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January 11, 2012

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington DC, 20555-1001

CERTIFIED MAIL 7011 0470 0000 7716 1079 RETURN RECEIPT REQUESTED

RE: Phase II of the Highland Plant Renovation
Source Material License SUA-1548, Docket Number 40-8964

Please find attached Power Resources, Inc. d/b/a/ Cameco Resources Phase II plan for the renovation of the Highland Processing Facility. Phase II is limited to the dismantling and disposal, if necessary, of tanks, vessels and piping associated with the original Highland Processing Facility. This work will also include the cleanup of the interior structure and removal of concrete pillars and curbs, as required to support the renovation work and plan. Phase III has been renamed 4A and will be limited to the removal of the Calciner dryer and will be reviewed through a separate ORC/SERP and will include a risk assessment of the work involving Health Physics.

Cameco Resources has contracted a Certified Health Physicist to oversee the work conducted by contracted HP Technicians during Phase II and will report directly to Smith Ranch-Highland's Radiation Safety Officer and Health Physics Department. This will ensure that proper personal contamination scanning, radiation surveying and RWP evaluations will be in accordance to our license, guidance and procedures. The Health Physicist will be responsible for the free release of all materials removed and the proper handling of contaminated materials not meeting free release criteria. All contaminated materials will be disposed of at a NRC approved and licensed 11e(2) byproduct disposal site.

The modernization of the Highland Processing Facility will be reviewed through the ORC/SERP process and will include retrofitting components, tanks and vessels and the installation of two vacuum dryers similar in design and function as the vacuum dryers presently in use at Smith Ranch's CCP.

FSME20
FSME

If you have questions, please contact me at (307) 358-6541, ext. 452.

Sincerely,



Brent Berg
General Manager
Smith Ranch-Highland Operation

BB/jmc

cc: File SR 4.6.4.1
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Overview

Cameco Resources has initiated planning to increase U₃O₈ (yellowcake) production capacity of the Wyoming and Nebraska In-Situ Recovery (ISR) mines. Included in this plan is the need to receive toll shipments from various NRC licensed facilities to elute their resin in addition to Cameco's own satellite facilities. The loaded resin is to be shipped from each NRC licensed processing operation to the Highland facility for resin stripping and barren resin return to originator.

The general plan for the re-habilitation of the Highland Processing Plant from the existing standby condition, modernization of the building services, and modernization and expansion of the prior process circuits includes demolition of the existing out buildings, demolition of existing process equipment, installation of new plant infrastructure and interior process equipment. Using new equipment and construction materials the plan will provide an additional plant life extension of 20 years. When finished, the re-habilitation of the Highland Processing Plant will be consistent in design and function as the presently approved Smith Ranch Central Processing Plant (CPP) and satellites.

To accomplish this goal, the work will be awarded to independent contractors, consultants and Health Physics professionals. All work performed will be under the direction and oversight of Cameco Resources to ensure the health and safety of the workers is not compromised.

This plan, Phase 2, Interior Demolition, includes the demolition of the plants interior process equipment, decontamination of the warehouse and shop area for future build out as a clean space.

The clean out and removal of the existing dryer will be reviewed under a separate ORC/SERP (Phase 4A) to allow a more focused approach to the details of work, ensuring worker health and safety.

Site and Project Security

There are two access roads into the Highland Facility. One is through a code activated gate, the other is from the SAT 1 area and is currently not gated. This road will be gated during the Phase 1 construction. The plant area is fenced, during the Phase 2 work all buildings that are not active work sites will be locked or code activated to prevent entrance. During the periods of non-occupancy all building will be secured with



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mechanical or code activated locks. All visitors, vendors, and contractors will sign in prior to accessing the site. All visitors and vendors will be escorted while on mine properties.

Phase 2, Pre Demolition Activities

Prior to commencement of work all contractors will be required to complete Radiation Safety Training provided by Smith Ranch-Highland Radiation Department personnel and provide a baseline bioassay sample for analysis. Additional training will be provided by the Health Physics and Safety Departments, as required. This training will require annual refresher if the individual(s) are on site more than one year. All individuals working as contractors will be provided with Site Specific Training and environmental impacts and mitigation requirements. All individuals and contractors involved in the packaging and shipment of 11e(2) materials will be provided Hazard Awareness Training prior to beginning work. Individuals cannot begin work until all training requirements and documentation is completed.

