NRC FORM 374

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and the applicable parts of Title 10, Code of Federal Regulations, Chapter I, Parts 19, 20, 30, 31, 32, 33, 34, 35, 36, 39, 40, 70, and 71, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Powertech (USA) Inc.	3. License Number SUA-1600, Amendment No. 1
2. 5575 DTC Parkway, Suite 140 Greenwood Village, CO 80111	4. Expiration Date April 8, 2024
	5. Docket No. 40-09075 Reference No.

6. Byproduct Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum amount that Licensee May Possess at Any One Time Under This License
a. Natural Uranium	Any	a. Unlimited
b. Byproduct material as defined in 10 CFR 40.4	Unspecified	b. Quantity generated under operation authorized by this license

SECTION 9: Administrative Conditions

9.1 The authorized place of use shall be the licensee's Dewey-Burdock Project in Fall River and Custer Counties, South Dakota. The licensee shall conduct operations within the license boundaries shown in Figure 1.4-1 of the approved license application.

9.2 The licensee shall conduct operations in accordance with the commitments, representations, and statements contained in the license application dated February 28, 2009 (Accession No. ML091200014), which is supplemented by the submittals dated August 10, 2009 (Accession No. ML092870160); June 28, 2011 (Accession No. ML112071064); February 27, 2012 (Accession No. ML120620195); April 11, 2012 (Accession No. ML121030013); June 13, 2012 (Accession No. ML12173A038); June 27, 2012 (Accession No. ML12179A534); October 19, 2012 (Accession No. ML12305A056); July 3, 2014 (Accession No. ML14191A034); and September 25, 2014 (Accession No. ML14295A299).

The approved application and supplements are, hereby, incorporated by reference, except where superseded by specific conditions in this license. The licensee must maintain at least one copy of its complete, updated, and approved license application at the licensed facility. Unless otherwise specified, all references to the "license application" refer to the current, updated application including updates made per License Condition (LC) 9.4.

Whenever the words "will" or "shall" are used in the above referenced documents, it shall denote a requirement. The use of "verification" in this license with respect to a document submitted for NRC staff review means a written acknowledgement by U.S. Nuclear Regulatory Commission (NRC) staff that the specified submitted material is consistent with commitments in the approved license application, or requirements in a license condition or regulation. A verification will not require a license amendment.

[Applicable amendment: 1]

9.3 All written notices and reports sent to the U.S. Nuclear Regulatory Commission (NRC) as required under this license and by regulation shall be addressed as follows: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. An additional copy shall be submitted to: Deputy Director, Division of Decommissioning, Uranium Recovery, and Waste Programs, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Two White Flint North, 11545 Rockville Pike, Mail Stop T-8F5, Rockville, MD 20852-2738. Incidents and events that require telephone notification shall be made to the NRC Operations Center at (301) 816-5100 (collect calls accepted).

9.4 Change, Test, and Experiment License Condition

A) The licensee may, without obtaining a license amendment pursuant to 10 CFR 40.44, and subject to conditions specified in (B) of this condition:

i Make changes to the facility as described in the license application;

ii Make changes to the procedures as described in the license application; and

iii Conduct tests or experiments not described in the license application.

B) The licensee shall obtain a license amendment pursuant to 10 CFR 40.44 prior to implementing a proposed change, test, or experiment if the change, test, or experiment would:

i Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the license application;

ii Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a facility structure, equipment, or monitoring system (SEMS) important to safety previously evaluated in the license application;

iii Result in more than a minimal increase in the consequences of an accident previously evaluated in the license application;

iv Result in more than a minimal increase in the consequences of a malfunction of an SEMS previously evaluated in the license application;

v Create a possibility for an accident of a different type than any previously evaluated in the license application;

vi Create a possibility for a malfunction of an SEMS with a different result than previously evaluated in the license application;

vii Result in a departure from the method of evaluation described in the license application (as updated) used in establishing the final safety evaluation report (FSER), environmental impact statement (EIS), environmental assessment (EA) or technical evaluation reports (TERs) or other analysis and evaluations for license amendments.

viii For purposes of this paragraph as applied to this license, SEMS means any SEMS that has been referenced in a staff SER, TER, EA, or EIS and supplements and amendments thereof.

