

04008584180R

Minerals Exploration Company
A Unocal Company
Sweetwater Uranium Project
P.O. Box 1500
Rawlins, Wyoming 82301-1500
Telephone (307) 324-4924 or (307) 328-1478
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40-8584

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18 October 1991

RETURN ORIGINAL TO PDR, HQ.

DOCKETED
OCT 28 1991
USNRC
MAIL SECTION
DOCKET CLERK

Mr. Ramon E. Hall
Director
Uranium Recovery Field Office,
Region IV
USNRC
P.O. Box 25325
Denver, Colorado 80225

RE: SML #SUA-1350
Amendment Request Related to
Ion Exchange Plant Operation

Dear Mr. Hall:

Minerals Exploration Company (MEC) is requesting an amendment to its source materials license SUA-1350 to do the following:

1. Operate the ion exchange plant on site, which is covered by Condition #45 and described in a letter dated 9/27/89, in either upflow or downflow mode as required.
2. Install a small diameter (1"-2") pipeline from the mill to the tailings cell for disposal of decant fluid and other liquid process waste (wash water, etc.) from the yellowcake area of the mill. This line will be used on a batch basis and under observation of operating personnel.
3. Modify the existing setup in the yellowcake area of the mill to include a second cone bottom tank installed on the concrete deck above the roller room. This cone bottom tank will be connected via a pipe to the roller room to allow drums in the roller room to be filled with slurry.

MEC requests that you give this amendment request speedy consideration so as not to unduly delay our operations. If you have any questions, please do not hesitate to contact me.

Sincerely yours,

Oscar A. Paulson
Oscar A. Paulson
Facility Supervisor

DESIGNATED ORIGINAL

Certified By Mary C. Hood

OAP:ss
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URFO:PWM
Docket No. 40-8584
SUA-1350, Amendment No. 17
04008584180R

Minerals Exploration Company
Sweetwater Uranium Project
ATTN: Oscar Paulson
P.O. Box 1500
Rawlins, Wyoming 82301-1500

Dear Mr. Paulson:

The NRC has completed a review of your October 18, 1991, request for amendment of License Condition No. 45 of Source Material License SUA-1350. Our review indicates the requested changes are acceptable. Your proposals to (1) operate the mine water cleanup ion exchange plant in either an upflow or downflow mode as required; (2) install a small diameter (1" to 2") pipeline from the mill to the tailings cell for batch disposal of decant and other waste fluid from the yellowcake area, and (3) add a second conical tank in the yellowcake area to allow drum filling, are therefore approved.

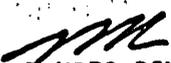
Pursuant to Title 10 of the Code of Federal Regulations, Part 40, Source Material License SUA-1350 is hereby amended by revising License Condition No. 45 to read as follows:

45. The licensee is authorized to operate an ion exchange uranium recovery operation in accordance with the submittals dated September 27, 1989, and October 18, 1991, with the exception that the frequency for radon daughter sampling shall be as specified in Section 1.3 of Regulatory Guide 8.30, "Health Physics Surveys in Uranium Mills."

All other conditions of this license shall remain the same. The license is being reissued to incorporate the above revision.


PM:URFO
PMichaud/lv
02/4/92


DO:URFO
EHaykins
02/4/92


D:URFO:RIV
REHall
02/6/92

Minerals Exploration Company

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The issuance of this amendment was discussed in a telephone conversation between yourself and Paul Michaud of my staff on February 3, 1992.

Sincerely,

Original Signed By

R. E. Hall

Ramon E. Hall
Director

Enclosure:
Source Material License SUA-1350

Case Closed: 04008584180R

cc:
J. Landreth, Mollicorp, Inc.
J. Hough, RCPD, WY
WDEQ (2)

bcc:
LFMB
PDR/DCS
URFO r/f
LJCallan, RIV
LLUR Branch, LLWM
PMichaud
8584/180R/PWM/92/02/04/L

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, 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.