Some of the work to be performed in this Phase may require respiratory protection. The Respiratory Protection Program will be managed by the performing Contractor. Mandated use of respirators will be determined jointly by the Contractor and Cameco SHEQ and Health Physics Departments. All individuals requiring respiratory protection during the course of their work will be receive training, medical approval, and respirator specific fit test.

A Job Hazard Analysis (JHA) and associated Radiation Work Permit (RWP) will be required prior to beginning a new task or job assignment in the plant building or other areas as determined by the Health Physics department. All individuals working under a JHA/RWP will be required to review the requirements of the documents and signatures will be required of the individual(s) and the Radiation Safety Officer (RSO) or designee prior to beginning work. Individuals joining the work group after work has begun will be required to review the documents with the RSO or designee and sign the documents prior to beginning work.

Work performed on the plant building or inside the building may be performed under a Radiation Work Permit (RWP) reviewed and monitored by the Health Physics department. The need for a RWP will be evaluated on a case by case basis. The performing Phase 2 Contractor shall assign a full time person to manage the Contractor portion of the Radiation Work Permit Program, schedule the work to include confined space entry, and expedite the RWPs with the Health Physics department to minimize work delays.



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Phase 2, Site Preparation Work

As part of the Phase I work, performed by others, field office spaces were constructed for use by contractors and Cameco Resources oversight staff. There will be four (4) office trailer and one (1) shower trailer locations available to contractors, and one additional space will be available for the Cameco Resources oversight staff. All trailer spaces will have 208 volt, 100 amp electrical service, water, sewer, telephones, and computer connections. The shower trailer will accommodate up to twenty (20) site personnel. The trailers will have skirting around them. There will be no material storage permitted under these trailers.

Prior to the start of demolition work all utilities will be isolated. This work will include the initial Lockout/Tagout of all utilities in the work areas. Records will be kept of all Lockout/Tagout actions and the records will be updated as systems are removed or put back into service.

Cameco Resources will install temporary electrical power to support the demolition and refurbish work inside the Highland Facility. Secondary disconnect panels will be installed inside the Highland Facility adequate to power twenty 110V, 20A circuits and seven 480V, 100A circuits. New electrical lines will be installed to support the new power circuits.

Cameco Resources will construct, operate, and maintain a decontamination containment area near the overhead door between Column 1-B and 1-C. The decontamination containment area will have the following features: concrete containment curbs, pressurized rinse water supply, and a rinse water collection system. The concrete containment curbs shall measure 6" wide X 6" high. The total area of the decontamination containment is approximately 1,600 square feet and may be expand as space inside the building becomes available. The pressurized rinse water supply will be used to decontaminate the surfaces of the materials being removed. Measures will be taken to control rinse water over spray and minimize rebound and cross contamination issues. The purpose of the rinse is to rid the surface of any removable contamination that can cause contamination outside the building and (or) be the first step in material surface preparation for reuse. The contaminated water will be pumped to a 2,000 gallon storage tank provided by Cameco Resources. The tank will have a 75% level alarm to reduce the risk of overflow. The tank containing the contaminated water will be disposed of by Cameco Resources deep well injection or treated land application. The tank will also have a heating system if the demolition phase continues into the winter. Cameco Resources will remove the contaminated wash water with a vacuum truck and transport it to the appropriate treatment facility on the Smith Ranch-



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Highland site. The decontamination containment area will be serviced by the bridge crane located inside the Highland Facility for incoming materials. All terrain forklifts and hydra cranes will be used for materials leaving the facility for disposal.

Cameco Resources will establish, operate, and maintain a size reduction area located adjacent to the decontamination containment area. The space may be temporarily expanded after the chemical storage area is demolished or if the structural stairs between column lines 3 and 4 are removed for access to tanks. The size reduction and salvage area will be serviced by the building's bridge crane.

