



CAMECO RESOURCES
Smith Ranch-Highland
Operation
Mail:
P.O. Box 1210
Glenrock, WY
82637 USA

Tel: (307) 358-6541
Fax: (307) 358-4533
www.cameco.com

September 15, 2011

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

Certified Mail:7011 0470 0000 7716 0355

RE: Phase I 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 I plan for the renovation of the Highland Plant. Phase I is limited to the dismantling and disposal of the Highland offices trailers, garage, extraneous equipment outside of the Highland Plant building and modernize the electrical services. This work will be contained within the existing roadways and parking lot with no impact to previously undisturbed areas. Phase II will be the removal of tanks, vessels and piping within the plant and is presently being review through the ORC/SERP process. Phase III will be the removal of the Calcliner dryer and is also in the ORC/SERP review process.

Cameco Resources has contracted a Certified Health Physicist to oversee the work conducted during Phase I 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 Physicists 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 Plant 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 at Smith Ranch's CCP.

FSME20

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

Sincerely,



Brent Berg
General Manager
Smith Ranch-Highland Uranium Operation

BB/jmc

cc: File SR 4.6.4.1
D. Mandeville, USNRC (2 copies)
US NRC
Certified Mail:
7011 0470 0000 7716 1362

Mr. Lowell Spackman, District 1 Supervisor
Wyoming Department of Environmental Quality
Land Quality Division
Herschler Building, 3 Fl-West
122 West 25th Street
Cheyenne, WY 82002
Certified Mail:
7011 0470 0000 7716 0379



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Overview

Cameco Resources (Cameco) 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 demolition portion of the plan is a two phase approach to achieve the goal; Phase 1, Project Infrastructure Installation and Up-Grade; Phase 2, Plant Building Interior Demolition, and Phase 3, the Highland Dryer Demolition.

This plan, Phase 1, includes the re-habilitation of the Highland Processing Plant from the existing standby condition, modernization of the building services, and installation a Contractor support facility consisting of office trailer utilities and a new electrical substation.

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

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 EA/FONSI was published in the *Federal Register* on January 10, 1992 (57 FR 306). On March 12, 1992 Source Materials License SUA-1548 was issued to RAMC authorizing commercial scale production.



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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 EA/FONSI 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.

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).

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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.

PHASE I

Pre Demolition Activities (Infrastructure Installation and Up-Grades)

Prior to commencement of work all contractors will be required to complete New Hire Contractor Training provided by Smith Ranch-Highland personnel and provide a baseline bioassay sample for analysis. Additional training will be provided by the Health Physics Department 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. All individuals requiring respiratory protection during the course of their work will 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 a 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 will be evaluated to determine the need for a Radiation Work Permit (RWP). If needed, the RWP will 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 1 Contractor shall assign a full time person to manage the Contractor portion of the Radiation Work Permit Program, schedule the work, and expedite the RWP with the Health Physics department to minimize work delays



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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. A gate will be installed as part of this Phase 1 scope of work. The plant area is fenced, during the Phase 1 work all buildings that are not active work sites will be locked or code activated to prevent entrance. All visitors, vendors, and contractors will sign in prior to accessing the site. All visitors and vendors will be escorted while on mine properties.

Site Preparation (Phase 1 Demolition Scope of Work)

There is currently no office space available at the Highland Site. However, there is an established parking lot and material storage area. Cameco Resources will make the necessary improvements to the surface for future use as office trailer space, POV parking area, and a material lay down yard.

Prior to the start of Phase 1 work all utilities will be isolated. This work will include the initial Lockout/Tagout of all utilities. Records will be kept of all Lockout/Tagout actions and the records will be updated as systems are removed or put back into service.

The existing water supply is from a well located approximately 300 yards north of the plant. There is a 15 horsepower pump in the well. The well originally supplied water at up to 300 GPM for ancillary support, plant process, and fire protection through the existing 125,000 gallon tank. The tank is usable in the temporary infrastructure and the plants re-start applications. Cameco Resources will install a temporary water supply system to support the office/shower trailers. A chlorine injection system will be provided by Cameco Resources and installed by the Contractor.

It's assumed that the existing septic system is operational and will be verified at the time of the Phase I work. Cameco Resources will connect the office/shower trailers to the existing septic system.

Cameco Resources will demolish the existing electrical substation including the fence, switchgear, timber construction, and existing transformers. Cameco Resources will construct a new electrical substation. Along with the building of a new substation, Cameco Resources will install distribution panels adequate to power the Contractor's office/shower trailers and yard lighting. The yard lighting will consist of three poles with three lights each.