C) Additionally, the licensee must obtain a license amendment unless the change, test, or experiment is consistent with the NRC staff's previous conclusions, or the basis of or analysis leading to those conclusions, regarding actions, designs, or design configurations analyzed and selected in the site or facility SER, TER, and EIS or EA. This includes all supplements and amendments to the license, as well as all SERs, TERs, EAs, and EISs associated with amendments to this license.

D) The licensee's determinations concerning (B) and (C) of this condition shall be made by a Safety and Environmental Review Panel (SERP). The SERP shall consist of a minimum of three individuals. One member of the SERP shall have expertise in management (e.g., a Plant Manager) and shall be responsible for financial approval for changes; one member shall have expertise in operations and/or construction and shall have responsibility for implementing any operational changes; and one member shall be the radiation safety officer (RSO) or equivalent, with the responsibility of assuring changes conform to radiation safety and environmental requirements. Additional members may be included in the SERP, as appropriate, to address technical aspects such as groundwater or surface water hydrology, specific earth sciences, and other technical disciplines. Temporary members or permanent members, other than the three above-specified individuals, may be consultants.

E) The licensee shall maintain records of any changes made pursuant to this condition until license termination. These records shall include written safety and environmental evaluations made by the SERP that provide the basis for determining changes are in compliance with (B) of this condition. The licensee shall furnish, in an annual report to the NRC, a description of such changes, tests, or experiments, including a summary of the safety and environmental evaluation of each. In addition, the licensee shall annually submit to the NRC changed pages, which shall include both a change indicator for the area changed (e.g., a bold line vertically drawn in the margin adjacent to the portion actually changed) and a page change identification (date of change, change number, or both) for the operations plan and reclamation plan of the approved license application that reflects changes made under this condition.

9.5 Financial Assurance. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR Part 40, Appendix A, Criterion 9, to adequately cover the estimated costs of decommissioning and decontamination, if accomplished by a third party. This surety arrangement shall cover offsite disposal of radioactive solid process or evaporation pond residues, and groundwater restoration pursuant to 10 CFR Part 40, Appendix A Criterion 5B (5). The surety shall also include the costs associated with all soil and water sampling analyses necessary to confirm the accomplishment of decontamination.

Proposed annual updates to the financial assurance amount, consistent with 10 CFR Part 40, Appendix A, Criterion 9, shall be provided to the NRC 90 days prior to the anniversary date. The financial assurance anniversary date for the Dewey-Burdock Project will be the date on which the first surety instrument is approved by the NRC. If the NRC has not approved a proposed revision 30 days prior to the expiration date of the existing financial assurance arrangement, the licensee shall extend the existing arrangement, prior to expiration, for 1 year. Along with each proposed revision or annual update of the financial assurance estimate, the licensee shall submit supporting documentation, showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15-percent contingency of the financial assurance estimate, changes in engineering plans, activities performed, and any other conditions affecting the estimated costs for site closure. The licensee shall calculate pore volumes based on the actual screen lengths of injection and production wells and not by ore zone thickness.

Within 90 days of NRC approval of a revised closure (decommissioning) plan and its cost estimate, the licensee shall submit, for NRC review and approval, a proposed revision to the financial assurance arrangement if estimated costs exceed the amount covered in the existing arrangement. The revised financial assurance instrument shall then be in effect within 30 days of written NRC approval of the documents.