PHASE 2, Interior Demolition

As part of the demolition project, a four person crew will be assigned to clean bio-hazards found and perform general building clean-up of waste left behind by others. This will be followed by decontamination of the space and confirmed by the Health Physics Contractor's radiological survey. The cleaned spaces outside the demolition area will be used during the reconstruction phase as warehouse and staging areas. The dictation of a four man crew is to assure that the crew is intact, performing the work required, cleaning the building, and not dispersed through the common labor crew(s).

Prior to any cleanup in liquid or chemical storage areas is permitted, Cameco will arrange for an industrial hygienist to perform a survey of specific areas within the plant building.

There are three rows of existing MCC equipment. Cameco Resources will remove, package, and palletize the existing MCC equipment for disposal. Disposal will be based on radiological and polychlorinated biphenyl (PCB) surveys.

Cameco Resources will demolish all interior partitions in the shop and warehouse areas. The remaining walls shall to be pressure washed to remove any surface contamination. Other wall debris will be size reduced and disposed of in the appropriate waste stream. There are currently 5 rooms in the shop and warehouse area: two offices, an instrument room, an electrical room, and a tool room. There is a free standing storage room currently located in the northwest corner of the current yellowcake storage area. Cameco Resources will demolish these structures and dispose of the debris as described above. Contaminated materials will be shipped to a NRC approved and licensed 11e(2) disposal site.

Pipe, valves, conduit, wire, support systems, existing light fixtures, panel boxes, and all other equipment related to the electrical system will be removed, decontaminated if necessary, and disposed of accordingly. All small-bore pipes shall be plugged with



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spray foam. The large-bore pipe will be split in the size reduction area. Line breaking procedures will be established and in place prior to disturbing any installed pipe.

All tanks, pumps, compressors, and any other mechanical equipment will be removed from the Highland Facility. Appendix A includes a list of the equipment that will be removed. Openings in tanks and pump bodies will be closed using blind flanges or spray foamed prior to removal from the current installed location. Tanks containing sludge with free liquids or total deposits exceeding the Project's lift capacity will be cleaned out or the material will be stabilized in accordance guidance, permits, and agreements.

General arrangement drawings GA-HL-001 and GA-HL-002 (attached) show the proposed locations and orientations of the new equipment, offices, restrooms, and labs. The current revision of these drawings will be compared to the Highland As-Built drawings and the appropriate walkways and structures will be removed and disposed of properly.

Concrete demolition is required at several locations in the Highland Facility to facilitate the new process equipment layout. Several tank and pump foundations will be removed to support the new general arrangement. Again, the current general arrangement drawings will be compared to the Highland As-Built drawings to determine the foundations which need to be demolished. The debris will be surveyed for release or disposed of at an approved and NRC licensed 11e(2) disposal facility.

Structural components dismantled for reuse will be decontaminated and stored in a separate area from the demolished materials. A coding system will be implemented in order to assure proper reconstruction of the structures. Reconstruction of the dismantled structures will be performed by others at time of construction phase.

During Phase 2 of the demolition, areas of the Highland Facility will be modified in order to support the reconstruction phase. An overhead door measuring 14'X14' will be installed at the north end of the building where the existing door is no longer operable.

Cameco Resources will clean up and decontaminate the warehouse area inside the Highland Facility where new office and warehousing space will be provided for long term plant operation.

Cameco Resources will provide warehousing capability during the demolition phase of the Project for receipt of support materials, equipment, and early deliveries of permanent materials for the reconstruction phase will be received and stored for future use. The eastern most edge of the existing parking lot may be used for storing the large equipment such as tanks, etc. The original yellowcake storage area and warehouse/shop areas are also available for interior storage after the existing interior



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walls are removed and the areas are determined clean by the RSO following the HP surveys.

Safety Considerations

A Safety Specialist will assist with the implementation of Cameco Resources' safety program. Cameco Resources' Safety Department will interact with the Safety Specialist to ensure continuity in the application of safety programs. All contractors will provide Cameco Resources with their safety programs for review. The programs will be consistent with Cameco Resources' Safety Program, at a minimum. The programs will contain a Lockout/Tagout procedure, Confined Entry procedure, and Working at Heights procedure. Contractor supervisors will have training in CPR/AED/First Aid and orientation training will be provided regarding Cameco Resources emergency response procedures/requirements. Cameco Resources' Safety Department will have safety oversight responsibilities for all Phase 2 Demolition work. Daily Tailgate Meetings will be conducted and documented prior to beginning the work day.

