system procedure did not clearly describe how to remove algae from the zeolite beds. The evaporation pond procedure did not always clearly explain how to measure freeboard levels. Further, the reverse osmosis system procedure was based on equipment vendor manuals, and the licensee was in the process of updating this procedure to provide a comprehensive discussion of integrated operations.

Based on detailed discussions with site staff, the inspectors concluded that the operations staff understood how to operate the systems despite the procedural weaknesses. No system was found to be incorrectly aligned because of the procedures. The licensee agreed to clarify and update the procedures as needed. Although the licensee did not specify a date when the procedures would be updated, any changes are subject to NRC inspection.

c. Observation of Evaporation Ponds

During site tours, the NRC inspectors observed the three evaporation ponds. By letter dated May 5, 2017 (ADAMS Accession ML17124A527), the licensee notified the NRC that it intended to conduct a technical review of the condition of the liner in Pond EP-1 to assess for potential leakage and to verify pond integrity. In addition, the licensee informed the NRC that it planned to conduct a technical review of the interstitial pumping installation and operation of Ponds EP-2 and EP-3. Although there is no evidence of leakage through the secondary liners from either pond, the licensee informed the NRC that it would conduct the evaluations of Ponds EP-2 and EP-3 to verify pond and liner integrity and the ability to detect any leakage from the ponds.

During the inspection, the licensee discussed its plans to reline Pond EP-1. The pond was constructed in 1990, and the liner has exceeded its design lifespan. The licensee plans to begin the work in 2019 and expects the relining effort to take approximately 6-9 months. The licensee submitted its preliminary engineering design work plan for the

relining effort to the NRC by letter dated August 2, 2018 (ADAMS Accession ML18227A154). As noted earlier, the licensee was draining this pond during the inspection, in preparation for the relining effort.

The Semi-Annual Environmental Monitoring Report for the first half of 2018 dated August 20, 2018 (ADAMS Accession ML18240A228), provided leak detection results for Ponds EP-2 and EP-3. Table 3.1-3 of the Semi-Annual Environmental Monitoring Report shows that leakage rates were periodically greater than the action level of 775 gallons per day per acre in Pond EP-2 for cells 2, 3, and 4. The action level is provided in the licensee's correspondence dated March 17, 2008 (ADAMS Accession ML080800343), which is referenced in License Condition 35.D. Table 3.1-4 shows very limited leakage for Pond EP-3A (Pond EP-3 consists of two separate ponds located adjacent to each other). However, the licensee noted that the leak detection system in Pond EP-3A was not working properly and the measurements may be inaccurate. The licensee is evaluating options to investigate and possibly repair the leak detection and pumping systems for the collection sumps installed in each of the individual cells of Pond EP-3. Finally, Table 3.1-5 of the same report shows leakage in all five cells of Pond EP-3B, with leakage rates periodically greater than the action level of 775 gallons per day per acre in cells B-3, B-4, and B-5.

As stated in the licensee's correspondence dated March 17, 2008, should seepage in excess 775 gallons per acre of liner per day be observed, a liner inspection will be conducted to identify the areas where liner repair or remediation is necessary, and the associated repairs will be undertaken. As noted earlier, the licensee plans to conduct repairs to Ponds EP-2 and EP-3 as necessary after Pond EP-1 has been relined. To address the leak detection measurement and pumping issues, the inspectors discussed with licensee representatives short-term options such as updates to procedures and changes to equipment.

The inspectors also discussed with the licensee's staff its plans to increase the height of pond freeboard. The licensee may increase the pond freeboards from 2 to 3 feet, which may have an impact on berm height. For Pond EP-1, any proposed change in berm height will be addressed in the licensee's final design documents that will be issued for the pond relining effort. Although the final design of the pond berm had not been completed at the time of the inspection, the licensee's initial SERP evaluation concluded that it could make these design changes without prior NRC review and approval. Any changes to the original SERP evaluation are subject to NRC review.

d. Exceedance of Radon Flux Limit

License Condition 36.E requires the licensee to demonstrate compliance with the radon flux standard by performing a radon flux survey for the large tailings and small tailings piles on an annual basis. As documented in NRC Inspection Report 040-08903/2016-001 dated April 20, 2017 (ADAMS Accession ML17088A761), the licensee was cited for its failure to collect a sufficient number of radon flux samples, correctly calculate the radon flux average value, and maintain the radon flux emanating from the large tailings pile below the standard specified in the license and regulations.

The licensee responded to the violation by letter dated May 16, 2017 (ADAMS Accession ML17143A271). In its letter, the licensee indicated that it had placed additional interim cover material onto the large tailings pile in an effort to reduce the

radon flux emanation rate. The licensee stated that additional reviews would be necessary to determine the required cover thickness, as well as proposed corrective actions based on these additional reviews.

