

June 24, 1998

Mr. Roy Cellan  
Homestake Mining Company  
P.O. Box 98  
Grants, New Mexico 87020

SUBJECT: AMENDMENT NO. 31 TO REVISE LICENSE CONDITIONS 14, 15, 35, AND 39

The U. S. Nuclear Regulatory Commission staff has completed its review of Homestake Mining Company's (HMC's) January 23, 1998, request to revise license conditions related to decontamination of equipment and personnel, reporting requirements, and evaporation ponds. The staff has determined that the amendment request is acceptable, as discussed in the Technical Evaluation Report (TER), which is Enclosure 1.

Therefore, pursuant to Title 10 of the Code of Federal Regulations (10 CFR), Part 40, Source Material License SUA-1471 is hereby amended by revising License Conditions No. 14, 15, 35, and 39, as discussed in the TER. All other conditions of this license shall remain the same. The license is being reissued to incorporate the revised license conditions (Enclosure 2).

An environmental report is not required from HMC, since the amendment does not meet the criteria of 10 CFR 51.60(b)(2), in that there will be no significant change in the types, or increases in the amounts, of effluents released. For the same reasons, an NRC staff environmental assessment is not required since this action is categorically excluded under 10 CFR 51.22(c)(11).

If you have any questions regarding this letter or the enclosures, please contact the NRC Project Manager for the HMC site, Ken Hooks, at (301) 415-7777.

Sincerely,

[D. Gillen for]

Joseph J. Holonich, Chief  
Uranium Recovery Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 40-8903  
License No.: SUA-1471  
Amendment No. 31

Enclosures: As stated  
cc: R. Edge, DOE Grand Junction  
M. Hanning, NMED, Santa Fe  
G. Lyssy, EPA Region 6, Dallas  
Case Closed: L51616

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DOCUMENT NAME: S:DWM\URB\IKRHHMC31.WPD

OFC	URB	E	URB	E	URB				
NAME	KHooks	VP	DGillen		JHolonich				
DATE	06/18/98	H	06/24/98	H	06/24/98				



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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An environmental report is not required from HMC, since the amendment does not meet the criteria of 10 CFR 51.60(b)(2), in that there will be no significant change in the types, or increases in the amounts, of effluents released. For the same reasons, an NRC staff environmental assessment is not required since this action is categorically excluded under 10 CFR 51.22(c)(11).

If you have any questions regarding this letter or the enclosures, please contact the NRC Project Manager for the HMC site, Ken Hooks, at (301) 415-7777.

Sincerely,

A handwritten signature in black ink, appearing to read "J. J. Holonich".

Joseph J. Holonich, Chief  
Uranium Recovery Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 40-8903  
License No.: SUA-1471  
Amendment No. 31

Enclosures: As stated

cc: R. Edge, DOE Grand Junction  
M. Hanning, NMED, Santa Fe  
G. Lyssy, EPA Region 6, Dallas

## TECHNICAL EVALUATION REPORT

DATE: May 27, 1998

DOCKET NO. 40-8903

LICENSE NO. SUA-1471

LICENSEE: Homestake Mining Company

FACILITY: Grants Uranium Mill Site

PROJECT MANAGER: Kenneth Hooks

TECHNICAL REVIEWER: Jane Marshall

### SUMMARY AND CONCLUSIONS:

Homestake Mining Company (HMC) requested, by letter to the U.S. Nuclear Regulatory Commission (NRC) dated January 23, 1998, revisions to existing license conditions (LC's) related to decontamination of equipment and personnel (LC #14), reporting requirements (LC#15), and groundwater corrective action evaporation ponds (LC's #35 and 39). The request was revised by telephone conversations between Jane Marshall and Ken Hooks of the NRC and Roy Cellan of HMC on March 2 and April 17, 1998, and an HMC letter dated May 21, 1998.

NRC staff review determined that none of the requested changes will alter the health and safety protection of the site or the regulatory basis of the license, and has determined to approve the amendments as described in detail below.

### DESCRIPTION OF LICENSEE'S AMENDMENT REQUEST:

Homestake Mining Company requested several changes in their license as follows:

LC #15, which states effluent reporting requirements under 10CFR 40.65, references the groundwater data report requirements in LC # 35 which has led to some confusion. The regulatory guidance specifies that Uranium groundwater data be reported in  $\mu\text{Ci/ml}$ , while the license standards are set in mg/liter. It is prudent from a regulatory standpoint to require monitoring data in the units that were originally used to set background for the site. The licensee has requested that the reporting requirements in the license follow the site standards set in the license. Specifically, in their current situation, Homestake must reach compliance standards in one set of units, and report in the units specified in Regulatory Guide 4.14. This creates difficulty for HMC in preparing reports and for HMC and the NRC in interpreting those reports when compared with LC #35. Maintaining a single set of units for each constituent simplifies comparison among all the site data.

