



OFFICE OF THE
GENERAL COUNSEL

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

December 14, 2004

Administrative Judge
Thomas S. Moore, Chairman
U. S. Nuclear Regulatory Commission
Atomic Safety and Licensing Board Panel
Mail Stop: T-3F23
Washington, D.C. 20555

Administrative Judge
Dr. Richard F. Cole, Special Assistant
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Mail Stop T-3 F23
Washington, D. C. 20555

Administrative Judge
Dr. Robin Brett, Special Assistant
2314 44th Street, N.W.
Washington, D.C. 20007

In the Matter of
HYDRO RESOURCES, INC. (HRI)
Docket No. 40-8968-ML

Dear Administrative Judges:

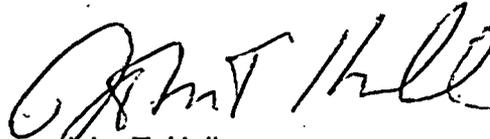
Pursuant to the Presiding Officer's order dated December 7, 2004 (Denying Motion to Suspend Proceeding), the undersigned provides the results of an ADAMS search for generic documents relating to *in situ* leach (ISL) uranium mining and the areas of concern (groundwater protection and restoration, and surety estimates) which are to be the subject of the initial written presentations for HRI's Section 17, Unit 1 and Crownpoint ISL mining sites. The following documents were found in an ADAMS search covering the period of time between October 1 and December 10, 2004:

1. Internal NRC Staff memorandum, dated October 1, 2004, pertaining to a draft report on geochemical issues involved in restoring groundwater at ISL mining sites.
2. National Mining Association (NMA) letter to the NRC dated November 2, 2004, pertaining to Wyoming and Nebraska state programs regulating ISL mining sites.
3. NRC Staff letter, dated November 16, 2004, pertaining to annual surety update of Crow Butte Resources ISL mining license.
4. NRC Staff letter, dated November 17, 2004, replying to NMA's November 2 letter.

Copies of the above documents are being provided by express mail to Eric Jantz, and by regular mail/internal distribution to others on the service list.

The above documents do not qualify for inclusion in the HRI Hearing File, and the NRC Staff reserves its right to object to their later use in any written presentations.

Sincerely,



John T. Hull
Counsel for NRC Staff

Enclosures: As stated

cc w/encl: Eric Jantz, Esq.
Anthony J. Thompson, Esq.
Laura Berglan, Esq.

Geoffrey H. Fettus, Esq.
Office of the Secretary
Office of Commission Appellate Adjudication

cc w/o encls: Jep Hill, Esq
Mark Pelizza
ENDAUM Office Manager
Chris Shuey

Steven J. Bloxham, Esq.
William Zukosky, Esq.
David C. Lashway, Esq.

October 1, 2004

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

FROM: Lawrence E. Kokajko, Deputy Director /RA/
Technical Review Directorate
Division of High-Level Waste Repository Safety
Office of Nuclear Material Safety
and Safeguards

SUBJECT: TECHNICAL ASSISTANCE REQUEST RESPONSE - REVIEW THE
DRAFT REPORT: CONSIDERATION OF GEOCHEMICAL ISSUES
IN GROUNDWATER RESTORATION AT URANIUM *IN-SITU* LEACH
MINING FACILITIES

The draft report, "Consideration of Geochemical Issues in Groundwater Restoration at Uranium In-Situ Leach Mining Facilities" dated July 2004, has been reviewed by John Bradbury, as requested (TAC No. A10525, UR Program Publications). The report addresses important issues pertaining to groundwater restoration at uranium in-situ leach mining facilities: namely, what are the effects of the various methods currently used at these sites in terms of contaminant release, and how much water must be pumped through the perturbed aquifer to reasonably ensure restoration, and what can happen after the pumps are turned off? This revision of the draft report is much improved over the previous draft. Furthermore, the authors have been responsive to earlier suggestions (Memo from J. Schlueter to G. Janosko, September 15, 2003).

Technical Review

The report appears comprehensive in terms of simulating the range of possible scenarios expected at uranium in-situ leaching facilities. No additional scenarios need be simulated.

Including appendices that contained a PHREEQC input file and the database is appreciated. This detail improves the report's potential usefulness as guidance for the staff and licensees who might apply this method for addressing groundwater restoration issues.

CONTACT: John Bradbury, NMSS/HLWRS
(301) 415-6597

On page 26, it is stated that "stability constants were not determined for selenate and sulfate adsorption because adsorption of these solutes was assumed to be negligible for the chemical conditions that were modeled." Although the stability constant for selenate is not present in the database in Appendix B, the stability constant for sulfate adsorption is. This could alter the results if sulfate competes with the other sorbed species. It is recommended that this discrepancy be corrected.

Figure 12 shows groundwater chemical data collected during the groundwater sweep and reverse osmosis treatment phases of groundwater restoration at the Ruth (Wyoming) ISL pilot plant. Concentrations of contaminants are plotted versus pore volumes extracted. Since the report compares breakthrough curves from PHREEQC simulations with the breakthrough curves at the Ruth site, it is recommended that the report include a description of the actual volume (e.g. gallons) of a pore volume at Ruth and how it is determined. This information could be useful if the method is applied to other sites. Additionally, the groundwater stabilization section of the report states that the simulations are carried out for 96 pore volumes under natural gradient conditions. It is recommended that the authors estimate the time for this amount of water to flow through the impacted aquifer, and compare it to the regulatory time limit.

There are a number of occurrences in the report (e.g. p. 37, 41, 45, 59), where the authors describe unique chemical conditions at different parts of the column. There are no corresponding figures illustrating concentrations versus position in the column. The authors may want to consider including some figures plotting concentration versus column position, if they would help clarify the text.

On page 45, there is a statement that U(VI) concentration decreases as a "...result of U(VI) desorption..." This seems backwards.

Finally, the conclusions reached in the report seem appropriate based on the supporting simulations. Overall the report provides important insights into the issues concerned with groundwater restoration of uranium in-situ leach facilities.

October 1, 2004

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

FROM: Lawrence E. Kokajko, Deputy Director /RA/
Technical Review Directorate
Division of High-Level Waste Repository Safety
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CONTACT: John Bradbury, NMSS/HLWRS
(301) 415-6597

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HLWRS r/f

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OFC	HLWRS	HLWRS	HLWRS
NAME	JBradbury	JGuttman	LKokajko
DATE	10/1/04	10/1/04	10/1/04



November 2, 2004

Mr. Gary Janosko
U.S. Nuclear Regulatory Commission
MS F 842
Washington, DC 20555-0001

Re: MOU Approach on Groundwater Protection at ISL Facilities

Dear Gary:

As you know, the National Mining Association (NMA) has been extremely supportive of the approach outlined in the Nuclear Regulatory Commission's (NRC) Regulatory Issue Summary (RIS) 2004-02, "Deferral of Active Regulation of Groundwater Protection at *In Situ* Leach (ISL) Uranium Extraction Facilities." Pursuant to that approach, NRC would defer active regulatory oversight of groundwater protection at ISLs to individual states such as Nebraska and Wyoming by entering into memorandums of agreement (MOUs) with each state. NMA is writing this letter because we have heard that the MOU process may have hit a roadblock. Unable to confirm this, we are writing to ensure that if the roadblock exists, that NMA's concerns are heard in a timely manner prior to any final decision.

While the exact status of the MOUs is unclear, we have heard that NRC staff have identified a "legislative concern" during their reviews of the Wyoming and Nebraska state programs. This concern appears to be centered upon the question of whether the state must have a legislative mandate that the primary goal of restoration of the wellfield be restoration to baseline. If this indeed is the staffs' concern, it is unfounded because the water in the mining zone is exempted from consideration as a source of drinking water by the Environmental Protection Agency (EPA) under its underground injection control (UIC) regulatory program. The aquifer exemption is necessary because the water is not now and cannot be a future source of drinking water due to the mineralization involved. See 40 CFR 146.4. In the case of ISL uranium mines, the primary constituents of concern in the exempted aquifer are uranium, radium and radon. Typically, the levels of these naturally occurring radionuclides make the water in the mining zone unsuitable for use as a drinking water source, indeed, for any use other than mining, prior to mining and after restoration.

NRC appears to acknowledge this in NUREG 1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications" (ISL SRP) which notes:

In addition to the NRC license, the EPA Authorized States issue underground injection control permits for *in situ* leaching operations, after the EPA grants an exemption from ground-water protection provisions for the portion of the aquifer undergoing uranium extraction (the exploited ore zone in an aquifer). The EPA aquifer exemption effectively removes that portion of the aquifer from any future consideration for ground-water protection; however, the ground-water protection provisions are still in effect for the aquifer adjacent to the exempted area.

ISL SRP at 6-5 (emphasis added).

NRC needs to make the distinction as it does in the SRP between the exempted aquifer and adjacent aquifers. NRC's post-restoration concern regarding potential impacts on adjacent non-exempted drinking water sources is appropriate. It must be remembered however, that EPA or the authorized state agency in an UIC delegated state has the authority to require a licensee or a UIC permittee to remedy any adverse impacts on non-exempted adjacent drinking water sources. Thus, although UIC regulations do not require restoration and do not provide EPA with the authority to require restoration, the fundamental concern is addressed — that being, the protection of non-exempted adjacent drinking water sources.

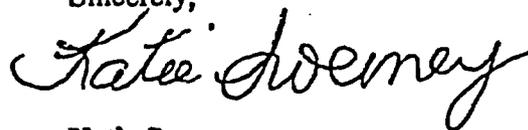
It makes no sense to have a primary goal of restoration to baseline for an exempted aquifer. The ISL SRP states that "the primary purpose of restoring the ground-water quality in a well field after the completion of uranium extraction operations is to assure the protection of public health and the environment". ISL SRP at 6-5. As NMA has commented previously (including comments on the ISL SRP), given that once an aquifer is exempted by EPA, it is never going to be a drinking water source in the future, how does attempting to restore the exempted aquifer to baseline protect public health and the environment? How could such a requirement be risk-informed? NRC cannot rely on *potential* impacts to adjacent aquifers to bootstrap the position that exempted aquifers should be restored to baseline. As noted above, there are adequate existing methods to protect adjacent aquifers. Also, restoring to baseline may be exceedingly expensive with any corresponding benefits to public health and safety (e.g., as is the case where baseline is below EPA maximum contaminant levels). In addition, as NMA has conveyed previously, having regulatory "goals" is not good regulatory policy.

To the extent that NRC staff's concern arises from a comparison of the ISL SRP and the state programs, NRC must remember that "review plans are not substitutes for the Commission's regulations, and compliance with a particular standard review plan is not required." ISL SRP at xviii and 6-1. Therefore, the state programs should not have to be identical to the ISL SRP for a satisfactory MOU to be developed.

The MOUs are needed to eliminate unnecessary dual regulation of ISL facilities, as dual jurisdiction significantly increases the costs for uranium producers and is a waste of licensee, NRC, and state resources. But, if, in fact, NRC intends to condition MOU approval on states having a primary goal of restoration to baseline, NRC should consult with affected licensees to determine whether there is adequate support to continue with the MOU approach.

If you have any questions, please contact me at 202/463-2627.

Sincerely,

A handwritten signature in cursive script that reads "Katie Sweeney".

Katie Sweeney
Associate General Counsel

November 16, 2004

Michael L. Griffin
Manager of Environmental and Regulatory Affairs
Crow Butte Resources, Inc.
86 Crow Butte Road
Post Office Box 169
Crawford, NE 69339-0169

SUBJECT: CROW BUTTE RESOURCES *IN SITU* LEACH FACILITY, LICENSE NO.
SUA-1534, - ANNUAL SURETY UPDATE, AMENDMENT 18 (TAC LU0066)

Dear Mr. Griffin:

By letter dated September 22, 2004, Crow Butte Resources, Inc., requested an amendment to increase its annual surety amount from \$14,909,670.00 to \$16,033,706.00. Significant changes to the surety estimate included the following: 1) the operation of eight well houses in mine unit 8 and five well houses in mine unit 9 by the end of 2005. Two hundred wells are also projected for mine unit 10. These additional mining areas resulted in significant increases in ground water restoration and wellfield reclamation costs; 2) the decommissioning estimate for the class 1 deep disposal well was escalated using the June 2004 consumer price index (CPI); 3) the number of contaminated and uncontaminated tanks in the commercial plant was updated; 4) the cost for contract analytical support during mine unit stabilization was reduced due to the stabilization monitoring plan approved by a Class III Permit modification issued in January 2004. These reduced analytical costs were partially offset by a corresponding increase in on-site analytical cost; 5) the length of small diameter lateral and trunk line piping was rebaselined for mine units 8 and 9, resulting in a decrease in the wellfield reclamation, pipe shredding and disposal cost for this material; 6) annual escalation of 3.3 percent based on the CPI for labor, buildings, spare parts and deep injection well; all other costs for operation and restoration and reclamation were rebaselined; and 7) inclusion of a 10 percent contract administration cost and 15 percent contingency cost.

The licensee's supporting data provided more information than recommended by Appendix C of NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications." The licensee's revised estimate is based on the actual costs incurred for equipment, chemical supplies, and disposal. The proposed CPI was verified with information from the U.S. Department of Labor, Bureau of Labor Statistics. The accompanying spreadsheets were reviewed and randomly checked for accuracy. No discrepancies were found. The inclusion of the 10 percent administration cost and the 15 percent contingency cost is consistent with the guidance in NUREG-1569. Based on this analysis, the change in the surety estimate has been determined to be acceptable. License Condition 9.5 has been revised to reflect the new surety amount and to reflect the most current revision to NUREG-1569. The amended license is enclosed.

Pursuant to 10 CFR 51.22(c)(10) and (11), neither an environmental assessment nor an environmental impact statement is warranted for these actions.

These changes to Materials License SUA-1534 were discussed between you and Mr. John Lusher, the NRC Project Manager for the Crow Butte facility, on October 16, 2004. If you have any questions concerning this letter or the enclosure, please contact Mr. Lusher at (301)415-7694 or via e-mail to JHL@nrc.gov.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the 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>.

Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS. The NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at (800)397-4209 or (301)415-4737 or pdr@nrc.gov.

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.: 40-8943
License No.: SUA-1534

Enclosure: License Amendment 18

cc: Stephen P. Collings, CBR, Denver
Dave Miesbach, Nebraska, UIC, DEQ
Dave Carlson, Nebraska, UIC, DEQ
Sheryl K. Rogers, Nebraska, RMP, PHA

November 16, 2004

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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. 40-8943
 License No. SUA-1534

Enclosure: License Amendment 18

cc: Stephen P. Collings, CBR, Denver
 Dave Miesbach, Nebraska, UIC, DEQ
 Dave Carlson, Nebraska, UIC, DEQ
 Sheryl K. Rogers, Nebraska, RMP, PHA

(Closes TAC No. LU0066)

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OFC	FCFB		FCFB		FCFB		FCFB	
NAME	J. Lusher		B. Garrett		R. Nelson		G. Janosko	
DATE	11/16/04		11/16/04		11/16/04		11/16/04	

OFFICIAL RECORD COPY

November 17, 2004

Ms. Katie Sweeney
Associate General Counsel
National Mining Association
101 Constitution Avenue, Suite 500 East
Washington DC 20001

**SUBJECT: DEVELOPMENT OF MEMORANDA OF UNDERSTANDING WITH NEBRASKA
AND WYOMING FOR U.S. NUCLEAR REGULATORY COMMISSION
DEFERRAL OF ACTIVE REGULATION OF GROUNDWATER PROTECTION
AT *IN SITU* LEACH URANIUM RECOVERY FACILITIES**

Dear Ms. Sweeney:

I am writing to acknowledge receipt of your November 2, 2004, letter regarding the U.S. Nuclear Regulatory Commission (NRC) staff's ongoing effort to develop memoranda of understanding (MOUs) with Nebraska and Wyoming for the deferral of active NRC regulation of groundwater protection at *in situ* leach (ISL) uranium recovery facilities in those States. As you are aware, the staff has completed its detailed evaluations of the Nebraska and Wyoming groundwater protection programs for comparison with the NRC's groundwater protection program, as provided in NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications," June 2003. Having completed these "comparability" reviews, the staff is in the process of seeking additional guidance from the Commission on the further development of the MOUs. The information and viewpoints of the National Mining Association (NMA), as provided in your November 2, 2004, letter, will be considered in the furtherance of the MOU development effort.

The NRC appreciates the continuing support of the NMA for this initiative as we both recognize the benefits of eliminating or reducing the overlapping regulation of groundwater protection of ISL facilities by the NRC and the States of interest.

If you have any questions regarding this letter, please contact Richard Weller of my staff at (301) 415-7287 or via e-mail to rmw2@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the 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>.

K. Sweeney

2

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Sincerely,

/RA/

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

cc: M. Salazar, EPA
M. Linder, NDEQ
R. Chancellor, WDEQ-LQD

K. Sweeney

2

November 17, 2004

Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS. The NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at (800) 397-4209 or (301) 415-4737 or pdr@nrc.gov.

Sincerely,

IRA

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

cc: M. Salazar, EPA
M. Linder, NDEQ
R. Chancellor, WDEQ-LQD

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DATE	11/17/04		11/17/04		11/17/04		11/17/04	

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