By letter dated September 13, 2017 (ADAMS Accession ML17264A070), the licensee provided the results of its additional reviews. Due to technical and physical constraints on placement of the final radon barrier on top of the large tailings pile, the licensee requested an exemption from regulatory (Title 10 to the *Code of Federal Regulations* [10 CFR] Part 40, Appendix A, Criterion 6) and license (License Condition 36.E) requirements for compliance with the radon flux standard for the large tailings pile until completion of groundwater restoration. By letter dated October 19, 2017 (ADAMS Accession ML17292A953), the NRC advised the licensee to resubmit the request for an exemption from regulations with sufficient detail so the NRC staff could conduct a detailed technical review of the request.

Also by letter dated September 13, 2017, the licensee submitted a proposed procedure to the NRC for measuring the radon flux emanation rates on the small and large tailings pile. By letter dated October 19, 2017, the NRC concluded that the procedure was acceptable on an interim basis, until the NRC and licensee agreed on longer-term solutions to the radon flux exceedances.

The inspectors discussed the licensee's proposed exemption request during the inspection. Before the licensee submits the exemption request, the licensee was waiting on NRC approval of its methodology for public dose assessments. In particular, the licensee was waiting on the NRC's response to its letter dated August 20, 2018 (ADAMS Accession ML18240A143), regarding its proposed methodology for estimating public doses from radon. When the NRC accepts the licensee's methodology for estimating public doses, the licensee will finalize its proposed exemption from compliance with the radon flux standard emanating from the large tailings pile. Until the NRC completes its review of the exemption request, the licensee will continue to exceed the radon flux emanation rate. Accordingly, Violation 040-08903/1601-01 remains open.

e. Compliance with 10 CFR Part 20 Requirements

During the September 2017, inspection, documented in NRC Inspection Report 040-08903/2017-002 dated December 20, 2017 (ADAMS Accession ML17353A414), the inspectors observed several contractors performing embankment work on one of the zeolite beds. At that time, the work was being conducted without a radiation work permit, there was no standard procedure for the work, and the licensee was not conducting internal dose monitoring.

Since the licensee did not have recent data for concentrations of airborne uranium or radon progeny on top of the large tailings pile, it was unclear whether the licensee was in compliance with 10 CFR 20.1502(b)(1), which requires, in part, that a licensee must monitor employees for occupational intakes of radioactive material if they are likely to receive greater than 10 percent of the applicable annual limit on intakes from Table 1, columns 1 and 2, of Appendix B to 10 CFR Part 20. At that time, the inspectors concluded that there was not enough information to determine if the licensee was in compliance with regulatory requirements, and this issue was identified as an unresolved item (URI 040-08903/1702-01).

In response to the unresolved item, the licensee implemented several program changes including procedure revisions. In addition, the licensee implemented a radiological sampling program to characterize the occupational exposure concentrations of all radionuclides of concern. The characterization study included data collection to assess internal and external exposures of workers performing routine and non-routine work on the large tailings and small tailings piles.

The inspectors reviewed the results of the licensee's study. The licensee collected data between December 2017 and May 2018. The data included air particulate, radon gas, radon progeny, and ambient gamma radiation sample results. The inspectors concluded that the licensee had implemented an extensive radiological sampling program to assess the radiological hazards across the site.

The licensee's study concluded that the maximum total effective dose equivalent exposure to a worker would be 53 millirem per year, primarily from inhalation of airborne particulates. The estimated maximum exposure was well below the 500 millirem per year threshold that requires occupational monitoring under 10 CFR 20.1502. Thus, the licensee was not required to monitor workers for occupational exposures, unless site conditions change significantly. Accordingly, Unresolved Item URI 040-08903/1702-01 is closed.

2.3 Conclusions

The licensee conducted site activities with an emphasis on safety. Site fences, gates, and perimeter postings were maintained by the licensee. Independent measurements of ambient radiation levels were observed to be consistent with previous NRC inspection findings. The licensee established operating procedures, but these procedures needed to be clarified and updated. The inspectors reviewed evaporation pond operations with the licensee's staff including current issues and future actions that may be taken to resolve these issues. A previously identified violation involving radon flux was left open pending the NRC review of the licensee's methodology for estimating public doses and the licensee's submittal of an exemption request to the NRC. A previously identified unresolved item involving monitoring of workers was closed based on the licensee's study to demonstrate that occupational monitoring was not required.

3 **Effluent Control and Environmental Protection (88045)**

3.1 Inspection Scope

The inspectors reviewed the licensee's effluent and environmental protection programs to ensure compliance with license and regulatory requirements.

3.2 Observations and Findings

License Condition 35 states that the licensee shall implement a groundwater compliance monitoring program to assess the performance of the groundwater restoration program. The inspectors reviewed the licensee's control and operation of various site systems used to implement the groundwater corrective action program.