Homestake has rescinded its request to move the submittal date for the groundwater monitoring report, as the 40.65 report date cannot be changed. HMC submits the reports as one document and does not wish to prepare two reports.

HMC requested that LC #14, concerning decontamination, be revised to reference its Standard Operating Procedures (SOP's), to preclude further misunderstandings with NRC inspectors.

HMC also requested that LC #35 be modified to delete various references to superseded HMC submittals, and specifically LC #35D, which regulates the operation of Evaporation Pond #1, be modified by adding the operation of Evaporation Pond #2. LC #35D covers the operation of evaporation ponds; LC #39 covers the construction of Evaporation Pond #2. This change will allow deletion of LC#39, which is now obsolete, as Evaporation Pond #2 has been constructed.

#### **TECHNICAL EVALUATION:**

This proposal will enable Homestake Mining Company to clear its license of some obsolete conditions, clarify LC #14, and present groundwater monitoring results in the same format as the site background standards.

HMC has reconsidered its request to change LC #14 to reference its SOP's, as this action would require NRC review and approval of the SOP's. As indicated in the HMC letter of May 21, 1998, HMC now wishes to revert to the language of LC #14 prior to Amendment No. 21, dated May 5, 1995. This would require release of equipment in accordance with NRC guidance. The NRC staff agrees that this change should clarify the decontamination requirements which are subject to NRC onsite inspection.

The modifications to LC #15 will remove the reference to LC #35, and preclude future confusion concerning reporting requirements.

License Condition #35 contains several aspects of the groundwater corrective action plan, including reporting requirements. The changes to LC #35 will clarify the groundwater monitoring and reporting requirements. References to superseded submittals will be removed from LC #35A. License Condition #35B will be reworded to remove the location of the Point of Compliance (POC) wells, leaving the well names only. This will not present any change in the monitoring or designation of the POC wells.

LC #35D will be amended to include operation of Evaporation Pond #2, allowing for deletion of LC #39. LC #39 authorized construction of Evaporation Pond #2, which is now complete, making the license condition obsolete. LC #35D pertains to the operation of Evaporation Pond #1, which is identical to the operation of Evaporation Pond #2. There will be no change in operating practices for the evaporation ponds.

As none of the requested changes represent a change in operation of the site from any technical standpoint, the NRC staff finds the changes acceptable.

#### **RECOMMENDED LICENSE CHANGES:**

License Condition #14 will be changed to read:

Release of equipment or packages from the restricted area shall be in accordance

with the attachment to SUA-1471 entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials," dated September 1984.

License Condition #15 will be reworded to read:

The results of all effluent and environmental monitoring required by this license shall be reported in accordance with 10 CFR 40, Section 40.65, with copies of the report sent to the NRC. Monitoring data shall be reported in the format shown in the attachment to SUA-1471 entitled, "Sample Format for Reporting Monitoring Data." For purposes of 10 CFR 40.65 reporting requirements, only groundwater radionuclide data from the point of compliance wells and background well P shall be reported.

License Condition #35 will be changed to read:

The licensee shall implement a groundwater compliance monitoring program to assess the performance of the groundwater restoration program. This program is separate from the requirements in License Condition #15. The Licensee shall:

A. Implement the groundwater monitoring program shown in groundwater monitoring program Table 2 as revised by the licensee's August 25, 1997 submittal.

B. Comply with the following groundwater protection standards at the point of compliance wells D1, BP, X, S4, S3, M5, and DQ with background being recognized in well P.

chromium = 0.06 mg/l, molybdenum = 0.03 mg/l, selenium = 0.10 mg/l, vanadium = 0.02 mg/l, uranium = 0.04 mg/l, radium-226 and -228 = 5.0 pCi/l, and thorium-230 = 0.30 pCi/l.