Licensee

1. Minerals Exploration Company

3. License number

SUA-1350, Amendment No. 17

2. Post Office Box 1500
Rawlins, Wyoming 82301

4. Expiration date

March 1, 1991

5. Docket or Reference No.

40-8584

6. Byproduct, source, and/or special nuclear material

7. Chemical and/or physical form

8. Maximum amount that licensee may possess at any one time under this license

Natural Uranium Byproducts

Any

Unlimited

9. Authorized place of use: The licensee's uranium milling facilities located in Sweetwater County, Wyoming.

10. The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings and other byproduct wastes generated by the licensee's past milling operations. The licensee is not authorized to produce uranium concentrates without a license amendment approved by the NRC, Uranium Recovery Field Office.

11. For use in accordance with statements, representations, and conditions contained in Sections 3.3.6 and 6 of the licensee's renewal application dated as supplemented by submittals dated March 1984, April 3, July 2 and July 27, 1984 and January 17, 1985, except where superseded by license conditions below.

Whenever the word "will" is used in the above referenced sections it shall denote a requirement.

12. Any changes in the mill circuit, as illustrated and described in Figure 3-1-1A of the licensee's renewal application, shall require approval of the NRC, Uranium Recovery Field Office, in the form of a license amendment.

13. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the mill, provided that all entrances to the mill are conspicuously posted in accordance with Section 20.203(e)(2) and with the words, "Any area within this mill may contain radioactive material."

14. 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,

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investigations, and corrective actions, shall be documented. Unless otherwise specified in NRC regulations, all such documentation shall be maintained for a period of at least five (5) years.

15. The licensee shall maintain effluent control systems as specified in Section 4.1.3 of the licensee's renewal application with the following additions:
 - A. Operations shall be immediately suspended in the affected area of the mill if any of the emission control equipment for the yellowcake drying or packaging areas is not operating within specifications for design performance.
 - B. The licensee shall during all periods of yellowcake drying operations, assure that the scrubber is operating within the manufacturer's recommended ranges for water flow and air pressure differential necessary to achieve design performance. This shall be accomplished by either (1) performing and documenting checks of water flow and air pressure differential every four hours during operation or (2) installing instrumentation which will signal an audible alarm if either water flow or air pressure differential fall below the manufacturer's recommended levels. If an audible alarm is used, its operation shall be checked and documented daily.
 - C. Air pressure differential gauges for other emission control equipment shall be read and the readings documented once per shift during operations.
16. All liquid effluents from mill process buildings, with the exception of sanitary wastes, shall be returned to the mill circuit or discharged to the tailings impoundment.
17. Release of equipment or packages from the restricted area shall be in accordance with the attachment to SUA-1350 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.
18. Mill tailings other than samples for research shall not be transferred from the site without specific prior approval of the NRC, Uranium Recovery Field Office, in the form of a license amendment. The licensee shall maintain a permanent record of all transfers made under the provisions of this condition.
19. The licensee shall have in operation, prior to resuming operations, instrumentation to detect ruptures of the tailings discharge and solution return lines when these lines are being utilized. Indications of a possible rupture of these lines shall result in activation of an alarm in an occupied area of the mill. The instrumentation shall be tested daily, and testing documented, to ensure proper operation.

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20. During operations the licensee shall conduct and document at least one inspection of the tailings embankment per day and shall immediately notify the NRC, Uranium Recovery Field Office, by telephone and telegraph of any failure in the dam retention system or tailings discharge system which results in a release of radioactive material. During the period of mill shutdown the licensee shall not add tailings or other solid wastes to the tailings pond cell "C" without the approval of the NRC, Uranium Recovery Field Office, in the form of a license amendment. In addition, the license shall implement an interim stabilization program for all tailings areas not covered by standing water. This program shall include written operating procedures and shall minimize dispersal of blowing tailings. The effectiveness of the control method used shall be evaluated weekly by means of a documented tailings area inspection. This requirement is in addition to the requirements of 10 CFR 20.
21. 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 Wyoming), 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 Wyoming, at the State's option.
22. The licensee shall submit a detailed decommissioning plan to the NRC, Uranium Recovery Field Office, at least twelve (12) months prior to planned shutdown of mill operations.
23. Occupational exposure calculations shall be performed and documented within one week of the end of each regulatory compliance period as specified in 10 CFR 20.103(a)(2) and 10 CFR 20.103(b)(2). Routine airborne ore dust and yellowcake samples shall be analyzed in a timely manner to allow exposure calculations to be performed in accordance with this condition. Non-routine ore dust and yellowcake samples shall be analyzed and the results reviewed by the Radiation Safety Officer within two working days after sample collection.
24. The tailings impoundment area shall not be expanded by raising the height of the present dam or constructing a new dam without specific prior approval of the NRC in the form of a license amendment.
25. The Radiation Safety Officer for the Sweetwater Mill shall possess the qualifications and responsibilities of the Safety and Environmental Administrator as specified in Sections 5.1.1 and 5.2.3 of the renewal application, with the exception that biannual refresher training shall not be required during periods of mill shutdown.
26. The licensee shall conduct and document initial employee training and annual refresher training for all mill process or mill maintenance employees. The training shall include the topics listed in Section 5.3.1 of the renewal application.