The licensee continues to operate a number of extraction and injection wells. The discharge from offsite extraction wells was routed to the zeolite system for filtration of

uranium from the water, while the discharge from onsite extraction wells was routed to the reverse osmosis system. The treated water from the zeolite and reverse osmosis systems was mixed with fresh water from the San Andres aquifer in the post treatment tank and injected into the subsurface aquifers, as shown in Figure 2.1-13 from the 2017 Annual Monitoring Report/Performance Review dated March 29, 2018 (ADAMS Accessions ML18102A955 and ML18102A970).

The NRC staff reviewed the groundwater monitoring data presented in the 2018 Semi-Annual Environmental Monitoring Report for the first half of 2018 dated August 20, 2018 (ADAMS Accession ML18240A228). The inspectors noted that the licensee collected all required samples in accordance with License Condition 35 and reported the sample results in accordance with License Condition 15.

Evaporation Pond EP-3 was constructed and placed into service in 2010-2011. As described in the 2017 Annual Monitoring Report dated March 29, 2018 (ADAMS Accession ML18102A955), several chemical constituents (e.g., sulfate, total dissolved solids, and nitrate) have increased in concentration since 2010 in Monitoring Wells DD and DD2. The inspectors discussed this observation with licensee representatives, because these sample results could be indicative of pond leakage through the secondary liner. The NRC will continue to monitor the reported sample results from these wells over time, in part, to determine if the pond has developed a leak through the secondary liner. As noted earlier, the licensee tentatively plans to investigate and repair the Pond EP-3 liner at a later date, after the liner in Pond EP-1 has been replaced.

As described in Section 3.1 of the 2018 Semi-Annual Environmental Monitoring Report for the first half of 2018, the zeolite systems operated at an average flow rate of 261 gallons per minute (gpm), and the reverse osmosis systems operated at an average inflow rate of 435 gpm for the first half of 2018. At the time of inspection, trains 1 and 2 of the 1,200 gpm zeolite systems were offline due to replacement of piping, which will allow each train to be regenerated independent of the other.

The inspectors noted that the licensee continued to experience problems with algae growth in the zeolite beds. The licensee noted that the use of barley bags, which was discussed in NRC inspection reports dated July 6, 2017, and May 3, 2018 (ADAMS Accessions ML17164A088 and ML18115A480, respectively), did not resolve the algae problem. The licensee noted that the periodic acidic regeneration process, used to backflush the zeolite beds, temporarily resolved the algae problem. The licensee was working on refinement of the regeneration process to increase the operating capacity between regeneration cycles. The licensee also completed the placement of zeolite cobbles on top of the 1,200 gpm zeolite system beds, which should limit wind-blown scour of the zeolitic material.

During the previous NRC inspection, the licensee discussed that the reverse osmosis system was operating at a reduced capacity due to pressure excursions in the microfiltration system located upstream of the reverse osmosis units. The pressure excursions were caused by higher turbidity levels coming out of the clarifiers. At the time of this inspection, membranes for Units 2 and 3 had been replaced. The membranes for Unit 1 were scheduled to be replaced in the near future.

The licensee was also planning to implement a pilot study, which will include injection of a polymer to help promote flocculation of the water prior to entering the reverse osmosis

units. The polymer is expected to reduce the turbidity of the water, which will help protect the membranes from fouling. The licensee explained that the polymer should be removed primarily in the clarifier; otherwise, the microfiltration and reverse osmosis membranes will remove any residual polymer prior to reinjection of the remediated water into the groundwater aquifers.

By letter dated April 26, 2018 (ADAMS Accession ML18128A282), the licensee notified the NRC of unplanned releases in accordance with the requirements of 10 CFR 40.60(b)(2) and License Condition 41. By letter dated May 16, 2018 (ADAMS Accession ML18192C008), the licensee retracted the 10 CFR 40.60 notification because the unplanned releases were only reportable under License Condition 41. The unplanned releases involve the re-injection of water into groundwater aquifers with concentrations of uranium and molybdenum above the groundwater protection standards, as specified in License Condition 35.B.

By letter dated June 4, 2018 (ADAMS Accession ML18159A037), the licensee submitted a technical report titled, "Analysis of the Impact of the March and April 2018 Exceedance of Groundwater Protection Standards in Injection Water." The licensee discussed a series of measures to mitigate exceedances at Sample Point SP2 in the future. One cause involved the effectiveness of the reverse osmosis system membranes. As discussed earlier, the licensee was in the process of replacing the membranes in the reverse osmosis units. A second cause involved inadequate preservation of the membranes during long-term shutdowns.