C. Implement the corrective action program described in the September 15, 1989 submittal, due to exceeding the groundwater protection standards, and as modified by the reverse osmosis system described in the January 15, 1998, submittal with the objective of returning the concentrations of molybdenum, selenium, thorium-230, uranium, and vanadium to the site standards as listed in LC 35B. In addition, the reverse osmosis system will include the addition of Sample Point 2 downstream of the Mixing Tank. Composite samples from Sample Point 2 will be taken weekly for the first month, monthly for the rest of the first year, then quarterly thereafter and analyzed for U and Mo. The Sample Point 2 decrease in sampling is dependent on demonstrating acceptable levels of constituents before decreasing sampling frequency.

D. Operate the two lined evaporation ponds, Pond #1 and Pond #2, and enhanced evaporation systems located in each pond as described in the June 8 and 28, 1990; and July 26, August 16, August 19, September 2 and 15, 1994 submittals.

E. Submit by March 31 of each year, a performance review of the corrective action program that details the progress towards attaining groundwater protection standards.

License Condition #39 will be deleted.

The requirements for final reclamation are covered in the HMC submittals referenced in LC #35D.

#### **ENVIRONMENTAL IMPACT EVALUATION:**

An environmental assessment is not required for this licensing action, in accordance with the categorical exclusion contained in 10 CFR § 51.22 (c)(11). That paragraph states that the categorical exclusion applies to issuing license amendments for uranium mills licensed under 10 CFR § 40, provided that (1) there is no significant change in the types or significant increase in the amounts of any effluent that may be released off site, (2) there is no significant increase in individual or cumulative occupational radiation exposure, (3) there is no significant construction impact, and (4) there is no significant increase in the potential for or consequences from radiological accidents.

The licensing action discussed in this technical evaluation meets the criteria for a categorical exclusion, since the proposed amendment does not involve an expansion of the existing facility. The license amendment application does not meet the criteria of 10 CFR 51.60(b)(2), regarding environmental reports. Consequently, an environmental report is not required from the licensee for this action.

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>1. Licensee <b>Homestake Mining Company</b></p> <p>2. P.O. Box 98 Grants, New Mexico 87020</p>	<p>3. License Number <b>SUA-1471, Amendment No. 31</b></p> <p>4. Expiration Date <b>Until NRC determines site reclamation is adequate. [Applicable Amendment: 12] 40-8903</b></p> <p>5. Docket or Reference No.</p>
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<p>6. Byproduct, Source, and/or Special Nuclear Material <b>Uranium</b></p>	<p>7. Chemical and/or Physical Form <b>Any</b></p>	<p>8. Maximum Amount that Licensee May Possess at Any One Time Under This License <b>Unlimited</b></p>
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9. Authorized Place of Use: **The licensee's uranium mill located in Cibola County, New Mexico, County, New Mexico. [Applicable Amendment: 12, 29]**

10. **This license authorizes only the possession of residual uranium and byproduct material in the form of uranium waste tailings and other byproduct waste generated by the licensee's past milling operations in accordance with Tables 1 and 3 and the procedures submitted by letter dated September 2, 1993, as modified by letter dated March 7, 1996.**

Anywhere the word "will" is used, it shall denote a requirement.

[Applicable Amendments: 2, 6, 12, 16, 24]

11. **DELETED by Amendment 21.**

12. **Periodic embankment inspections of the large and small tailings embankment shall be conducted by knowledgeable individuals who are familiar with the site and mining operations. An annual status report shall be included in the Semi-Annual Environmental Report for the second half of the year.**

[Applicable Amendments: 2, 12, 14, 24]

13. **DELETED by Amendment No. 27.**

14. **Release of equipment or packages from the restricted area shall be in accordance with the attachment to SUA-1471 entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials," dated September 1984. [Applicable Amendments: 21, 31]**

15. **The results of all effluent and environmental monitoring required by this license shall be reported in accordance with 10 CFR 40, Section 40.65, with copies of the report sent to the NRC. Monitoring data shall be reported in the format shown in the attachment to SUA-1471 entitled, "Sample Format**

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for Reporting Monitoring Data." For purposes of 10 CFR 40.65 reporting requirements, only groundwater radionuclide data from the point of compliance wells and backgrounds well P shall be reported. [Applicable Amendments: 5, 31]