At least 90 days prior to beginning construction associated with any planned expansion or operational change that was not included in the annual financial assurance update, the licensee shall provide, for NRC review and approval, an updated estimate to cover the expansion or change. The licensee shall also provide the NRC with copies of financial-assurance-related correspondence submitted to the U.S. Environmental Protection Agency, a copy of the U.S. Environmental Protection Agency's financial assurance review, and the final approved financial assurance arrangement. The licensee also must ensure that the financial assurance instrument, where authorized to be held by a State or other Federal agency, identifies the NRC-related portion of the instrument and covers the activities discussed earlier in this license condition. The basis for the cost estimate is the NRC-approved site decommissioning and reclamation plan and any NRC approved revisions to the plan. Reclamation and decommissioning cost estimates and annual updates should follow the outline in Appendix C, "Recommended Outline for Site-Specific In Situ Leach Facility Reclamation and Stabilization Cost Estimates," to NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications—Final Report."

The licensee shall continuously maintain an approved surety instrument for the Dewey-Burdock Project in the amount of no less than $1,620,000, in favor of the NRC except for plugging and abandoning of all Class III and Class V injection wells, which will be maintained in favor of the U.S. Environmental Protection Agency.

The surety instrument shall be submitted for NRC staff review and approval 90 days prior to commencing operations.

[Applicable amendment: 1]

9.6 Release of surficially contaminated equipment, materials, or packages for unrestricted use shall be in accordance with the NRC guidance document "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," (the Guidelines) dated April 1993 (ADAMS Accession No. ML003745526) or suitable alternative procedures approved by NRC prior to any such release.

Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides shall apply independently.

Personnel performing contamination surveys for items released for unrestricted use shall meet the qualifications for health physics technicians or radiation safety officers defined in Regulatory Guide 8.31 (as revised). Personal effects (e.g., notebooks and flash lights) which are hand carried need not be subjected to the qualified individual survey or evaluation, but these items should be subjected to the same survey requirements as the individual possessing the items.

Regulatory Guide 8.30 (as revised), Table 2, shall apply to the removal to unrestricted areas of equipment, materials, or packages that have the potential for accessible surface contamination levels above background. The licensee shall submit to the NRC for review and written verification a contamination control program. The program shall provide sufficient detail to demonstrate how the licensee will maintain radiological controls over the equipment, materials, or packages that have the potential for accessible surface contamination levels above background, until they have been released for unrestricted use as specified in the Guidelines, and what methods will be used to limit the spread of contamination to unrestricted areas. The contamination control program shall demonstrate how the licensee will limit the spread of contamination when moving or transporting potentially contaminated equipment, materials, or packages (pumps, valves, piping, filters, etc.) from restricted or controlled areas through uncontrolled areas. The licensee shall receive written verification of the licensee's contamination control program from the NRC prior to implementing such a program in lieu of the recommendations in RG 8.30.

The licensee may identify a qualified designee(s) to perform surveys, associated with the licensee's contamination control program when moving or transporting potentially contaminated equipment, materials, or packages from restricted or controlled areas through uncontrolled areas and back into controlled or restricted areas. The qualified designee(s) shall have education, training, and experience, in addition to general radiation worker training, as specified by the licensee. The education, training, and experience required by the licensee for qualified designees shall be submitted to the NRC for review and written verification. The licensee shall receive written verification of its qualified designee(s) training program from the NRC prior to its implementation.

9.7 The licensee shall follow the guidance set forth in the current versions of NRC Regulatory Guides 8.22, "Bioassay at Uranium Recovery Facilities," 8.30, "Health Physics Surveys in Uranium Recovery Facilities," and 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposure at Uranium Recovery Facilities will be As Low As Is Reasonably Achievable (ALARA)" or NRC-approved equivalent measures.

9.8 Cultural Resources. Before engaging in any developmental activity not previously assessed by the NRC, the licensee shall administer a cultural resource inventory if such survey has not been previously conducted and submitted to the NRC. All disturbances associated with the proposed development will be completed in compliance with the National Historic Preservation Act (as amended) and its implementing regulations (36 CFR Part 800), as well as the Archaeological Resources Protection Act (as amended) and its implementing regulations (43 CFR Part 7).