The licensee revised the applicable procedure to change the preservation methodology. In addition, the licensee started taking daily conductivity measurements and weekly measurements using a kinetic phosphorescence analyzer to detect uranium and a Hach meter to monitor molybdenum concentrations. Lastly, the licensee started reviewing preliminary laboratory results to more promptly identify any potential exceedances.

The NRC inspectors concluded that the exceedances described above were a violation of License Condition 35.B requirements (non-cited violation (NCV) 040-08903/1802-01). However, the licensee identified and reported the exceedances to the NRC, and the licensee took corrective actions to prevent recurrence of the violation. Thus, this violation was characterized as a NCV in accordance with paragraph 2.3.2.b of the NRC's Enforcement Policy.

The NRC staff is currently reviewing the licensee's groundwater monitoring plan and zeolite water treatment system license amendment requests submitted to the NRC on November 20 (ADAMS Accession ML18018A102) and December 11, 2017 (ADAMS Accession ML17361A007), respectively. The licensee submitted clarifying information for the zeolite system application by letter dated February 22, 2018 (ADAMS Accession ML18066A583). The NRC submitted a request for additional information on the groundwater monitoring plan license amendment request on September 17, 2018 (ADAMS Accession ML18260A231). The NRC's conclusions about these submittals will be presented to the licensee under separate correspondence.

Finally, the licensee notified the NRC by letter dated May 17, 2017 (ADAMS Accession ML17145A307), that it had discontinued the tripolyphosphate injection pilot testing program. During the inspection, the inspectors confirmed that the licensee had discontinued the tripolyphosphate pilot program. The NRC staff is currently conducting a

technical review of the tripolyphosphate pilot study to determine if there will be any long-term impacts to groundwater remediation. The results of the NRC's review will be presented to the licensee under separate correspondence.

3.3 Conclusions

The licensee continued to implement an extensive groundwater corrective action program in accordance with license requirements, with one exception. The licensee reinjected water into groundwater aquifers with concentrations of uranium and molybdenum that exceeded the groundwater protection standards as specified in the license. The licensee identified and reported the exceedances to the NRC, and the licensee took corrective actions to prevent recurrence of the exceedances. These exceedances were identified as a non-cited violation of license requirements.

4 **Closeout Inspection and Survey (83890)**

4.1 Inspection Scope

The purpose of this portion of the inspection was to ensure that final surveys have been performed in accordance with license and procedural requirements and to verify that the site has been decontaminated to acceptable radiological levels for unrestricted use.

4.2 Observations and Findings

The licensee previously implemented a land application program from 2000-2012 by irrigating four areas with water containing slightly elevated selenium and uranium concentrations. The four areas included Sections 28 and 33 center pivots; and Sections 33 and 34 flood area. In accordance with Condition 14 of the Confirmatory Order dated March 28, 2017 (ADAMS Accession Package ML17060A752), the licensee submitted a land application impact assessment report to the NRC by letter dated September 25, 2017 (ADAMS Accession ML17270A066). This report documented the impacts of the former land application program on the public and the environment. By memorandum dated June 16, 2017 (ADAMS Accession ML17328A507), the licensee provided verification that they were not using the former irrigation areas to produce crops for human consumption.

The licensee submitted a proposed final status survey plan to the NRC by letter dated November 14, 2017 (ADAMS Accessions ML17340A406 and ML17321A085), for release of the four former land application areas. The data obtained during the final status survey was intended to augment the existing soil data presented in the land application impact assessment report. The licensee conducted the final status survey between December 2017 and April 2018. The licensee subsequently submitted the final status survey report to the NRC by letter dated July 2, 2018 (ADAMS Accessions ML18186A567 and ML18186A568).

The final status survey included walk-over gamma scans and surface soil sampling. The survey identified one area in the Section 28 pivot irrigation area that required additional remediation. After remediation, the area was resurveyed. The licensee's final status survey report concluded that each of the four areas met the criteria for release for unrestricted use.

The NRC issued a request for additional information to the licensee by letter dated August 17, 2018 (ADAMS Accession ML18205A460). In particular, the NRC requested more information about the status of the irrigation pivot equipment and piping used to support land application activities. The licensee had not formally replied to the NRC's request by the end of the onsite inspection. In addition, the NRC was still reviewing the licensee's three land application submittals. The NRC's final decision about the land application submittals will be presented to the licensee under separate correspondence at a later date.

During the onsite inspection, representatives from Oak Ridge Institute for Science and Education conducted a confirmatory survey of the four land application areas on behalf of the NRC. The confirmatory survey consisted of walk-over gamma scans and soil sampling in 41 different locations across the four areas. The survey was conducted in accordance with the NRC-reviewed confirmatory survey plan dated August 22, 2018 (ADAMS Accession ML18292A666). The preliminary survey results indicated that the gamma radiation levels were generally consistent with background levels. At the conclusion of the confirmatory survey, soil samples were submitted to the Oak Ridge Associated Universities radiological laboratory for analysis. The results of the soil samples will be available in several weeks. The confirmatory survey results will be presented to the licensee under separate correspondence at a later date.