16. Before engaging in any activity not previously assessed by the NRC, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not previously assessed or that is greater than that previously assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval of the NRC in the form of a license amendment.
17. Prior to termination of this license, the licensee shall provide for transfer of title to byproduct material and land, including any interests therein (other than land owned by the United States or the State of New Mexico), which is used for the disposal of such byproduct material or is essential to ensure the long-term stability of such disposal site, to the United States or the State of New Mexico, at the State's option.
18. DELETED by Amendment No. 27.
19. DELETED by Amendment No. 17.
20. DELETED by Amendment No. 21.
21. The site Radiation Protection Administrator (RPA), who is responsible for conducting the site radiation safety program, shall possess the minimum qualifications as specified in Section 2.4.1 of Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As is Reasonably Achievable." [Applicable Amendment: 27]
22. The results of sampling, analyses, surveys and monitoring; the results of calibration of equipment, reports on audits and inspections; all meetings and training courses required by this license and any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in the NRC regulations, all such documentation shall be maintained for a period of at least 5 years.
23. Standard procedures shall be established for all activities involving radioactive materials that are handled, processed, or stored. Procedures shall enumerate pertinent radiation safety practices to be followed. Additionally, written procedures shall be established for environmental monitoring, bioassay analyses, and instrument calibrations. An up-to-date copy of each written procedure shall be kept in the area to which it applies.  
  
All written procedures shall be reviewed and approved in writing by the RPA before implementation and whenever a change in procedure is proposed to ensure that proper radiation protection principles are being applied. In addition, the RPA shall perform a documented review of all existing procedures at least annually.  
  
[Applicable Amendment: 27]
24. The licensee shall be required to use a Radiation Work Permit (RWP) for all work or nonroutine maintenance jobs where the potential for significant exposure to radioactive material exists and for which no standard written procedure already exists. The RWP shall be approved by the RPA or his



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designee, qualified by way of specialized radiation protection training, and shall at least describe the following:

- A. The scope of work to be performed.
- B. Any precautions necessary to reduce exposure to uranium and its daughters.
- C. The supplemental radiological monitoring and sampling necessary prior to, during, and following completion of the work.

25. DELETED by Amendment No. 21.

26. Mill tailings, other than small samples for purposes such as research or analysis, shall not be transferred from the site without specific prior approval of the NRC in the form of a license amendment. The licensee shall maintain a permanent record of all transfers made under the provisions of this condition.

27. DELETED by Amendment No. 21.

28. The licensee shall maintain an NRC-approved financial surety arrangement consistent with 10 CFR 40, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination of the mill and mill site, reclamation of tailings or waste disposal areas, ground-water restoration, and the long-term surveillance fee. Within 3 months of NRC approval of a revised reclamation plan, the licensee shall submit for NRC review and approval a proposed revision to the financial surety arrangement if estimated costs for the newly approved plan exceed the amount covered in the existing financial surety. The revised surety arrangement shall then be in effect within 3 months of written NRC approval.

Annual updates to the surety amount by 10 CFR Part 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least 3 months prior to the anniversary date, which is designated as June 30 of each year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of costs and the basis for the cost estimate. The attachment to the license entitled, "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates," outlines the minimum considerations used by the NRC in the review of site closure cost estimates.

The licensee's currently approved surety, a Parent Company Guarantee issued by Homestake Mining Company, shall be continuously maintained in an amount no less than \$24,000,000 for the purpose of complying with 10 CFR 40, Criteria 9 and 10, until a replacement is authorized by the NRC. The use of a parent company guarantee necessitates an evaluation of the corporate parent as part of the annual surety update. In addition to the cost information required above, the annual submittal must include updated documentation of the (1) letter from the chief financial officer of the parent company, (2) auditor's special report confirmation of chief financial officer's letter, (3) schedule reconciling amounts in chief financial officer's letter to amounts in financial statements, and (4) parent company guarantee if any changes are appropriate.

[Applicable Amendments: 9, 12, 23, 24, 26]

29. The licensee shall decommission the Homestake Uranium Mill in accordance with Section 2 of the

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reclamation plan dated January 1991; the licensee's August 28, 1991, response to comments 1-10 of the NRC's August 2, 1991, letter; and Technical Specifications B1 and B2 of the reclamation plan as revised on April 3, 1992. In addition, the licensee shall perform a soil cleanup verification gamma survey and soil sampling program as specified in the submittal of September 15, 1994, and as modified by the submittal of December 13, 1994. [Applicable Amendment: 20]