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. In addition electrical circuits will be installed specifically for air sample stations at predetermined locations for air sampling during future work phases.

Cameco Resources will install a fiber optic line from the Morton 1-20 DDW building, approximately 8000 feet away, to the contractors support facility. At the contractors support area the fiber optic line will be connected a communications trailer containing



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switch gear and other equipment. This installation shall be capable of supporting six phones and six computers in each office trailer.

Cameco Resources will refurbish the existing bridge crane. The work will include the installation of a new non-spin hoist cable. The rigging configuration will remain a four part load line. All of the lubricants in the gear box will be changed. The bridge and trolley rails will be inspected, replaced if necessary, and cleaned. New brakes will be installed. All electrical power contacts and brushes will be cleaned or replaced as necessary, and a new control cable will be installed. The bridge crane will be load tested and re-certified.

Demolition is required outside the Highland Facility (plant building) to facilitate new building access and improve the general site conditions. The work in this item shall be preceded by lockout/tag out of all utilities to the structures. This will be recorded similar to the aforementioned lockout/tag out procedures in this document. Cameco Resources will terminate all underground utilities and document the termination locations and depths. After a free release survey Cameco Resources will demolish the three (3) office buildings and one (1) storage garage structure along with their foundations located to the west of the Highland Facility. The debris will be taken to an offsite landfill, after the radiological release surveys are completed and verified. On the northeast side of the Highland Facility are two carbon steel tanks. The prior contents are believed to be sulfuric acid. The acid type will be confirmed prior to demolition. These tanks will be demolished along with their support structure. The debris will be taken to an offsite landfill after the radiological release surveys are completed and verified. If not, the debris will be staged as directed by a Cameco Resources representative. Abandoned trucks and trailers are in the same area as the sulfuric acid tanks will be removed during the site preparation phase of the demolition. Any materials found not to meet free release criteria will be disposed of at a NRC licensed and approved 11e(2) byproduct facility.

Safety Considerations

A Safety Specialist will assist with the implementation of the contract's safety programs. Cameco's Safety Department will interact with the Safety Specialist to ensure continuity in the application of safety programs. All contractors will provide Cameco with their safety programs for review. The programs will be consistent with Cameco's 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 regarding Cameco Resources emergency response procedures/requirements. Cameco's Safety Department will have oversight responsibilities with all contracted 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.

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Health Physics Consideration

The Health Physics department will have jurisdiction and oversight 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 building or on building modifications will be alpha/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 frequency will be determined by the contracted Health Physicist and Cameco Resources RSO. The results will be used to determine the air quality regarding radiation and if necessary, to calculate the internal exposures. Radon daughter sampling will be accomplished every month or as required by the RSO. The results of the radon daughter sampling will be utilized in the calculation of internal exposures and the concentrations of radon daughters in the air. Gamma 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 in a lead shield container when not in use. A control badge will be stored in the container 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 and transported under DOT and NRC regulations. The containers will meet the requirements for release and shipping of radioactive materials with proper placards and

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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. During this Phase 1 work an existing fenced area will be modified for improved truck access as a storage area for the shipping containers.

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.

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, 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.



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Upon closure all surface areas disturbed will be blended in with the natural terrain and be consistent with the post-mining land use.

Water Impacts

Water impacts caused by the Phase 1 Demolition Project will be minimal. Fresh water will be supplied by the existing well that was used during the past operation of the Highland plant. Bottled drinking water will be supplied by Cameco Resources.

Ground Water Impacts

All stock ponds are well 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. Wildlife impacts have been assessed through various EA/SERs documented by the NRC.

Radiological Impacts

Radiological impacts are not expected during the Phase 1 Demolition Project. However, 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 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, 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 estimated dose to the nearest resident and members of the public meet the requirements of 10 CFR 20.1301 (i.e., 100mrem/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