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27. The licensee shall conduct and document an annual ALARA audit of the radiation protection program at the mill. The audit report shall include the items specified in Section 2.3.3 of Regulatory Guide 8.31, and shall be distributed to the General Manager for review upon completion. A copy of the audit report shall be submitted to the NRC, Uranium Recovery Field Office, within one (1) month of submittal to the General Manager.

28. The licensee shall maintain a minimum of five (5) feet of freeboard between the top of the tailings dam and the tailings pond level throughout the project life.

29. Construction, maintenance, operation and reclamation of the tailings retention system shall be in accordance with the specifications, representations, and commitments in the following documents:

- A. Application for Amendment to U.S. Nuclear Regulatory Commission Source Material License No. SUA-1350, volumes 1-4, dated September 1982.
- B. Application for Amendment to NRC Source Material License No. SUA-1350, Sweetwater Uranium Project, volumes 5-6, dated July 1983.
- C. Response to WDEQ completeness reviews dated September 24, 1983, and October 21, 1983, transmitted by letter dated May 8, 1984, from Minerals Exploration Company to Wyoming Department of Environmental Quality.

The licensee shall however, comply with the following by written notice to the NRC, Uranium Recovery Field Office, prior to initiating construction or operation:

- D. The minimum diversion channel freeboard from the estimated water surface profile, for the PMF condition, to the top of the berm should be 4 feet through the curved entrance of the diversion channel.
- E. The thickness of riprap on the western bank (through the curved entrance) of the diversion channel should be 4 feet with 12 inches gravel bedding.
- F. Submit a design for placing a rock mulch or blading back the tailings on all windward slopes of the reclaimed tailings impoundment.
- G. Submit a Quality Assurance Plan covering design, placement, maintenance and operation of the tailings pond liner to the NRC, Uranium Recovery Field Office, for review and approval in the form of a license amendment prior to placement of the liner.

30. The licensee shall notify the NRC, Uranium Recovery Field Office, at least six (6) weeks prior to construction of the following features in order to provide adequate time for arrangement of on-site inspections by the NRC:

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- A. Near completion of cutoff trench excavation, but prior to placement of backfill in the trench.
- B. During early stage of embankment fill placement.
- C. At approximately 70 percent completion of embankment fill placement.
- D. Following completion of the interior excavation, but prior to the placement of the soil base and liner over the cell bottom.
31. The licensee shall construct, install, and maintain the liner system for tailings Cell "C" in accordance with the specifications, representations, recommendations, and commitments in the following:
- A. "Proposed Subsurface Tailings Disposal" transmitted by letter dated July 10, 1978, from Manager of Operations, MEC, to Chief, Fuel Processing Fabrication Branch, NRC, and supplements to this report dated August 1, 22, and 28, 1978.
- B. Quality Control - PVC/Hypalon Bond, pages 6-7 of October 23, 1978 letter from D'Appolonia Consulting Engineers, to Minerals Exploration Company (MEC), transmitted by letter dated November 23, 1978, from General Manager, MEC to Chief, Fuel Processing and Fabrication Branch, NRC.
- C. Items 7 and 8 of the enclosure to the October 12, 1978 letter from the General Manager, Minerals Exploration Company, to Chief, Fuel Processing and Fabrication Branch, NRC.
- D. Recommended changes, Uranium Pond Liner System, Sweetwater Project, Sweetwater County, Wyoming, for Minerals Exploration Company, by D'Appolonia Consulting Engineers, Inc., July 13, 1979.
- In addition, the licensee shall not modify the liner system or installation procedures specified in the above documents without specific prior approval of the NRC, Uranium Recovery Field Office, obtained through application for amendment of this license.
32. At least twelve (12) months prior to the scheduled resumption of milling operations, the licensee shall review and update the radiation safety program and standard operating procedures and provide the updated program to the NRC, Uranium Recovery Field Office, for review and approval in the form of a license amendment. The submittal shall include the licensee's quality assurance program.
33. During the period of mill shutdown, all mill entries and maintenance activities shall be conducted under a Radiation Work Permit (RWP) or standard operating procedure. The RWP shall describe any precautions necessary to minimize exposure to radioactive materials and specify the radiological monitoring necessary to determine employee exposures. All RWPs or operating procedures

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shall be signed by the Radiation Safety Officer. In addition, the licensee shall semiannually obtain and analyze air samples for U-nat and radon daughter concentrations and take external radiation measurements in the ore crushing and yellowcake areas of the mill.

34. At least twelve (12) months prior to the resumption of milling operations, the licensee shall submit a revised environmental and effluent monitoring program in accordance with Regulatory Guide 4.14, in the form of a license amendment, to the NRC, Uranium Recovery Field Office, for review and approval. The submittal shall include the licensee's quality assurance program in accordance to Regulatory Guide 4.15. During the suspension of milling operations, the licensee shall conduct environmental and effluent monitoring in accordance with the following:

- A. Air particulate, radon and gamma monitoring shall be performed at the restricted area boundary downwind of the tailings cell. Radon monitoring shall also be conducted at an upwind station as described in the licensee's July 23, 1990, submittal. Sample frequency and analysis shall be in accordance with Table C-3 of the licensee's submittal dated July 2, 1984.
- B. Notwithstanding the above, results of all ground-water monitoring shall be reported in accordance with license condition No. 44.

35. During the period of mill shutdown, discharge to the tailings impoundment shall be limited to water used for mill cleanup activities, pump test water, and seepage collection, subject to the following:

- A. The amount of water annually added to the tailings impoundment shall not exceed 25 million gallons. The licensee shall build and maintain the enhanced evaporation system as described in the November 12, 1985, and May 9, 1990, submittals as well as document the operation of the evaporation system on a monthly basis.
- B. The tailings cell liner shall be maintained in an operable condition within five (5) feet of the solution surface. Documentation of the liner condition and any repairs to it shall be maintained in the form of a weekly inspection record.
- C. Prior to resuming operations, the licensee shall inspect all exposed portions of the liner and repair any damage. A report documenting the inspection and repair procedures shall be submitted to the NRC, Uranium Recovery Field Office, at least six (6) months prior to resumption of operations.
- D. DELETED by Amendment 6.
- E. DELETED by Amendment 13.

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36. Bioassay testing shall be conducted as specified in Radiation Work Permits issued for non-routine maintenance tasks. Action levels shall be as follows:

- A. Anytime an action level of 15 ug/l uranium for urinalysis or 9 nCi of natural uranium for in-vivo measurement is reached or exceeded, the licensee shall provide documentation to the NRC, Uranium Recovery Field Office, indicating what corrective actions have been performed to satisfy the requirements of Regulatory Guide 8.22. This documentation shall be submitted with the semiannual 10 CFR 40.65 report.
- B. Anytime an action level of 15 ug/l for four consecutive specimens or 130 ug/l uranium for one specimen for urinalysis or 16 nCi uranium for an in-vivo measurement is reached or exceeded, the licensee shall provide documentation within one (1) month to the NRC, Uranium Recovery Field Office, indicating what corrective actions have been performed to satisfy the requirements of Regulatory Guide 8.22.