Fire Extinguishers and eye wash/shower stations will be in place and inspected at the same frequency as Smith Ranch to ensure functionality.

Health Physics Consideration

There will be a full time Certified Health Physicist to oversee the project on a daily basis. To support the project additional Health Physics Technicians will be contracted, as needed. The technicians will be trained to perform duties as outlined in Cameco Resources' Health Physics Manual. The Health Physics Department will have jurisdiction and monitoring responsibility on the Radiation Work Permit, air sampling in the work areas, management of the Thermoluminescent Dosimetry (TLD) Program, bioassay program, radiation surveys/sampling and waste stream determination for material release. All equipment and tools used inside the Plant building or on building modifications will be alpha/beta/gamma surveyed prior to release. It is the Contractors responsibility to decontaminate equipment and tools for free release.

Air particulate sampling will be accomplished with breathing zone, high volume and if deemed necessary, continuous high volume samplers. Sampling will be once a month at a minimum. The results will be used to determine the air quality regarding radiation and to calculate the internal exposures. Radon sampling will be accomplished every month or as required by the RSO. The results of the radon sampling will be utilized in the calculation of internal exposures and the concentrations of radon in the air. Gamma



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and beta surveys will be accomplished once a month at a minimum. All sampling, surveying and resulting calculations will be completed using Smith Ranch-Highland's Health Physics Manual procedures. TLD badges will be stored on control board in the Project Office when not in use (the previous Phase 1 submittal refers to a lead container. This control board statement supersedes the reference to a lead container). A control badge will be stored on the board to provide a background for the issued badges. The appropriate Personal Protective Equipment (PPE) will be detailed in the JHA/RWP analysis and write-up. The required PPE is hard hat, steel toe boots and safety glasses with side shields, but positive pressure respirators, SCBA, Tyvek coveralls, rubber gloves, rain suits, rubber boots are available to be added the JHA/RWP as deemed necessary by the RSO or designee.

Environmental Impacts

The environmental impacts will be minimal as the area has been previously disturbed and assessed by the NRC through the EA/SER process. The work will be contained within existing buildings, on the existing parking lot, or driveways.

Transportation

As part of the Highland Resin Transfer System Project, transportation accidents, the shipment of IX resin was assessed in EA/SERs associated with the Gas Hills, SR-2, Reynolds Ranch, and Toll milling amendments (NRC, 2004, 2007a, 2007b, 2009). All shipments of 11e(2) materials will be contained in DOT certified containers, as required, and transported under DOT and NRC regulations. The containers will meet the requirements for release and shipping of radioactive materials with proper placards and labeling. The 11e(2) material will comply with the requirements of the authorized and licensed receiver of byproduct materials. The contract transportation drivers will have current Hazmat endorsements on their driver's licenses. Cameco will stage and store the Project's 11e(2) containers in a fenced area constructed during Phase 1 Demolition.

Cultural and Historical Resources

All construction activities will be limited to the area of the previously assessed and approved Highland Processing Facility. There will be no cultural or historical resources impacted by the activities.



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Background Radiological Characteristics

Background radiological characteristics have been assessed and documented. These surveys are on file in the Smith Ranch library or archives.

Land Use Impacts

Surface and mineral ownership within the licensed area is a mix of private, state and BLM administered lands. Historically the land use has been limited to sheep and cattle grazing with limited oil and gas operations. The area is very sparsely populated with only one home within the licensed area, the Vollman Ranch, located approximately 4 miles due west and upwind of the Highland facility. The Fowler Ranch is located approximately 2.4 miles NE of the Highland plant and is occupied only occasionally during the summer months. Population estimates indicate the nearest towns; Douglas (23 air miles SE) and Glenrock (17 air miles S) have a population of 5,581 and 2,351 respectively.

Air Quality Impacts

As stated in NRC EA/SERs, air quality in the South Power River Basin is relatively good. Year 2004 particulate matter observations in the basin are available from the Glenrock Coal company air quality monitoring station and a Casper, Wyoming monitoring station (county building (Center and C Streets). The annual mean and maximum PM₁₀ at the Glenrock Coal station were PM_{2.5} were 3.31µg/m³ and 10.5µg/m³, respectively. Given the limited air pollution sources near the SR-HUP licensed area, low air pollution concentrations are expected.

