

November 4, 2003

Ms. Donna L. Wichers,
General Manager
COGEMA Mining, Incorporated
P.O. Box 730
Mills, WY 82644

SUBJECT: REMOVAL OF SEVEN IRIGARAY MONITOR WELLS FROM EXCURSION
STATUS IN LICENSE CONDITION 11.2 - AMENDMENT 8 (TAC# LU0006)

Dear Ms. Wichers:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of your request dated September 26, 2003, to remove seven monitor wells from excursion status at the Irigaray *in situ* leach uranium site in Wyoming. Your submittal referenced data submitted by letter of May 14, 2003, and the approval of the requested action by the Wyoming Department of Environmental Quality dated July 28, 2003. The submittal also contained suggested wording to be added to License Condition 11.2 to reflect NRC acceptance of your request. The NRC staff has documented its review in a Technical Evaluation Report (TER) (Enclosure 1) and determined that human health and the environment should not be affected by removal of these wells from excursion status.

The seven wells are removed from excursion status but the upper control limit for chloride has been revised to insure that the wells maintain their Wyoming Class-of-Use. The COGEMA Mining, Inc. license SUA-1341, condition 11.2 has been revised as discussed with you on October 16, 2003, and the amended license is provided as Enclosure 2.

An environmental review was not performed since this procedural change to groundwater monitoring is categorically excluded under 10 CFR 51.22(c)(11), as discussed in the TER.

If you have any questions or comments, contact Elaine Brummett, the NRC project manager for the Irigaray and Christensen Ranch facilities, at (301) 415-6606 or by e-mail to esb@nrc.gov.

In accordance with 10 CFR 2.790 of NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Gary S. Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No: 40-8502
SUA-1341

Enclosures: 1. Technical Evaluation Report
2. License Amendment No. 8

cc: G. Mooney, WDEQ - District III
L. Setlow, EPA

D. Wichers

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L. Setlow, EPA

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Technical Evaluation Report
COGEMA Mining Inc., Request to Remove Wells from Excursion Status,
Irigaray Mine Site, SUA-1341

Date: October 29, 2003

Technical Reviewer: Ron C. Linton, Hydrogeologist

Project Manager: Elaine Brummett

Summary and Conclusions:

COGEMA Mining Inc., (COGEMA) has requested that six shallow monitoring wells and one deep monitoring well be removed from their current excursion status at the Irigaray In Situ Leach site. COGEMA has been granted approval to remove the wells from excursion status by the Wyoming Department of Environmental Quality (DEQ). The Class-of-Use for the wells was Class III (livestock) prior to mining, and the water quality in the wells currently fits that classification. Human health and the environment should not be affected by removal of the wells from excursion status. The well upper control limits (UCLs) should be revised to insure that the wells maintain their Class-of-Use, and could be returned to excursion status if the new UCLs are exceeded. The staff recommends removing the wells from excursion status and revising the UCLs in License Condition 11.2.

Background:

By letter dated May 14, 2003, to the Wyoming DEQ, Land Quality Division, COGEMA requested the termination of excursion status of one deep well, DM-10, and six shallow wells, SSM-3, SSM-18, SSM-40, SSM-41, SSM-42, and SSM-43. These wells have been on excursion status for 9, 7, 7, 7, 5, 13, and 14 years respectively because of elevated levels of chloride, conductivity, and alkalinity. The basis of the request is that COGEMA has used best practicable technology to reduce and stabilize the water quality concentrations and that the current water quality concentrations do not exceed any of the Class-of-Use standards applicable to the wells.

By letter dated July 29, 2003, the Wyoming DEQ, Land Quality Division, approved COGEMA's request to remove the wells from excursion status for the Wyoming DEQ Permit to Mine No. 478. The basis for removal of the wells from excursion status is that none of the concentrations of groundwater parameters have exceeded the Class-of-Use standards established by the Water Quality Division for Class III (livestock) standards. This was the pre-mining Class-of-Use of the shallow sand groundwater and the deep sand groundwater. In addition, groundwater from DM-10 currently meets drinking water standards.

By letter dated September 26, 2003, COGEMA has requested that the Nuclear Regulatory Commission (NRC) remove the wells from excursion status and that the following language be added to the end of Licence Condition (LC) 11.2:

Irigaray monitor wells SSM-3, SSM-18, SSM-40, SSM-41, SSM-42, SSM-43, and DM-10 are excluded from the excursion confirmation and reporting requirements of this license condition pursuant to the licensee's May 14, 2003, submittal and the excursion removal approval granted by Wyoming DEQ dated July 28, 2003.

Technical Evaluation:

Shallow Excursion Wells:

The six shallow well excursions are located in a shallow sand zone above the production zone. The excursions are thought to have occurred when COGEMA began mining because of improperly abandoned wells in the production zone and the discovery of cracked casings in several shallow wells in the production zone (personal communication, Donna Wichers, COGEMA). Improperly abandoned wells that could be located by COGEMA were fixed and abandoned correctly. Wells with cracked casings were either repaired or were properly abandoned. Excursion restoration efforts were limited due to the very low water yield from the shallow sand zone wells that often went dry during weekly sampling. While the wells are above their UCLs, the chloride concentrations are well below the Class III livestock standard of 2000 mg/l, and well below the Class I drinking water standard of 250 mg/l. The highest chloride concentration noted from the six shallow wells for 2002 was 66.9 mg/l in well SSM-3.

Deep Excursion Well:

The deep well excursion is located in a deep sand zone located below the production zone and is believed to have occurred because of a hydraulic connection between the two zones. COGEMA pumped fluids from production zone wells in an attempt to lower concentrations in DM-10 and to remove it from excursion status. COGEMA has completed groundwater restoration in the production zone by performing a groundwater sweep of 16 pore volume displacements in Irigaray mine units 1 through 5 and 10 to 12 pore volume displacements in units 6 through 9. The groundwater sweep in the production zone has generally lowered the contaminant concentrations in DM-10. Groundwater restoration attempts were not successful in removing the well from excursion status and contaminant concentrations in the well were generally stable during the final pore volume displacements of the groundwater sweep. COGEMA has not attempted to pump from the deep sand zone as this may act to draw groundwater from the production zone into the deep sand zone because of the hydraulic connection between the two zones (personal communication, Donna Wichers, COGEMA). Additionally, the hydraulic head in DM-10 of the lower sand unit is greater than the hydraulic head in wells in the production sand zone. The higher hydraulic head in the deeper sand zone should preclude additional leakage from the production zone into the deep sand zone. Although the UCL for chloride is exceeded in DM-10, the chloride concentrations are well below the Class III livestock standard and the Class I drinking water standard. The highest chloride concentration noted from DM-10 for 2002 was 33.5 mg/l.

Regulatory Basis:

License Condition 11.2 of SUA-1341 requires that prior to mining in each production unit, the licensee shall collect groundwater samples and establish UCLs in accordance with Section 5.8 of the approved license application for the parameters chloride, conductivity, and total alkalinity. Wells are placed on excursion status if the results of two samples exceed at least two of the established UCLs. LC 11.2 specifies that an excursion is considered mitigated when the concentration of at least two excursion indicators remain below the established UCLs for three consecutive samples. The wells listed by COGEMA are currently in excursion status as defined under LC 11.2 since they have continued to exhibit concentrations that are greater than the defined UCLs.

COGEMA has opted to get approval by the Wyoming DEQ to remove the wells from excursion status and to request a license amendment from the NRC in lieu of continued groundwater restoration to meet the current license condition.

NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications, Final Report," §5.7.8.3 (2) paragraph 5, states:

The same upper control limits may be assigned to all monitor wells within a particular hydrogeologic unit in a given well field if baseline data indicate little chemical heterogeneity. Alternatively, if individual wells in a given unit exhibit unique baseline water quality, upper control limits may be assigned on a well-by-well basis.

NUREG-1569, §6.1, paragraph 2, states:

In conducting these evaluations, the reviewer should consider the technical evaluations conducted by a state or other federal agency with authorities overlapping those of the NRC.

NUREG-1569, §6.1.3, paragraph 1, states:

NRC shares the regulatory oversight of groundwater restoration with the Environmental Protection Agency (EPA) under its Underground Injection Control (UIC) Program (40 CFR Part 144) and those underground injection control programs administered by EPA Authorized States.

NUREG-1569 provides a basis for assigning UCLs on a case-by-case basis as well as considering the technical evaluations of another state agency. Wyoming is an authorized EPA state and administers the EPA UIC program. However, the wording of the requested amendment change in July 29, 2003, letter from COGEMA is inconsistent with monitoring requirements. The COGEMA request would exclude the wells in question from all excursion confirmation and reporting requirements.

These wells currently on excursion should not be excluded from all monitoring requirements, but should have their UCL limits redefined to a different standard. The wells should maintain the Class-of-Use standard for chloride for pre-mining conditions. Alkalinity and conductivity are not listed under the standard for Class III use. Under the Class-of-Use requirement, the wells

would no longer carry the current excursion status, but would remain in the sampling schedule that is provided for in LC 11.2. These wells could return to excursion status if conditions warrant under the new UCLs.

Proposed License Condition Change:

As discussed with the licensee on October 16, 2003, the following paragraph should be added to License Condition 11.2:

Irigaray monitor wells SSM-3, SSM-18, SSM-40, SSM-41, SSM-42, SSM-43 and DM-10 are excluded from the excursion confirmation and reporting requirements of this license condition pursuant to the licensee's May 14, 2003 submittal and the excursion removal approval granted by Wyoming DEQ dated July 28, 2003. However, if during a sampling event the chloride level in any of these wells should exceed the Wyoming Class III Livestock Standard for chloride, then the excursion confirmation and reporting requirements of this license condition will be reinstated for that particular well.

This language would insure that the chloride UCL indicator would continue to be used to confirm an excursion outside of the Class III use. The staff concluded that approval of the COGEMA request is protective of human health and the environment and within the guidelines of NRC guidance in NUREG-1569.

Environmental Impact Evaluation:

The change to the chloride UCL and removal of the alkalinity and conductivity UCL are procedural changes to the monitoring program for the designated wells. There should be no change in type, or increase in the amounts of effluents that may be released offsite due to the stable nature of constituent concentrations, no significant increase in occupational exposure and no increase in potential for radiological accidents due to the requested action because radionuclides are not involved, and no significant construction impact because the changes affect well sampling frequency. Therefore, in accordance with the categorical exclusion contained in of 10 CFR 51.22 (c)(11), concerning an amendment for changes which are procedural in nature, an environmental assessment is not required for this licensing action, and submittal of an environmental report is not necessary.

References:

COGEMA Mining, Inc., Irigaray and Christensen Ranch Projects, 2002 Annual Effluent and Monitoring Report, January 1 through December 31, 2002, NRC Source Material License No. SUA-1341 Docket No. 40-8502, February 2003.

United States Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications," June 2003.