37. Within six (6) months of the resumption of operations, the licensee shall submit to the NRC, Uranium Recovery Field Office for review and approval in the form of a license amendment, a detailed proposal for the disposal of contaminated material and equipment generated at the mill site. The proposal shall include a description of the materials to be disposed of, location(s) of disposal, method(s) of disposal, estimated annual volumes of materials, and an estimate of the impact of the disposal on the tailings management plan.

38. In order to ensure that no disturbance of cultural resources occurs in the future, the licensee shall have an archeological and historical artifact survey of areas of its property, not previously surveyed, performed prior to their disturbance, including borrow areas to be used for reclamation cover. These surveys must be submitted to the NRC, Uranium Recovery Field Office, and no such disturbance shall occur until the licensee has received authorization from the NRC to proceed.

In addition, all work in the immediate vicinity of any buried cultural deposits unearthed during the disturbance of land shall cease until approval to proceed has been granted by the NRC.

39. The licensee shall conduct an annual survey of land use (private residences, grazing areas, private and public potable water and agricultural wells, and non-residential structures and uses) in the area within five (5) miles of any portion of the restricted area boundary and submit a report of this survey to the NRC, Uranium Recovery Field Office. This report shall indicate any differences in land use from that described in the last report.

40. 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, Uranium Recovery Field Office. Monitoring data shall be reported in the format shown in the attachment to SUA-1350 entitled, "Sample Format for Reporting Monitoring Data."

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41. 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 assessed or that is greater than that assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval of the NRC, Uranium Recovery Field Office, in the form of a license amendment.

42. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, 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, for reclamation of any tailings or waste disposal areas, ground water restoration as warranted and the long-term surveillance fee. Within three (3) months of NRC approval of a revised reclamation/decommissioning plan, the licensee shall submit for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within three (3) months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least three (3) months prior to the anniversary date which is designated as February 1 of each year. If the NRC has not approved a proposed revision to the surety coverage 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement for one year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs on the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15% contingency fee, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The licensee shall also provide the NRC with all surety-related correspondence submitted to the State, a copy of the State's surety review and the final approved surety arrangement. The licensee shall also ensure that the surety, where authorized to be held by the State, expressly identifies the NRC portion of the surety and covers the decommissioning and decontamination of the mill and mill site, reclamation of the tailings and waste disposal areas, soil and water sample analyses to confirm decontamination, ground water restoration as warranted and the transfer of the long-term surveillance fee to the U.S. General Treasury. The basis for the cost estimate is the NRC approved reclamation/decommissioning plan or NRC approved revisions to the plan. The attachment to SUA-1350 entitled, "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates," outlines the minimum considerations used by the NRC in the review of decommissioning and reclamation estimates. Licensee submissions of reclamation/decommissioning plans should follow this guidance.

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MEC's currently approved surety instrument, a Corporate Guarantee (Union Oil of California) with the State of Wyoming shall be maintained in an amount no less than \$4,556,519 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by both the State and NRC.

43. DELETED by Amendment No. 9.

44. The licensee shall implement a ground-water compliance monitoring program containing the following:

A. At a minimum, sample TMD wells 15, 16, 17 and 18 on a semiannual frequency for arsenic, barium, cadmium, chromium, lead, nickel, selenium, silver, natural uranium, combined radium-226 and 228, beryllium, cyanide, lead-210, thallium, thorium-230, gross alpha, chloride, iron, nitrate, sulfate, pH and total dissolved solids. The first semiannual sampling shall be collected in March 1989.

B. Comply with the following ground-water protection standards (in mg/l, unless otherwise noted) at point of compliance wells TMD-15, 16, 17 and 18, with background being recognized in well TMD-5:

arsenic = 0.05, barium = 2.0, beryllium = 0.01, cadmium = 0.01, chromium = 0.05, cyanide = 0.005, lead = 0.01, molybdenum = 0.04, nickel = 0.01, selenium = 0.01, silver = 0.05, thallium = 0.01, natural uranium = 1.7 pCi/l, combined radium-226 and 228 = 2.8 pCi/l, lead-210 = 1.4 pCi/l, gross alpha = 0.15 and thorium-230 = 10.0 pCi/l.