In order to ensure that no unapproved disturbance of cultural resources occurs, any work resulting in the discovery of previously unknown cultural artifacts shall cease. The artifacts shall be inventoried and evaluated in accordance with 36 CFR Part 800, and no disturbance of the area shall occur until the

licensee has received authorization from the NRC, the South Dakota State Historic Preservation Officer, and the Bureau of Land Management (if on Bureau of Land Management Land) to proceed.

The licensee shall comply with the terms and conditions included in a Programmatic Agreement (PA) executed on April 7, 2014 (ADAMS Accession No. ML14066A344) that was developed to protect cultural resources within the Dewey-Burdock project boundary. If the PA is terminated, the licensee shall comply with Stipulation 16(c) of the PA. Therefore, in the event the PA is terminated, Powertech is required to follow the terms and conditions provided in the PA for on-going ground-disturbing activities, and is not permitted to begin ground-disturbing activities in unevaluated areas, until the NRC completes consultation and a new PA is executed, or the NRC has requested, taken into account, and responded to the comments of the ACHP under 36 CFR § 800.7(c)(4).

9.9 The licensee shall dispose of solid byproduct material from the Dewey-Burdock Project at a site that is licensed by the NRC or an NRC Agreement State to receive byproduct material. The licensee's approved solid byproduct material disposal agreement must be maintained on site. In the event that the agreement expires or is terminated, the licensee shall notify the NRC within seven working days after the date of expiration or termination. A new agreement shall be submitted for NRC staff review and written verification within 90 days after expiration or termination, or the licensee will be prohibited from further lixiviant injection.

9.10 The results of the following activities, operations, or actions shall be documented: sampling; analyses; surveys or monitoring; survey/ monitoring equipment calibrations; reports on audits and inspections; all meetings and training courses; and any subsequent reviews, investigations, or corrective actions required by NRC regulation or this license. Unless otherwise specified in a license condition or applicable NRC regulation, all documentation required by this license shall be maintained at the site until license termination, and is subject to NRC review and inspection.

9.11 The licensee is hereby exempted from the requirements of 10 CFR 20.1902(e) for areas within the facility, provided that all entrances to the facility are conspicuously posted with the words, "CAUTION: ANY AREA WITHIN THIS FACILITY MAY CONTAIN RADIOACTIVE MATERIAL."

SECTION 10: Operations, Controls, Limits, and Restrictions

Standard Conditions

10.1 The licensee shall use a lixiviant composed of native groundwater and a combination of carbon dioxide and gaseous oxygen, as specified in the approved license application.

10.2 Facility Throughput. The Dewey-Burdock Project throughput shall not exceed an average annual flow rate of 4,000 gallons per minute, excluding restoration flow. The annual production of yellowcake shall not exceed 1 million pounds.

10.3 At least 12 months prior to initiation of any planned final site decommissioning, reclamation, or groundwater restoration, the licensee shall submit a detailed decommissioning plan for NRC staff review and approval. The plan shall represent as-built conditions at the Dewey-Burdock Project.

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10.4 The licensee shall have written standard operating procedures (SOPs) prior to operations for:

A) All routine operational activities involving radioactive and nonradioactive materials associated with licensed activities that are handled, processed, stored, or transported by employees;

B) All routine nonoperational activities involving radioactive materials, including in-plant radiation protection, quality assurance for the respirator program, and environmental monitoring; and

C) Emergency procedures for potential accidents/unusual occurrences, including significant equipment or facility damage, pipe breaks and spills, loss or theft of yellowcake or sealed sources, significant fires, and other natural disasters.

The SOPs shall include appropriate radiation safety practices to be followed in accordance with 10 CFR Part 20. SOPs for operational activities shall enumerate pertinent radiation safety practices to be followed. Current copies of the SOPs shall be kept in the area(s) of the production facility where they are utilized. These SOPs are subject to inspection, including the preoperational inspection specified in LC 12.3.