4.3 Conclusions

As required by the Confirmatory Order, the licensee submitted a land application impact assessment report, final status survey plan, and final status survey report to the NRC for four properties previously used for land application irrigation. The licensee's final status survey report concluded that the four properties met the criteria for release for unrestricted use. The NRC elected to conduct a confirmatory survey of the four areas. The confirmatory survey results were not available at the end of the onsite inspection.

5 Follow up of Confirmatory Action Letters or Orders (92703)

5.1 Inspection Scope

On March 28, 2017, the licensee agreed to, and was issued, Order EA-16-114 (ADAMS Accession Package ML17060A752) as a result of alternative dispute resolution mediation. Section V of the Order includes 16 conditions with actions the licensee is required to implement. Provided below is a summary of the status of the 16 conditions.

5.2 Observations and Findings

a. Condition 1

Condition 1 requires, in part, that the licensee submit its root-cause protocol (RCP) to an independent third party consultant with expertise in root-cause analysis (RCA) and provide a copy of the independent third party reviewed analysis protocol to the NRC within 120 days of issuance of the Order. The RCP submitted to the NRC will identify any changes made by the independent third party reviewer and include a qualification statement for the third party reviewer. This protocol will be used to complete Conditions 2, 3, and 4 of the Order.

On July 26, 2017, the licensee submitted a RCP containing edits from an independent third party consultant, and a qualification statement from the consultant (ADAMS Accession ML17212A026). The NRC acknowledged receipt of the RCP by letter dated August 1, 2017 (ADAMS Accession ML17213A291). The licensee and its third party consultant stated that they will utilize the “Five Whys Method” to determine the underlying factor or condition contributing to a non-compliance or other identified problem. During the September 2017 inspection, documented in NRC Inspection Report 040-08903/2017-002 dated December 20, 2017 (ADAMS Accession ML17353A414), the inspectors determined that using the “Five Whys Method” was adequate for use as the RCP. The requirement under Condition 1 of the Order to submit the RCP is considered to be satisfied.

Conditions 2, 3, and 4 of the Order have not been completed in-full by the licensee; therefore, verification of the use of the RCP for these conditions remains open.

b. Condition 2

Condition 2 requires, in part, that within 30 days of submitting the RCP to the NRC, the licensee will use the RCP to analyze the reasons for the five apparent violations documented in the NRC’s October 4, 2016, letter (ADAMS Accession ML16251A526). In addition, the licensee will submit any proposed corrective actions to the NRC for review and approval within 60 days of completing the RCA.

The licensee requested an extension in submission of the RCA of the five apparent violations by letter dated August 23, 2017 (ADAMS Accession ML17237C046). The NRC granted approval to extend the submittal due date to September 15, 2017, by email dated August 24, 2017 (ADAMS Accession ML17243A234). The NRC subsequently provided a formal approval of the extension request by letter dated October 19, 2017 (ADAMS Accession ML17241A299). The October 19, 2017, letter also acknowledged receipt of the licensee’s September 15, 2017, RCA of the five apparent violations (ADAMS Accession ML17263A125). The licensee concluded that the common root cause for each of the five apparent violations was lack of communication by licensee management to other licensee staff and corporate managers, and a lack of understanding of regulatory compliance by licensee’s management.

The licensee submitted the corrective action plan for the five apparent violations to the NRC by letter dated November 14, 2017 (ADAMS Accession Package ML17320A118). The licensee also provided an update for the corrective action plan by letter dated July 17, 2018 (ADAMS Accession ML18200A068). Condition 2 of the Order will remain open until the NRC has reviewed and approved the licensee’s proposed corrective actions.

c. Condition 3

Condition 3 of the Order requires, in part, the licensee to complete an assessment of all activities to determine whether the activities are authorized and are being conducted in compliance with NRC requirements. By letter dated November 17, 2017 (ADAMS Accession ML17325B023), the licensee requested an extension until September 3, 2018, for the submittal of the self-assessment. The NRC granted the extension request by letter dated December 26, 2017 (ADAMS Accession ML17340B340). By letter dated August 31, 2018 (ADAMS Accession ML18248A265), the licensee submitted its self-

assessment to the NRC. Condition 3 of the Order will remain open until the NRC has reviewed the licensee's self-assessment and has determined that it includes the required information.

d. Condition 4

Condition 4 of the Order requires, in part, the licensee to engage an independent third party consultant to review and evaluate the self-assessment as described in Condition 3 of the Order. Condition 4a states that the licensee must submit the name and qualifications of the consultant for NRC approval within 30 days of issuance of the Order; Condition 4b requires the licensee to provide the consultant a copy of the self-assessment within 120 days of the self-assessment; and Condition 4c requires the licensee to provide the consultant's review of the self-assessment within 120 days of when the consultant received it for review. Condition 4d also states that the NRC will perform an audit of the assessment and the consultant's report. The licensee will be required to incorporate any NRC audit findings. Finally, Condition 4e states that the licensee will maintain copies of all reports at the site for NRC inspection.