C. The licensee shall discuss the need for any additional point of compliance well locations for the perched aquifer and provide a detailed discussion on how the areal extent and concentration of hazardous constituents will be delineated. This information shall be submitted by October 31, 1989, in the form of a request for license amendment.

D. Implement a corrective action program in accordance with the April 25 and July 20, 1989 submittals, with the objective of returning the concentrations of chromium, natural uranium and combined radium-226 and 228 to the concentration limits specified in Subsection (B).

The corrective action program shall be fully operational as soon as practicable, but in no event later than July 1, 1990. Additionally, the licensee shall on a semiannual frequency, submit a ground-water monitoring report as well as annually, submit a corrective action program review that describes the progress towards attaining ground-water protection standards including the areal extent and concentration of hazardous constituents and estimates of time needed to obtain compliance. The first annual program review will be due in January 1990.

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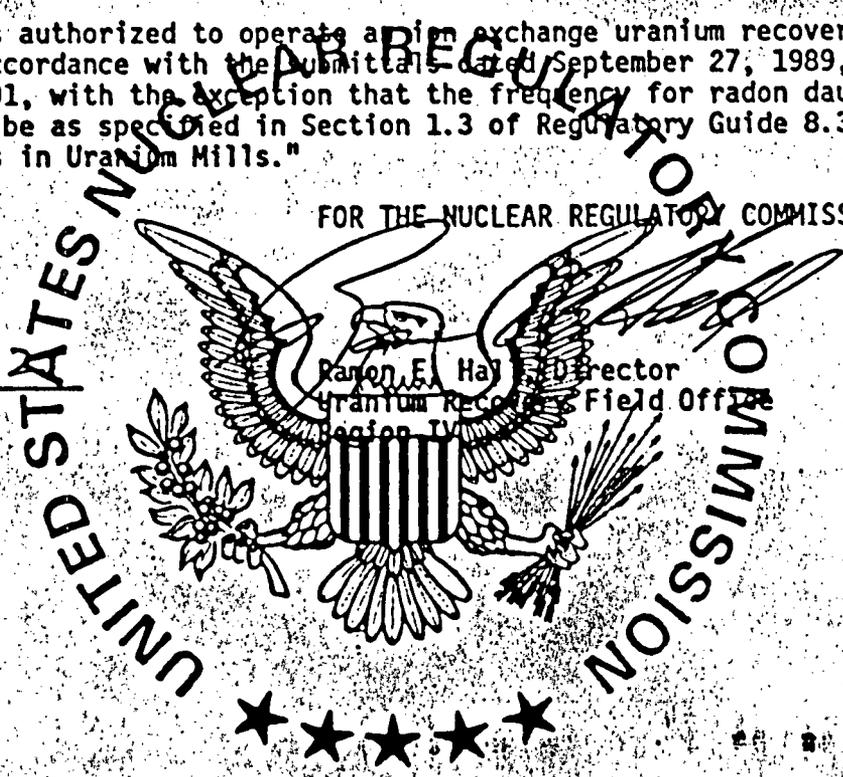
E. The licensee shall use, at a minimum, the following lower limits of detection for water quality analysis in mg/l, unless otherwise noted:

arsenic = 0.01, barium = 0.1, beryllium = 0.01, cadmium = 0.005, chromium = 0.01, cyanide = 0.005, lead = 0.01, molybdenum = 0.01, nickel = 0.01, nitrate = 0.01, selenium = 0.005, silver = 0.01, total dissolved solids = 1.0, thorium-230 = 1.0 pCi/l, lead-210 = 1.0 pCi/l and gross alpha = 1.0 pCi/l.

45. The licensee is authorized to operate a ion exchange uranium recovery operation in accordance with the Submittals dated September 27, 1989, and October 18, 1991, with the exception that the frequency for radon daughter sampling shall be as specified in Section 1.3 of Regulatory Guide 8.30, "Health Physics Surveys in Uranium Mills."

FOR THE NUCLEAR REGULATORY COMMISSION

Dated 2-6-9



Ramon E. Hall, Director
Uranium Recovery Field Office
Region IV