10.5 Mechanical Integrity Tests (MITs). The licensee shall construct all wells in accordance with methods described in Sections 3.1.2.2 and 3.1.2.3 of the approved license application. The licensee shall perform well MITs on each injection and production well before the wells are utilized and on wells that have been serviced with down hole drilling or reaming equipment or procedures that could damage the well casing. Additionally, the licensee shall retest each well at least once every 5 years. The licensee shall perform MITs in accordance with Section 3.1.2.4 of the licensee's approved license application. Any failed well casing that cannot be repaired to pass the MIT shall be appropriately plugged and abandoned in accordance with Section 6.1.8 of the approved license application.

10.6 Groundwater Restoration. The licensee shall conduct groundwater restoration activities in accordance with Section 6.1 of the approved license application. Permanent cessation of lixiviant injection in a production area would signify the licensee's intent to shift from the principal activity of uranium recovery to the initiation of groundwater restoration and decommissioning for any particular production area. If the licensee determines that these activities are expected to exceed 24 months for any particular production area, the licensee shall submit an alternate schedule request that meets the requirements of 10 CFR 40.42.

Restoration Standards. Hazardous constituents in the groundwater shall be restored to the numerical groundwater protection standards required by 10 CFR Part 40, Appendix A, Criterion 5B(5). In submitting any license amendment application requesting review and approval of proposed alternate concentration limits (ACLs) pursuant to Criterion 5B(6), the licensee must show that it has first made practicable effort to restore the specified hazardous constituents to the background or maximum contaminant levels (whichever is greater).

Restoration Stability Monitoring. The licensee shall conduct sampling of all constituents of concern on a quarterly basis during restoration stability monitoring. The sampling shall include the specified production zone aquifer wells. The applicant shall continue the stability monitoring until the data show that the most recent four consecutive quarters indicate no statistically significant increasing trend for all constituents of concern that would lead to an exceedance above the respective standard in 10 CFR Part 40, Appendix A, Criterion 5B(5).

Notwithstanding the LC 9.4 change process, the licensee shall not implement any changes to groundwater restoration or post-restoration monitoring plans without written NRC verification that the criteria in LC 9.4 do not require a license amendment. The licensee shall submit all changes to groundwater restoration or post-restoration monitoring plans to the NRC staff, for review and written verification, at least 60 days prior to commencement of groundwater restoration in a production area.

10.7 The licensee shall maintain a net inward hydraulic gradient at a wellfield as measured from the surrounding perimeter monitoring well ring starting when lixiviant is first injected into the production zone and continuing until initiation of the stabilization period.

10.8 The licensee is permitted to construct and operate storage and treatment ponds, as described in Section 4.2 of the approved license application. Routine pond inspections will be conducted consistent with inspection procedures described in Regulatory Guide 3.11.

10.9 The licensee shall establish and conduct an effluent and environmental monitoring program in accordance with those programs described in Section 5.7.8 and Section 5.7.7 of the approved license application.

Facility Specific Conditions

10.10 Hydrologic Test Packages.

A) Prior to principal activities in a new wellfield, the licensee shall submit a hydrologic test package to the NRC at least 60 days prior to the planned start date of lixiviant injection. The hydrologic test package for B-WF-1 or D-WF-1, whichever is developed first, will be submitted for review and written verification while the remaining hydrologic test packages will be submitted for NRC staff review except as described in paragraph B of this License Condition. In each hydrologic test data package, the licensee will document that all perimeter monitoring wells are screened in the appropriate horizon in order to provide timely detection of an excursion. Contents of a wellfield package shall include:

- A description of the proposed wellfield (location, extent, etc.).
- Map(s) showing the proposed production and injection well patterns and locations of all monitor wells.
- Geologic cross sections and cross section location maps.
- Isopach maps of the production zone sand and overlying and underlying confining units.
- Discussion of aquifer test procedures, including well completion reports.
- Discussion of the results and conclusions of aquifer tests, including raw data, drawdown match curves, potentiometric surface maps, water level graphs, drawdown maps and, when appropriate, directional transmissivity data and graphs.
- Sufficient information to show that wells in the monitor well ring are in adequate communication with the production patterns.
- All raw analytical data for Commission-approved background water quality.
- Summary tables of analytical data showing computed Commission-approved background water quality.
- Descriptions of statistical methods for computing Commission-approved background water quality.