Final Decommissioning

Following the completion of mining/processing at the Highland facility, the building, equipment and foundations will be dismantled and decontaminated in accordance to NRC guidance or disposed of at a licensed facility. Gamma radiation surveys will be conducted over the area after removal of surface and subsurface materials to determine potential contamination. Materials with contamination levels requiring disposal will be removed in accordance with DOT regulations and disposed of at a licensed facility. Upon closure all surface areas disturbed will be blended in with the natural terrain and be consistent with the post-mining land use.



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Water Impacts

Water impacts will be minimal as all the water usage will be contained within existing buildings and waste water disposed via deep well injection or land application. Fresh water will be supplied by the existing well that was used during the past operation of the Highland plant. If the well is determined to be not usable, a new well will be permitted and drilled. Bottled drinking water will be supplied by Cameco Resources.

Ground Water Impacts

All stock ponds and wells are sampled on a quarterly basis when water is available. The samples are sent to an outside independent laboratory for analysis to verify the wells are not impacted by SR-HUP operations. The water table is historically 100 feet from surface throughout most of the area. SR-HUP expects the ground water impacts to remain minimal as demonstrated by results of operational sampling over the past years.

Wildlife Impacts

Wildlife impacts will be minimal as all the activities will be confined to previously disturbed and operating areas. The majority of work will be inside of existing structures. Wildlife impacts have been assessed through various EA/SERs documented by the NRC.

Radiological Impacts

The primary source of radiological impact to the environment from site operations is gaseous radon-222, which is released from satellite facilities and well fields. Cameco Resources uses MILDOS-AREA, a dispersion model approved by the NRC, to estimate the dose commitments received by the public. The NRC stated in the Environmental Assessment for Satellite SR-2 in December, 2007 "PRI used a worst case scenario methodology when evaluating its site and assembling its model" and "The two nearest resident, the Sunquest Ranch and the Vollman Ranch, are estimated to receive a peak maximum yearly dose of 17.5 and 13.2 mRem/yr respectively for the worst case scenario." And "NRC staff evaluated the model results and has determined that



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estimated dose to the nearest resident and members of the public meet the requirements of 10 CFR 20.1301 (i.e., 100 mrem/yr).”

Waste Disposal Impacts

All contaminated solid waste will be disposed of at an approved and licensed 11e(2) facility. All containers of 11e(2) materials will be maintained in a secured and posted area prior to release for transport. All uncontaminated solid waste will be removed to a land fill for burial. Liquid sanitary waste will be disposed of via septic system.

Environmental Monitoring

When the Highland plant was shut down in late 2002 the two associated environmental air stations were discontinued (these are remote locations located away from the plant area). These two air stations will be re-commissioned and utilized during operation. Air particulate sampling, environmental gamma and radon will be sampled on the same quarterly frequency as the existing Smith Ranch air stations. The air sample stations are located on the HUP overlook and at the Fowler Ranch.

Previous Environmental Assessments and Supporting Documents

Originally, SR-HUP was two separate facilities (Smith Ranch and Highland) licensed to two different corporate entities under different source materials licenses. The NRC first authorized Kerr-McGee Corporation (KM) to conduct research and development (R&D) ISL operations in June 1981 under source materials license SUA-1387. A corresponding Environmental Impact Assessment (EIA) was issued for the R&D operation (46 FR 30924). In February 1984, SUA-1387 was amended to reflect that Sequoyah Fuels Corporation, a wholly owned subsidiary of KM, was the licensee for the Smith Ranch operations (NRC 1984). The NRC renewed Sequoyah Fuels license for continued operations by letter dated January 29, 1988 (NRC 1988). A Finding of No Significant Impact (FONSI) was published in the Federal Register on January 7, 1988 (53 FR 459).