The licensee submitted correspondence dated April 14, 18, and 24, 2017, to provide the names and qualifications of the third party consultant for NRC approval (ADAMS Accessions ML17108A258, ML17110A207, and ML17115A424). The NRC approved the consultants by correspondence dated April 19 and May 3, 2017 (ADAMS Accessions ML17114A106 and ML17138A303). The inspectors verified that Condition 4a has been satisfied and is considered complete.

By letter dated August 31, 2018 (ADAMS Accessions ML18248A259 and ML18248A260), the licensee submitted its self-assessment for NRC review. This satisfies Conditions 4b and 4c; however, Condition 4d will remain open and cannot be completed until the self-assessment has been audited by the NRC. The licensee continued to maintain copies of the reports at the site for NRC review in accordance with Condition 4e.

e. Condition 5

Condition 5 of the Order requires, in part, that any changes or additions to the license or procedures resulting from this Order will be submitted to the NRC as a license amendment request for NRC approval or an update to the appropriate licensee procedure after notification of the NRC. All license amendment requests will be submitted to the NRC within 60 days of receiving the results of the NRC's audit.

The licensee has not submitted any license amendment requests or notified the NRC of any proposed updates to the procedures beyond the updated procedures directly required by the Order. During the inspection, the licensee stated that an extension to the above stated due date might be necessary. Condition 5 of the Order remains open.

f. Condition 6

Condition 6 of the Order requires, in part, the licensee to submit a revised groundwater corrective action program to the NRC by the end of calendar year 2018, including amendments to the license approved by that date. The licensee's November 17, 2017, letter (see Condition 3 above) expressed uncertainty in meeting the current due date of

December 31, 2018, for submission of the revised corrective action program due to the extended time frame needed to complete the self-assessment discussed in Condition 3 of the Order. Condition 6 remains open and cannot be completed until the revised groundwater corrective action program is submitted to the NRC. The NRC will review any future extension requests and respond accordingly.

g. Condition 7

Condition 7 of the Order requires, in part, that the licensee conduct initial and annual refresher training for all individuals (employees and vendors, commensurate with their duties) engaged in licensed activities. Section (a) of this condition required initial and annual training to address awareness and understanding of regulatory and license requirements, including but not limited to informing licensee employees of the jurisdiction of the NRC, the U.S. Environmental Protection Agency, and the New Mexico Environment Department over the Grants Reclamation Project site. Section (b) of this condition required that the licensee must maintain documentation for each training session conducted, which will include a summary of the contents of the training and individual attendance.

The inspectors reviewed several training documents during the September 2017 inspection, documented in NRC Inspection Report 040-08903/2017-002 dated December 20, 2017 (ADAMS Accession ML17353A414), including the radiation safety training for the contractors working on the zeolite embankments. In addition, inspectors reviewed the training presented to the radiation safety technicians. The inspectors found the training and documentation to be adequate. The NRC also reviewed the training program during the March 2018 inspection, documented in NRC Inspection Report 040-08903/2018-001 dated May 3, 2018 (ADAMS Accession ML18115A480). Condition 7 of the Order is an on-going requirement and will continue to be evaluated during future NRC inspections.

h. Condition 8

Condition 8 of the Order requires, in part, the licensee to use the mass balance methodology described in the revised 2012 groundwater corrective action program submittal to complete an analysis of the re-injection system's impact to the time estimate for completion of the groundwater corrective action program. The analysis was to be completed within 120 days of issuance of the Order, and the licensee was required to discuss the methodology, data, and analysis with the NRC, no less than 30 days prior to its finalization of the re-injection analysis.

The licensee and the NRC discussed the methodology, data, and analysis during a teleconference on June 26, 2017, and during a follow-up teleconference on June 27, 2017. Notes summarizing the discussions during the teleconferences on June 26 and 27, 2017, as well as the licensee's presentations are publicly available (ADAMS Accession ML17352B067).