- Any other information pertinent to the proposed wellfield area tested will be included and discussed.

B) The licensee will submit, for NRC review and approval, hydrologic test packages for wellfields BWF-6, -7, and -8. No extraction will be permitted in these wellfields until the staff approves the hydrologic package. Hydrologic packages shall include all the information in paragraph A of this license condition and aquifer test results that address the partially unsaturated conditions of the Chilson Aquifer in these wellfields. These hydrologic packages will also contain a justification for well spacings in the monitoring well ring and overlying and underlying aquifers.

10.11 The licensee is prohibited from using the "glue and screw" method of joining well casings to construct any monitoring, injection, or production well.

10.12 If land application is utilized, the licensee will implement a pre operational and operational sampling plan, as discussed in Section 6.0 of the licensee's Groundwater Discharge Plan submitted to and per the conditions in its Groundwater Discharge Plan permit issued by the South Dakota Department of Environment and Natural Resources, until principal activities at the land application areas cease.

10.13 The licensee shall conduct radiological characterization of airborne samples for natural U, Th-230, Ra-226, Po-210, and Pb-210 for each restricted area air particulate sampling location at a frequency of once every 6 months for the first 2 years following issuance of the initial license, and annually thereafter to ensure compliance with 10 CFR 20.1204(g). The licensee shall also evaluate changes to plant operations to determine if more frequent radionuclide analyses are required for compliance with 10 CFR 20.1204(g).

10.14 The licensee shall ensure radiation safety training is consistent with the current versions of Regulatory Guide 8.13, "Instruction Concerning Prenatal Radiation Exposure," Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Radiation Exposure," and Section 2.5 of Regulatory Guide 8.31, or NRC-approved equivalent guidance.

SECTION 11: Monitoring, Recording, and Bookkeeping Requirements

Standard Conditions

11.1 In addition to reports required to be submitted to NRC or maintained on-site by Title 10 of the Code of Federal Regulations, the licensee shall prepare the following reports related to operations at the facility:

A) Quarterly reports that include a summary of excursion parameter concentrations, wells placed on or removed from excursion status, corrective actions taken, and the results obtained for all wells that were on excursion status during that quarter. These reports shall be submitted to NRC within 60 days following completion of the reporting period.

B) Semiannual reports that discuss the status of wellfields in operation (including last date of lixiviant injection), progress of wellfields in restoration and restoration progress, status of any long-term excursions, and a summary of MITs during the reporting period. These reports shall be submitted to NRC within 60 days following completion of the reporting period.

C) Quarterly reports summarizing daily flow rates for each injection and production well and injection manifold pressures on the entire system. These reports shall be made available for inspection upon request.

D) Consistent with Regulatory Position 2 of Regulatory Guide 4.14, semiannual reports that summarize the results of the operational effluent and environmental monitoring program. The licensee shall submit these reports consistent with the terms of Regulatory Guide 4.14.

11.2 The licensee shall submit to the NRC the results of its annual review of its radiation protection program content and implementation performed in accordance with 10 CFR 20.1101(c). These results shall include an analysis of dose to individual members of the public consistent with 10 CFR 20.1301 and 10 CFR 20.1302.

11.3 Establishment of Commission-Approved Background Water Quality. Prior to injection of lixiviant in each production wellfield, as defined by the licensee, the licensee shall establish Commission-approved background groundwater quality data for the ore zone, overlying aquifers, underlying aquifers, alluvial aquifers (where present), and the perimeter monitoring areas. Commission-approved background sampling will be performed in accordance with Section 5.7.8 of the approved license application, and samples shall be analyzed for the parameters listed in Table 6.1-1 of the approved application. The licensee shall submit any revisions to its Commission-approved background water quality sampling plan to the NRC staff for review and approval.