Rio Algom Mining Corp. (RAMC) acquired Smith Ranch in December, 1988 (Quivira Mining Corp. 1988) and proposed expansion from a R&D operation into commercial scale production. An Environmental Assessment (EA) was developed in conjunction with the licensing action (NRC 1991a). The NRC reviewed ground water impacts (Section 4.1), Waste Disposal (Section 4.4), In-Plant Radiological Safety (Section 4.3), Offsite Radiological Impacts (Section 4.2), and Cultural Resources (Section 4.5) for ISL related activities. An EAFONSI was published in the Federal Register on January 10,



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1992 (57 FR 306). On March 12, 1992 Source Materials License SUA-1548 was issued to RAMC authorizing commercial scale production.

A proposed license amendment was presented to the NRC requesting the addition of Reynolds Ranch ISL satellite to Source Materials License SUA-1548 by letter dated January 14, 2005. The Reynolds Ranch properties are contiguous to the SUA 1548 licensed area to the north. An EA addressing ISL construction and operational impacts was developed as part of the Reynolds Ranch review in November 2006 (NRC 2006), and the EAFONSI was published in the Federal Register on January 5, 2007 (72 FR 586-588).

As part of RAMC's SUA-1548 license renewal effort, the NRC developed an EA summarizing their review (NRC 2001). The NRC evaluated environmental impacts of continued solution recovery of uranium from the Wasatch and Fort Union formations, at depths from 400-1000 feet below surface. The analysis considered all components of the extraction process including injection/recovery well patterns, spacing, and mechanical integrity testing, header house manifolds and connecting injection/production wells, and lixiviant chemistry (Sections 3.2 and 3.3). Impacts to ground water (Section 6.4) and potential for loss of vertical or horizontal containment of lixiviant to the subsurface (Section 6.5) were considered. NRC (2001) also assessed ISL related impacts including construction of well fields, plant facilities, access roads, and pipelines to ecological systems (Section 6.7), endangered species (Section 6.8), and wildlife (Section 6.9). Based on the NRC (2001) assessment, a FONSI for the Smith Ranch ISL operation was published in the Federal Register on May 4, 2001 (66 FR 22620).

A proposed license amendment was sent to the NRC on October 11, 2006 requesting approval for the construction and operation of a satellite facility (SR-2). The NRC prepared an EA to evaluate the environmental impacts associated with the licensing action. A finding of no significant Impacts was published in the Federal Register on January 8, 2008 (73 FR 1367-1370). In support of the license amendment a Safety Evaluation Report (SER) was prepared by the NRC documenting their review of the proposal in regards to safety and health safety (December 2007).

A proposed amendment authorizing SR-HUP to receive third party ion exchange resin (Toll milling) for processing was requested for approval by Power Resources, Inc. d/b/a Cameco Resources by letter dated June 19, 2008. The NRC prepared an EA and SER based on their review of the proposal and determined the request to be acceptable by approving the amendment on September 15, 2009.



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The Highland site is located east and contiguous to the Smith Ranch licensed area. Initially, the NRC authorized Everest Minerals Corp. to conduct commercial-scale operations at the Highland site under Source Materials License SUA-1511 in 1987 (NRC 1987). The staff's environmental review was documented in an EA/FONSI issued on July 2, 1987 (52 FR 25094). Everest Minerals Corp. changed its name to Power Resources, Inc. in 1989 (Everest Minerals Corp. 1989). In 1995, the NRC renewed SUA-1511 for Rower Resources, Inc.'s Highland facility, with the EA/FONSI published in the Federal Register on August 18, 1995 (60 FR 44367).

Power Resources Inc. acquired the Smith Ranch properties and source materials license from Rio Algom Mining Corp. in July, 2002. By letter dated August 18, 2003, the NRC approved the integration of the Highland Uranium Operations into the Smith Ranch license (NRC 2003). The operations at the combined SR-HUP were authorized under Source Materials License SUA-1548. The NRC did not prepare an EA/FONSI, as this action was considered administrative and organizational in nature.