- A. Deleted by Amendment No. 20.
- B. Deleted by Amendment No. 20.
- C. Deleted by Amendment No. 20.
- D. The licensee shall use only soils obtained from borrow areas outside the restricted area which have not been impacted by site operations to cover the mill disposal area. The location of these borrow areas shall be documented.
- E. The licensee shall implement a quality control (QC) program for the soil cleanup verification program which consists of recounting using offsite gamma spectroscopy equipment or chemical analysis by a vendor laboratory of at least 15 percent of all soil samples collected. In addition, a minimum of 5 percent of the QC samples shall be chemically analyzed. Results of the QC program shall be evaluated by the Radiation Protection Administrator and the evaluation documented at least monthly during the verification sampling program.
- F. All decommissioning activities shall be documented. Within 90 days following the completion of mill demolition and disposal activities, the licensee shall submit to the NRC a report documenting the activities and providing summaries of all data generated as part of the radiation safety program for mill decommissioning. In addition, within 90 days following the completion of the soil cleanup and verification program, the licensee shall submit to the NRC a report documenting the cleanup activities and providing the results of all soil sampling and gamma surveys conducted to verify the adequacy of cleanup.

[Applicable Amendment: 15]

- 30. DELETED by Amendment No. 21.
- 31. DELETED by Amendment No. 27]
- 32. The licensee shall comply with the following:
  - A. DELETED by Amendment No. 27.
  - B. Analysis of urine samples shall utilize an LLD of at least 5 ug/l uranium.
  - C. A copy of the report documenting the annual ALARA audit shall be submitted to the NRC, review within 30 days of completion of the audit.

[Applicable Amendment: 2]

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- 33. DELETED by Amendment No. 21.
- 34. DELETED by Amendment No. 4.
- 35. The licensee shall implement a groundwater compliance monitoring program to assess the performance of the groundwater restoration program. This program is separate from the requirements in License Condition 15. The Licensee shall:
  - A. Implement the groundwater monitoring program shown in groundwater monitoring program Table 2 as revised by the licensee's August 25, 1997 submittal.
  - B. Comply with the following groundwater protection standards at the point of compliance wells D1, BP, X, S4, S3, M5, and DQ with background being recognized in well P.  
  
chromium = 0.06 mg/l, molybdenum = 0.03 mg/l, selenium = 0.10 mg/l, vanadium = 0.02 mg/l, uranium = 0.04 mg/l, radium-226 and -228 = 5.0 pCi/l, and thorium-230 = 0.30 pCi/l.
  - C. Implement the corrective action program described in the September 15, 1989 submittal due to exceeding the groundwater protection standards, and as modified by the reverse osmosis system described in the January 15, 1998, submittal with the objective of returning the concentrations of molybdenum, selenium, thorium-230, uranium, and vanadium to the site standards as listed in LC 35B. In addition, the reverse osmosis system will include the addition of Sample Point 2 downstream of the Mixing Tank. Composite samples from Sample Point 2 will be taken weekly for the first month, monthly for the rest of the first year, then quarterly thereafter and analyzed for U and Mo. The Sample Point 2 decrease in sampling is dependent on demonstrating acceptable levels of constituents before decreasing sampling frequency.
  - D. Operate the two lined evaporation ponds, Pond #1 and Pond #2, and enhanced evaporation systems located in each pond as described in the June 8 and 28, 1990; and July 26, August 16, August 19, September 2 and 15, 1994 submittals.
  - E. Submit by March 31 of each year, a performance review of the corrective action program that details the progress towards attaining groundwater protection standards.

[Applicable Amendments: 3, 4, 5, 7, 8, 10, 11, 16, 21, 28, 30, 31]

- 36. The licensee shall complete site reclamation in accordance with an approved reclamation plan. The ground-water corrective action plan shall be conducted as authorized by License Condition No. 35. All activities shall be completed in accordance with the following schedules.
  - A. To ensure timely compliance with target completion dates established in the Memorandum of Understanding with the Environmental Protection Agency (56 FR 55432, October 25, 1991), the licensee shall complete reclamation to control radon emissions as expeditiously as practicable, considering technological feasibility, in accordance with the following schedule:
    - (1) Windblown tailings retrieval and placement on the pile:  
  
For the Large Impoundment - December 31, 1996.

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For the Small Impoundment - May 31, 1997.

- (2) Placement of the interim cover to decrease the potential for tailings dispersal and erosion:

For the Large Impoundment - December 31, 1996.

For the Small Impoundment - May 31, 1997.

- (3) Placement of final radon barrier designed and constructed to limit radon emissions to an average flux of no more than 20 pCi/m<sup>2</sup>/s.