The licensee submitted the impact analysis for the re-injection system by letter dated July 26, 2017 (ADAMS Accession Package ML17212A010). The NRC acknowledged receipt of the impact analyses for the re-injection program by letter dated August 1, 2017 (ADAMS Accession ML17213A291). The NRC is currently performing a review of the licensee's submitted analysis, and the NRC will provide the review findings to the

licensee once they are completed. Condition 8 of the Order remains open and may be closed once the licensee incorporates NRC's comments into the analysis.

i. Condition 9

Condition 9 of the Order requires, in part, that within 30 days from issuance of the Order, the licensee will perform adjustments to the operations of the reverse osmosis plant to ensure compliance with the groundwater protection standards. The licensee was also required to evaluate the procedure required by License Condition 23 to ensure the process is adequate to reduce constituent concentrations to values below the groundwater protection standards listed in License Condition 35.B before discharge.

The licensee notified the NRC by letter dated April 27, 2017 (ADAMS Accession ML17121A311), that adjustments were made to the treatment system to better ensure license compliance. The letter further states that the requirements prescribed by License Condition 23 were evaluated during the development of the adjustment, and the adjustment was determined to be effective at the reverse osmosis plant by increasing the fresh water used for blending. The inspectors reviewed the revised procedure and determined that the operational adjustments made at the reverse osmosis plant were adequate for reducing effluent discharge to below the groundwater protection standards. The requirement under Condition 9 of the Order to perform adjustments to the operations of the reverse osmosis plant and evaluate the procedure required by License Condition 23 has been satisfied.

j. Condition 10

Condition 10 of the Order requires, in part, an analysis by the licensee using the methodology described in NUREG-1620, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978," to determine the impact of exceedances discharged from the reverse osmosis plant as documented in the NRC's October 4, 2016, letter (ADAMS Accession ML16251A526). The analysis was to be completed within 120 days of issuance of the Order, and the licensee was required to discuss the methodology, data, and analysis with the NRC, no less than 30 days prior to its finalization of the re-injection analysis. The NRC will then perform an audit of the analysis, and provide the licensee with the audit results, including any recommended changes. The licensee will incorporate NRC audit results as described in Condition 5 of this section.

The licensee and the NRC discussed the methodology, data, and analysis with the NRC during a teleconference on June 26, 2017, and during a follow-on teleconference on June 27, 2017. Notes summarizing the discussions during the teleconferences on June 26 and 27, 2017, as well as the licensee's presentations are publicly available (ADAMS Accession ML17352B067). The NRC acknowledged receipt of the impact analyses for the exceedances at the reverse osmosis plant by letter dated August 1, 2017 (ADAMS Accession ML17213A291). The NRC is currently performing a review of the analysis and will provide the review results in writing once completed. Condition 10 of the Order remains open and may be closed once the licensee incorporates NRC's review results into the analysis.

k. Condition 11

Condition 11 of the Order directly modified License Condition 35.C when the Order was issued on March 28, 2017. Condition 11 of the Order is considered to be satisfied.

l. Condition 12

Condition 12 of the Order requires, in part, that the licensee develop written procedures to ensure that monthly composite samples are obtained from Sampling Point 2 (SP2), and to ensure that results of those monthly composite samples are reported in the semi-annual and annual reports as required by License Conditions 15 and 42. The licensee was required to submit these procedures to the NRC within 120 days of issuance of the Order.

Written procedures for monthly sampling of Sampling Point SP2 were submitted to the NRC by letter dated July 26, 2017 (ADAMS Accession ML17212A025).

The inspectors previously reviewed the revised procedure and determined that it was adequate to ensure that monthly composite samples are obtained from Sample Point SP2. Further, the inspectors noted that the results of the monthly samples were reported in the most recent semi-annual report dated August 20, 2018 (ADAMS Accession ML18240A228). Condition 12 of the Order is considered to be satisfied.

m. Condition 13

Condition 13 of the Order directly modified License Condition 15 when the Order was issued on March 28, 2017. The modification provides clarifying language for when the semi-annual effluent and environmental monitoring reports are due. Condition 13 of the Order is considered to be satisfied.

n. Condition 14

Condition 14 of the Order requires, in part, that the licensee identify sources of supply water, soil and groundwater data, and associated reports, and use those data to develop a land application assessment of any impacts due to the use of the irrigation water containing byproduct material to past, current, or foreseeable future uses of the land application areas.

The land application assessment will establish background concentrations, remedial action levels (radiological dose and non-radiological risk), and current concentrations of the contaminants of concern in its license at all areas used for land application. The land application assessment will also identify and assess impacts from soil pore water data at the land application areas. Additionally, the licensee was required to take immediate action to ensure that the land application areas are not being used to produce crops for human consumption. The land application assessment was required to be submitted within 180 days of issuance of this Confirmatory Order.