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Appendix A

Tank ID	Description	Mat'l	Size	Capacity	Media
T-3A	Fresh Eluate Tank	FRP ¹	14'ØX18'H	20,700 gal	10% NaCl, 2% NaCO ₃
T-3B	Fresh Eluate Tank	FRP ¹	14'ØX18'H	20,700 gal	10% NaCl, 2% NaCO ₃
T-4	Recycled Rich Eluate Tank	FRP ¹	14'ØX18'H	20,700 gal	10% NaCl, 2% NaCO ₃
T-5	Recycled Rich Eluate Tank	FRP ¹	14'ØX18'H	20,700 gal	10% NaCl, 2% NaCO ₃ , .5% U308
T-6A	Rich Eluate Tank	FRP ¹	14'ØX18'H	20,700 gal	5% NaCl, 1% NaCO ₃ , 2% U308, 2% H ₂ SO ₄
T-6B	Rich Eluate Tank	FRP ¹	14'ØX18'H	20,700 gal	5% NaCl, 1% NaCO ₃ , 2% U308, 2% H ₂ SO ₄
T-15	Potable Water Tank	FRP ²	8'ØX9'-6"H	6,000 gal	Water
T-16	Filter Press Sump Tank	FRP ²	30"x30"x50" H	75 gal	Eluate waste water
T-20	Pre-Filtered Resin Water Tank	FRP ²	14'ØX18'H	20,700 gal	Water
T-21	Filtered Resin Water Tank	FRP ²	14'ØX18'H	20,700 gal	Water
T-22A	Pre-Filtered Waste Water Tank	FRP ²	12'ØX24'H	20,300 gal	Water
T-22B	Pre-Filtered Waste Water Tank	FRP ²	12'ØX24'H	20,300 gal	Water
T-23	Filtered Wash Water	FRP ²	12'ØX24'H	20,300 gal	Water
T-30A	Sulfuric Acid Tank	FRP ²	12'ØX24'H	20,300 gal	93% H ₂ SO ₄
T-31A	Brine Tank	FRP ¹	12'ØX18'H	15,200 gal	26.4%NaCl in water solution



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Tank ID	Description	Mat'l	Size	Capacity	Media
T-31B	Brine Tank	FRP ¹	12'ØX18'H	15,200 gal	26.4%NaCl in water solution
T-32	Plant Water Tank	CS	44'ØX24'H	250,000 gal	Water
T-34	Soda Ash Slurry Tank	FRP ¹	12'ØX20'H	16,900 gal	32% NaCO ₃
T-39	Elution Seal Pot	Nalgene	2'Ø X3'H	60 gal	Eluate
T-40	Filtered Resin Tank	FRP ²	10'ØX15'H	8,800 gal	Resin fines water
V-1	Elution Column	CS ¹	7'-9"ØX9'H	3,100 gal	Eluate
V-2	Elution Column	CS ¹	7'-9"ØX9'H	3,100 gal	Eluate
V-3	Elution Column	CS ¹	7'-9"ØX9'H	3,100 gal	Eluate
V-4	Elution Column	CS ¹	7'-9"ØX9'H	3,100 gal	Eluate

Agitators ID	Location	Material	Shaft Size	HP	Notes
A-3A	Fresh Eluate Tank	304ss	2"	2hp	Drive missing, motor present.
A-3B	Fresh Eluate Tank	304ss	2"	2hp	Drive missing, motor present.
A-4	Recycled Rich Eluate Tank	304ss	2"	2hp	Drive missing, motor present.
A-5	Recycled Rich Eluate Tank	304ss	2"	2hp	Drive missing, motor present.
A-6A	Rich Eluate Tank	CS, EPDM coating	2"	2hp	Complete assembly.
A-6B	Rich Eluate Tank	CS, EPDM coating	N/A	N/A	Assembly missing.



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Pump ID	Description	Material	Type	HP	Size
P-4A	Recycled Rich Eluate Pump	316ss	Centrifugal	30	10
P-4B	Recycled Rich Eluate Pump	316ss	Centrifugal	30	10
P-6A	Rich Eluate Pump	316ss	Centrifugal	7.5	8
P-6B	Rich Eluate Pump	316ss	Centrifugal	7.5	8
P-15A	Potable Water Pump	316ss	PD	1.5	8
P-15B	Potable Water Pump	316ss	Centrifugal	5	6
P-16A	Filter press pump	316ss	Centrifugal	10	4
P-16B	Filter press pump	316ss	Centrifugal	10	4
P-20A	Transfer Pump	316ss	Centrifugal	15	6
P-20B	Transfer Pump	316ss	Centrifugal	15	6
P-21A	Filtered Resin Water Pump	316ss	Centrifugal	30	10
P-21B	Filtered Resin Water Pump	316ss	Centrifugal	30	10
P-22A	Pre-Filtered Waste Water	316ss	Centrifugal	20	8
P-22B	Pre-Filtered Waste Water	316ss	Centrifugal	20	8
P-30A	Sulfuric Acid Pump	316ss	Centrifugal	3	6
P-30B	Sulfuric Acid Pump	316ss	Centrifugal	3	6
P-31A	Brine Pump	316ss	Centrifugal	2	8
P-31B	Brine Pump	316ss	Centrifugal	2	8
P-32A	Plant Water Pump	Ductile Iron	Centrifugal	15	6



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Pump ID	Description	Material	Type	HP	Size
P-32B	Plant Water Pump	Ductile Iron	Centrifugal	15	6
P-32C	Fire Water Pump	Ductile Iron	Centrifugal	125	18
P-32D	Fire Water Pump	Ductile Iron	Centrifugal	150	18
P-34A	Soda Ash Slurry Pump	316ss	Centrifugal	5	6
P-34B	Soda Ash Slurry Pump	316ss	Centrifugal	5	6
P-40	Resin Fines Pump	316ss	Centrifugal	15	10
P-42	Resin Area Sump Pump	Ductile Iron	Centrifugal	15	
P-44	Eluate Sump Pump	EPDM coat	Centrifugal	5	

Filter ID	Description	Material	Type	Particle Size
F-5	Rich Eluate Sump Strainer	FRP w/gel coat	Cartridge	10 micron
F-20	Recycle Water Filter	CS w/epoxy coat	Screen	
F-41	Sulfuric Acid Station strainer	304ss	Cartridge	20 micron
E-016	Filter Press	CS Frame, composite assembly, epoxy paint	Membrane	

Screen ID	Description	Material	Type	HP
S-1	Resin Shaker	Epoxy painted, CS frame, 304ss screens	Vibratory	5
S-2	Resin Shaker	Epoxy painted, CS frame, 304ss screens	Vibratory	5



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Fans ID	Description	Type	Size	Notes
F-01	Building Vent. Fan	Axial, Wall mount	30"	Located in north wall, east side.
F-02	Building Vent. Fan	Axial, Wall mount	60"	Located in east wall, shaker deck.
F-03	Building Vent. Fan	Centrifugal		Located in roof line, north mill area.
F-04	Building Vent. Fan	Centrifugal		Located in roof line, mid-mill area.
F-05	Building Vent. Fan	Centrifugal		Located in roof line, mid-mill area.
F-06	Building Vent. Fan	Centrifugal		Located in roof line, south mill area.

Blowers ID	Description	Type	MFG	HP	Notes
K-20	Air Blower	PD rotary	Roots	40	Model 42-V-RA1, Roots ID#865-108-120 87P
N/A	Exhaust Fan	Radial	New York Blower	3	Shop # E-7949-100, Fiberglass housing, Vents tanks T-6A and T-6B, Located south exterior wall of mill
N/A	Scavaging Fan	Radial	Buffalo Fan Co.	7.5	Size 35, Cast housing, Purges T-40 vent line area

	Configuration	CFM	Pressure	HP	Notes
K-1C	Reciprocating	95	175	25	Two stage. Includes 200 gallon tank.

Receiver ID	Configuration	Capacity	Press. Rating	Notes
T-25	Vertical Cylinder	300 gal.	200 psi	2" inlet and outlet. Disconnected from service.



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Dryer ID	MFG	Type	Capacity	Press.	Volt	Model	Notes
E-27A	Flow Dry						Unit not surveyed.
E-27B	Flow Dry						Unit not surveyed.

Heaters

Six large gas fired unit heaters were located:

- (4) Located near the roofline, staggered and centered to peak.
- (1) Located north of control room, suspended from ceiling.
- (1) Located in maintenance shop area.

Three smaller air handlers were identified on the mezzanine level, far west side of the building.

Air Conditioning Units

Four refrigerant circulating units were located:

- (1) Wall unit, mezzanine level control room.
- (1) Second floor control room.
- (1) Office/lab service.
- (1) Unknown service, roof mounted.

Specifications for these units were not determined, due to accessibility limitations and scope parameters.