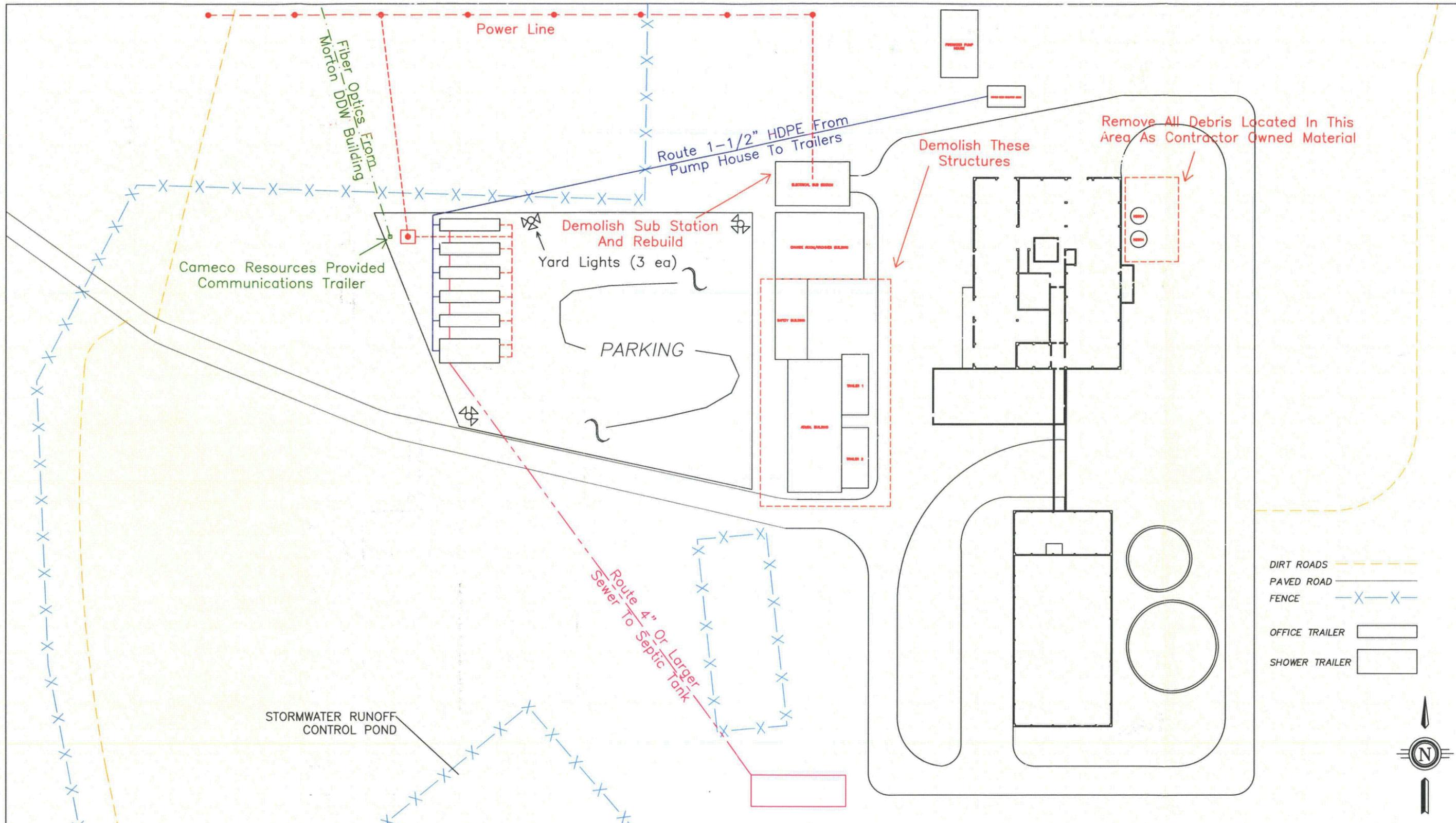
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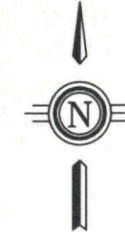
area prior to release for transport. All uncontaminated solid waste will be removed to a land fill for burial. Liquid sanitary waste will be disposed of via septic system.

Environmental Monitoring

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



- DIRT ROADS ————
- PAVED ROAD ————
- FENCE —X—X—
- OFFICE TRAILER []
- SHOWER TRAILER []



REVISIONS			NO.	DATE	BY
	A	1-7-10	JRG		
	B	1-19-10	JRG		
	C	8-30-11	JRG		

SIZE	SCALE	DEPARTMENT
B	1"=120'	DEVELOPMENT
Drawing #: SP-005		GEO REFERENCE
Drawing Location: K:\HUP\DEMOLITION TRAILER ARRANGEMENT.DWG		NONE
		REV
		C

**HIGHLAND RESIN TRANSFER SYSTEM
DEMOLITION TRAILER ARRANGEMENT**



Cameco Resources
400 East 1st St. Suite 308
Casper, WY 82601
Telephone: (307) 237-2128