For the Large Impoundment which has no evaporation ponds - December 31, 2003.

For the Small Impoundment, tailings pile surface areas are essentially covered by evaporation ponds constructed as part of the ground-water corrective action program. Prior to December 31, 2012, the areas not covered by the evaporation ponds shall have final radon barrier in place. Final radon barrier placement over the entire pile shall be completed within 2 years of completion of ground-water corrective actions.

[Applicable Amendment: 25]

- B. Reclamation, to ensure required longevity of the covered tailings and ground-water protection, shall be complete as expeditiously as is reasonably achievable, in accordance with the following target dates for completion:

- (1) Placement of erosion protection as part of reclamation to comply with Criterion 6 of Appendix A of 10 CFR Part 40:

For the Large Impoundment - September 30, 2004.

For the Small Impoundment - September 30, 2013.

[Applicable Amendment: 25]

- (2) Projected completion of ground-water corrective actions to meet performance objectives specified in the ground-water corrective action plan - May 1, 2010.

- C. Any license amendment request to revise the completion dates specified in Section A must demonstrate that compliance was not technologically feasible (including inclement weather, litigation which compels delay to reclamation, or other factors beyond the control of the licensee).

- D. Any license amendment request to change the target dates in Section B above, must address added risk to the public health and safety and the environment, with due consideration to the economic costs involved and other factors justifying the request such as delays caused by inclement weather, regulatory delays, litigation, and other factor beyond the control of the licensee.

[Applicable Amendment: 13, 22]

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37. The licensee shall reclaim the large and small tailings impoundments as stated in their October 29, 1993, submittal, including the following requirements.
- A. The radon barrier for the large tailings pile shall be in accordance with material types, thicknesses and placement criteria described in Homestake Mining Company's *Final Radon Barrier Design for the Large Tailings Pile*, submitted June 16, 1995.
  - B. The radon barrier for the small tailings pile shall be constructed in accordance with material types, thicknesses, and placement criteria described in Homestake Mining Company's *Final Radon Barrier Design for the Small Tailings Pile*, transmitted to the NRC in August 1996 [Applicable Amendment: 27].
  - C. The licensee shall submit a construction quality control program for NRC review and approval prior to placing any portion of the radon barrier that will ensure that the specification which limits the activity of the radon barrier material to 5 pCi/g above background is not exceeded.
  - D. The construction quality assurance and control program shall be as defined in the Staff Technical Position On Testing and Inspection (NRC, 1989). The acceptable correlation between ASTM D 2922 and ASTM D 1556 shall be as defined in the licensee's April 30, 1992, submittal.
  - F. The radon barrier shall not be placed on the top surface of the large tailings impoundment until the settlement has been demonstrated to be at least 90 percent of expected settlement, and the results of this determination have been reviewed and accepted by the NRC. The radon barrier may be placed on the large impoundment side slopes following final grading of the impoundment. Care shall be taken to preclude the possibility of ponding. Before the erosion protection is placed, it shall be verified that the radon barrier material meets the specifications.
  - G. The adequacy of the erosion protection proposed for the side slopes of both the large and small impoundments shall be reevaluated considering any increases in impoundment heights due to the revised radon attenuation cover design.
  - H. DELETED by Amendment No. 21.
  - I. A completion report shall be provided within 6 months of the completion of construction. This report, including as-built drawings, shall verify that reclamation of the site has been performed according to the approved plan. The report shall also include summaries of results of the quality assurance and control testing to demonstrate that approved specifications were met.

[Applicable Amendments: 14, 21, 22]

38. The licensee is authorized to use water collected as part of the site ground-water corrective action program for conditioning soils during placement of the interim cover or the radon barrier on the tailings impoundments. The licensee shall also analyze samples of the collection water being used for this purpose for radium-226 and 228 content semiannually. If sample results exceed 30 pCi/l combined radium, the licensee shall perform an evaluation of the potential impacts of using this water on the required design of the radon barrier and submit the evaluation for NRC review within 30 days of receipt of sample results. [Applicable Amendment: 18]
39. DELETED by Amendment No. 31.

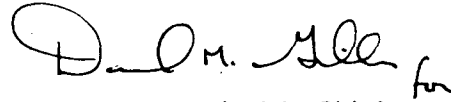
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Docket or Reference Number 40-8903

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

FOR THE NUCLEAR REGULATORY COMMISSION

Date 6/24/98



Joseph J. Holonich, Chief  
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Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards