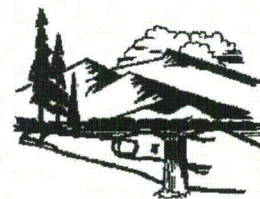


Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's
environment for the benefit of current and future generations.*



Matthew H. Mead, Governor

Todd Parfitt, Director

January 29, 2014

Mr. Doug Mandeville
US Nuclear Regulatory Commission
Mailstop T8F5
Washington, DC 20555

Dear Mr. Mandeville:

The Department of Environmental Quality/Land Quality Division (DEQ/LQD) has completed a technical review for the Permit Combination/Update and Amendment of new lands for the Smith Ranch in situ uranium mine in Converse County, Wyoming. The application was published in two newspapers of general circulation ending on January 2, 2014. Currently, the application is in public comment which ends on **February 10, 2014**.

Please find enclosed a copy of the *Public Notice* and *Affidavit of Publication*. Also, included is a *Fact Sheet* for the Class III Permit Amendment. These documents are provided to meet the requirements of LQD Non-Coal Rules and Regulations, Chapter 11, Section 21(a)(iii).

Please contact me, the permit coordinator, at pam.rothwell@wyo.gov or 307-777-4078 or Robin Jones, LQD District I Supervisor, at robin.jones@wyo.gov or 307-777-8956, if you have any questions regarding the enclosed information.

Sincerely,

Pam Rothwell
Profession Geologist, Permit Coordinator
Land Quality Division

Encl: Fact Sheet for In Situ Class III Mine Permit
Affidavit of Publication and Public Notice



FACT SHEET
DEPARTMENT OF ENVIRONMENTAL QUALITY/LAND QUALITY DIVISION
WYOMING IN SITU CLASS III URANIUM MINE PERMIT

This document provides pertinent information concerning the issuance of an *In Situ Leach (ISL) Mining Permit Amendment* as well as the consolidation of two adjacent active ISL mining permits. Permitting ISL mining is primarily regulated by the Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD) as defined by the Wyoming Environmental Quality Act (ACT), § W.S. 35-11-427. The principal facts and significant factual, legal, methodological and policy concerns are reviewed through a technical review process as defined by § W.S. 35-11-428 and § W.S. 35-11-429 of the ACT and Wyoming Department of Environmental Quality Rules and Regulations, Chapter 11, *In Situ Mining*. Any outstanding issues are addressed as conditions of the permit and noted on the Department of Environmental Quality/Land Quality Form 1-UIC, *In Situ Permit to Mine*.

DESCRIPTION OF FACILITY

Type of Facility: Uranium ISL Mine

Mine Method: ISL mining involves injecting a leach solution (lixiviant) into an ore body, dissolving the uranium mineral from the source rock and pumping the pregnant solution to the surface. The leach solution consists of native groundwater, oxidant (oxygen or hydrogen peroxide) and a complexing agent (sodium bicarbonate and/or carbon dioxide). ISL mining utilizes an array of injection and production wells arranged in strategic patterns to effectively mine and produce the uranium. Mining fluids are conveyed from distribution centers through buried pipelines and injection wells. The pregnant uranium bearing fluid is conveyed from the ore zone through production wells and buried pipelines to processing facilities to recover the uranium from the pregnant solution. A ring of monitor wells surround each wellfield to monitor the containment of the mining solution. Following the depletion of uranium from the ore zone, lixiviant injection is stopped and the groundwater in the production zone is restored to premine conditions using a combination of techniques and treatment processes including groundwater sweep, reverse osmosis, bioremediation and/or chemical reductant. The restoration objective is to change the chemical state of the groundwater such that the metals are returned to their insoluble state and are precipitated back to the source rock.

FACILITY CONTACT

Mr. Ken Garoutte, Manager, Safety, Health, Environment and Quality
Cameco Resources
Smith Ranch-Highland Operation
P.O. Box 1210
Glenrock, WY 82637
Tel: (307) 358-6541

WASTE MANAGEMENT (Draft Permit 633, Volume 1, Section 14.0 includes discussion of waste management)

Liquid Effluents Wastes - The mine operation includes two primary processing plants and four satellite facilities each producing waste streams consisting of production bleed streams, treatment waste (ion exchange or reverse

osmosis) and plant wash down waste. The primary plant waste streams also include elution and precipitation waste, yellowcake rinse water, water softener regeneration, laboratory waste water, and groundwater restoration bleed. The following is a list of liquid effluent disposal facilities for the operation:

- Deep Injection Well Disposal
- Land Application Disposal
- Underground Injection Control Class I Injection Wells
- Satellite No. 1 Radium Settling Basins
- Purge Storage Reservoir (PSR) No. 1
- PSR-1 Land Application Area
- PSR-2 and Associated Land Application Area
- Waste Water Storage Ponds
- Selenium Treatment Facility
- Used Oil Disposal

Non-Radioactive Solid Wastes

- Packing material, office trash, boxes; disposed at public landfill.
- Construction materials; disposed by controlled and authorized burns.

Radioactive By-Product (i.e., 11e2) Wastes

- Contaminated rags, filter media, worn/replaced equipment and parts, piping, sediment removed from process pumps and vessels, storage pond solids, sludge from radium pond treatment systems, etc.; stored in appropriately labeled, secured, covered commercial waste containers and disposed at a Nuclear Regulatory Commission (NRC) licensed facility.

Domestic Wastes:

- Waste water from restrooms, shower facilities, sinks, etc.; treated by a permitted conventional septic/leach field system.

Gaseous Effluents

- Radon-222 is present in the recovery fluid which is release at several exposure sources during fluid processing, sampling and also during operational processes such as filter changes and the reverse osmosis operation. Radon emissions are managed by ventilation systems which capture and vent to the atmosphere.

CHEMICAL STORAGE (Draft Permit 633, Volume 1, Section 13.0 includes discussion of chemical storage facilities)

Process Related Chemical

- Bulk Hazardous Materials: sodium hydroxide, hydrogen peroxide, sulfuric acid and/or hydrochloric acid are stored in a chemical tank farm area outside the processing plant and segregated from process area. They are transferred to the processing plant by pipeline as needed.
- Bulk Process-related Reagents: sodium bicarbonate, sodium chloride, carbon dioxide and oxygen stored adjacent to the processing facilities or within wellfields.
- Bulk Chemical Reductants: hydrogen sulfide, sodium sulfide, methanol, molasses, cheese whey and other non-hazardous organic materials stored in bulk in areas where restoration is occurring.

Non-Process Related Chemicals

- Petroleum (gasoline, diesel), propane, drill mud additives, soil amendments, etc. stored outside or process areas at the plant and satellite areas.

FLUID DISCHARGES/RELEASES

Storm Water Discharges

- Storm water discharges resulting in sediment transport to surface waters of the state or to runoff outside the affected land are managed by erosion/sediment control measures according to Best Management Practices (BMPs). DEQ/Water Quality Division regulates sediment discharges with respect to protecting surface waters of the state under the Construction General Permits.

Non-Storm Water Discharges

- Surface or subsurface well/infrastructure failures resulting in release of fluids on the surface consist of injection and/or production fluids as well as other pollutants managed in the operations and are managed by the DEQ/Water Quality Division Non-Storm Water WYPDES permit and the Nuclear Regulatory Commission License depending on the waste that is discharged and the location of the discharge.
- Water produced during well testing, development or production is regulated by DEQ/Water Quality Division Temporary or Individual Discharge Permit.

REQUESTED VARIANCES

The draft permit follows the acceptable practices and procedures as defined by the Wyoming Environmental Quality Act (ACT), § W.S. 35-11-428 and § W.S. 35-11-429 and the Wyoming Department of Environmental Quality Rules and Regulations, Chapter 11, *In Situ Mining*. No variances or alternatives to required standards have been requested.

PROCEDURES FOR PERMIT DECISION

Public Notice

This draft permit was public noticed in two newspapers of general circulation, once each week for four consecutive weeks.

Public Comment

The Public Comment period began on January 3, 2014 and will end on February 10, 2014. A copy of the draft Appendix D-12 (Statement of Basis for an Aquifer Exemption) was sent to the Environment Protection Agency for review/comment.

Procedures for Comment or Objection

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process. Wyoming Environmental Quality Act (ACT), § W.S. 35-11-406 (k).

Affidavit of Publication

THE STATE OF WYOMING,

COUNTY OF CONVERSE

I, Matt Adelman do solemnly swear that I am the publisher of THE GLENROCK INDEPENDENT, a weekly newspaper of general circulation, published weekly at Douglas, Converse County, Wyoming that the notice attached, and which is part of the affidavit and a part of the proof of publication of legal

**Legal #2497
Cameco Resources
Public Notice 12-12-13**

was published in said newspaper 4 times, the first publication having been made on the 12th day of December, 2013 and the last publication on the 2nd day of January, 2014. Notice was published in the regular and entire issue of every number of said paper during the period of time of publication, and that the notice was published in the newspaper proper, and not in a supplement.

In testimony whereof, I have hereunto set my hand this 20th day of January, 2014.

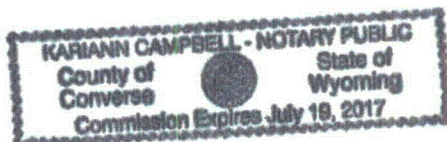
Signed

Matt Adelman

Fees: Paid In Douglas

Subscribed and sworn to before me this 20th day of January, 2014. My commission expires 07/19/17.

Kariann Campbell
Notary Public



Public Notice...

Public Notice

Power Resources, Inc. d/b/a Cameco Resources of Cheyenne, Wyoming has applied for an in situ mining permit amendment from the Land Quality Division of the Wyoming Department of Environmental Quality of the State of Wyoming. The purpose of this proposal is to combine the existing Smith Ranch Mine and Highland Uranium Project (SRH) permits (Permits 633 and 603, respectively) and add as an amendment, the Reynolds Ranch property (approximately 8,565 acres) under a single permit i.e., Permit 633 when the amendment is approved.

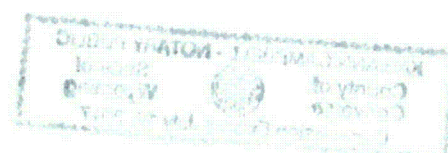
Permit 633 and Permit 603 uranium In-Situ Recovery (ISR) mines are located within the southern portion of the Southern Powder River Basin, approximately 22 miles northeast of Glenrock and 25 miles northwest of Douglas. These mine permit boundaries are adjacent to one another. The proposed Reynolds amendment area is contiguous with and located north of these two permits. The final permit will be 39,870.35 acres within portions of Township 35 North, Ranges 74 and 75 West; Township 36 North, Ranges 72-74 West; and Township 37 North, Ranges 73 and 74 West.

The Smith Ranch Mine and Highland Uranium Project have been in operation since 1981 and 1988, respectively. Operations in the Reynolds amendment area will begin at the conclusion of the permitting process in 2014 and are projected to continue until 2028.

Prior to mining, the groundwater in the production zone will be reclassified by the Water Quality Division of the Department of Environmental Quality, as Class V (Mineral Commercial). This classification includes specified production zones for wellfields included in the application. The classification corresponds to areas delineated as Federal aquifer exemption areas. The ground water, after mining, will be restored to a quality of use equal to or better than and consistent with pre-mining uses.

Information regarding the proposed mining operation and reclamation/restoration procedures may be reviewed in the office of the Land Quality Division of the Department of Environmental Quality in Cheyenne Wyoming or at the Converse County Clerk's Office in Douglas, Wyoming.

Written objections, or comments, to the proposed mining operation and proposed reclassification of groundwater/aquifer exemption must be received by the Administrator of the Land Quality Division of the Department of Environmental Quality, Herschler Building, 122 West 25th Street, Cheyenne, WY 82002, before the close of business, February 10, 2014. If an objection specifically requests a public hearing before the Environmental Quality Council, a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The Environmental Quality Council or Director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing shall be conducted

[illegible]

10 20 9 10

Affidavit of Publication

THE STATE OF WYOMING,

COUNTY OF CONVERSE

I, Matt Adelman do solemnly swear that I am the publisher of THE DOUGLAS BUDGET, a weekly newspaper of general circulation, published weekly at Douglas, Converse County, Wyoming that the notice attached, and which is part of the affidavit and a part of the proof of publication of legal

Legal #9075
Cameco Resources
Public Notice 12-11-13

was published in said newspaper 4 times, the first publication having been made on the 11th day of December, 2013 and the last publication on the 1st day of January, 2014. Notice was published in the regular and entire issue of every number of said paper during the period of time of publication, and that the notice was published in the newspaper proper, and not in a supplement.

In testimony whereof, I have hereunto set my hand this 20th day of January, 2014.

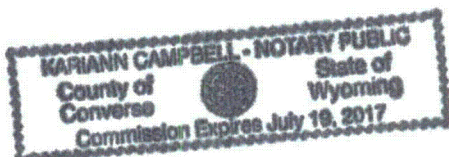
Fees: \$900.00

Signed

Matt Adelman

Subscribed and sworn to before me this 20th day of January, 2014. My commission expires 07/19/17.

Mary Campbell
Notary Public



Public Notice...

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Publish: December 11, 18, 25, 2013 & Jan. 1, 2014

9075

Lucile K. Taylor - Converse County Clerk

107 N. 9th St., Suite 114 • Douglas, WY 82633-2448

Telephone 307-358-2244 • Fax 307-358-5998

Email: lucile.taylor@conversecountywy.gov

Website: www.conversecounty.org

December 10, 2013

TO WHOM IT MAY CONCERN:

This is to certify, that on December 10, 2013, POWER RESOURCES INC, DBA CAMECO RESOURCES, filed in this office an application for APPLICATION FOR WDEQ PERMIT TO MINE, referred to as the Smith Ranch-Highland Project. These nine volumes will be on file in the office of the CONVERSE COUNTY CLERK until at least January 10, 2014. (Longer if necessary).

LUCILE K TAYLOR
CONVERSE COUNTY CLERK

By: 

Title: 