As described in Section 4.2 of this inspection report, the licensee submitted the land application assessment to the NRC by letter dated September 25, 2017 (ADAMS Accession ML17270A066). By memorandum dated June 16, 2017 (ADAMS Accession ML17328A507), the licensee provided verification that they were not using the former irrigation areas to produce crops for human consumption. A proposed final

status survey plan for release of the former land application areas was submitted by letter dated November 14, 2017 (ADAMS Accession ML17340A406). The data obtained for the final status survey was intended to augment the existing soil data within the land application impact assessment that was submitted on September 25, 2017. The licensee subsequently submitted the final status survey report, documenting the results of the final status survey, to the NRC by letter dated July 2, 2018 (ADAMS Accessions ML18186A567 and ML18186A568). However, the NRC issued a request for additional information by letter dated August 17, 2018 (ADAMS Accession ML18205A460), in part, to ask the licensee about the radiological status of the piping and equipment used to support the irrigation activities.

Condition 14 of the Order remains open pending NRC review and acceptance of the licensee's submittals, the results of the final status survey, and the results of the NRC's confirmatory survey.

o. Condition 15

Condition 15 of the Order requires, in part, that if the results of the analysis discussed in Condition 14 of the Order indicate that radiological doses and non-radiological risks are in excess of the NRC-approved remedial action levels, the licensee will propose appropriate measures to control both use and access to the impacted areas, a corrective action plan if necessary to achieve the NRC-approved remedial action levels, and final status survey plans to demonstrate that the radiological doses and non-radiological risks are below NRC-approved remedial action levels.

Condition 15 of the Order remains open pending NRC review and acceptance of the licensee's submittals, the results of the final status survey, and the results of the confirmatory survey of the land application areas.

p. Condition 16

Condition 16 of the Order requires the licensee to provide an integrated table that sets forth all actions taken pursuant to the Order. An updated integrated table will be provided semi-annually, until all license and procedure changes under the Order are completed.

The most recent integrated table was submitted to the NRC by letter dated September 28, 2018 (ADAMS Accession ML18275A120). Condition 16 of the Order will remain open until all license and procedure changes under the Order are completed.

5.3 Conclusions

Confirmatory Order EA-16-114 Conditions 1, 9, and 11-13 have been evaluated and are determined to be satisfied. Confirmatory Order Conditions 2-8, 10, and 14-16 remain open with pending actions and will continue to be evaluated by the NRC.

6 Exit Meeting Summary

The inspectors presented the inspection results to the licensee's representatives at the conclusion of the onsite inspection on September 12, 2018. The final inspection results were presented to the Closure Manager by telephone on October 19, 2018, after the NRC completed its enforcement review of the inspection findings. During the inspection, the licensee did not identify any information reviewed by the inspectors as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

W. Archuleta, Senior Shift Supervisor, Homestake Mining Co.
A. Arguello, Senior Hydrogeologist, Homestake Mining Co.
B. Bingham, Compliance Officer, Homestake Mining Co.
C. Burton, Director Closure Operations, Homestake Mining Co.
C. Farr, Alternate Radiation Safety Officer, ERG
G. Hoffman, Hydrogeologist, Hydro-Engineering
R. Whicker, Radiation Safety Officer, ERG
T. Wohlford, Closure Manager, Homestake Mining Co.
T. Wright, Acting Compliance Officer, Wright Environmental

INSPECTION PROCEDURES (IPs) USED

IP 88005	Management Organization and Controls
IP 88035	Radioactive Waste Processing, Handling, Storage, and Transportation
IP 88045	Effluent Control and Environmental Protection
IP 83890	Closeout Inspection and Survey
IP 92703	Follow up of Confirmatory Action Letters or Orders

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

040-08903/1802-01	NCV	Exceedances of groundwater protection standards [License Condition 35.B]
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Closed

040-08903/1701-03	VIO	Failure to administer cultural resource inventory before engaging in any developmental activity not previously assessed [License Condition 43].
040-08903/1702-01	URI	Compliance with 10 CFR Part 20 Requirements for internal occupational dose monitoring [10 CFR 20.1502(b)(1)]
040-08903/1802-01	NCV	Exceedances of groundwater protection standards [License Condition 35.B]

Discussed

040-08903/1601-01	VIO	Exceedance of radon flux limit from large tailings pile [License Condition 36.E and 10 CFR Part 40, Appendix A, Criterion 6]
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LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	<i>Code of Federal Regulations</i>
gpm	gallons per minute
IP	Inspection Procedure
μR/hr	microRoentgen per hour
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
RCA	root-cause analysis
RCP	root-cause protocol
SERP	Safety and Environmental Review Panel
URI	Unresolved Item
VIO	Violation

HOMESTAKE MINING COMPANY INSPECTION REPORT 040-08903/2018-002 - DATED
NOVEMBER 21, 2018

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SUNSI Review ADAMS: Non-Publicly Available Non-Sensitive Keyword:
 By: RJE Yes No Publicly Available Sensitive NRC-002

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