11.4 Establishment of UCLs. Prior to injection of lixiviant into each production wellfield, as defined by the licensee, the licensee shall establish excursion parameters and their respective upper control limits (UCLs) in the designated overlying aquifer(s), underlying aquifer, and perimeter monitoring areas in accordance with Section 5.7.8 of the approved license application. Unless otherwise determined, the site-specific excursion parameters are chloride, conductivity, and total alkalinity. The UCLs shall be established for each excursion control parameter and for each well based on the mean plus five standard deviations of the data collected for LC 11.3. The UCL for chloride can be set at the sum of the background mean concentration and either (a) five standard deviations or (b) 15 mg/L, whichever sum provides the higher limit. The licensee shall submit any revisions to its plan for establishing UCLs to the NRC staff for review and approval.

11.5 Excursion Monitoring. Monitoring for excursions shall occur twice monthly, and no more than 14 days apart in any given month during operations, for all wells where UCLs have been established per Section 5.7.8 of the approved license application. If a designated monitor well is not sampled within 14 days of a previous sampling event, the reasons for this postponement shall be documented. Sampling shall not be postponed for more than 5 days.
If the concentrations of any two excursion indicator parameters exceed their respective UCL or any one excursion indicator parameter exceeds its UCL by 20 percent, the excursion criterion is exceeded and a verification sample shall be taken from that well within 48 hours after results of the first analyses are received. If the verification sample confirms that the excursion criterion is exceeded, the well shall be placed on excursion status. If the verification sample does not confirm that the excursion criterion is exceeded, a third sample shall be taken within 48 hours after the results of the verification sample are received. If the third sample shows that the excursion criterion is exceeded, the well shall be placed on excursion status. If the third sample does not show that the excursion criterion is exceeded, the first sample shall be considered an error and routine excursion monitoring will be resumed (the well is not placed on excursion status).

Upon confirmation of an excursion, the licensee shall notify NRC, as discussed below, implement corrective action, and increase the sampling frequency for the excursion indicator parameters at the well on excursion status to at least once every 7 days. Corrective actions for confirmed excursions may be, but are not limited to, those described in Section 5.7.8 of the approved license application. An excursion is considered corrected when concentrations of all indicator parameters are below the concentration levels defining the excursion for three consecutive weekly samples.

If an excursion is not corrected within 60 days of confirmation, the licensee shall either (a) terminate injection of lixiviant within the wellfield until the excursion is corrected; or (b) increase the surety in an amount to cover the full third-party cost of correcting and cleaning up the excursion. The surety increase shall remain in force until the NRC has verified that the excursion has been corrected and remediated. The written 60-day excursion report shall identify which course of action the licensee is taking. Under no circumstances does this condition eliminate the requirement that the licensee remediate the excursion to meet groundwater protection standards as required by LC 10.6 for all constituents established per LC 11.3.

The licensee shall notify the NRC Project Manager (PM) by telephone or email within 24 hours of confirming a lixiviant excursion, and by letter within 7 days from the time the excursion is confirmed, pursuant to LC 11.6 and 9.3. A written report describing the excursion event, corrective actions taken, and the corrective action results shall be submitted to the NRC within 60 days of the excursion confirmation. For all wells that remain on excursion status after 60 days, the licensee shall submit a report as discussed in LC 11.1(A).

11.6 Until license termination, the licensee shall maintain documentation on unplanned releases of source or byproduct material (including process solutions) and process chemicals. Documented information shall include, but not be limited to, the date, spill volume, total activity of each radionuclide released, radiological survey results, soil sample results (if taken), corrective actions, results of postremediation surveys (if taken), a map showing the spill location and the impacted area, and an evaluation of NRC reporting criteria.

The licensee shall have written procedures for evaluating the consequences of the spill or incident/event against 10 CFR Part 20, Subpart M, "Reports," and 10 CFR 40.60 reporting criteria. If the criteria are met, the licensee shall report to the NRC Operations Center as required.

If the licensee must report any production area excursion or spill of source material, byproduct material, or process chemicals that may have an impact on the environment, or any other incident/event, to any State or other Federal agency, the licensee shall make a report to the NRC Headquarters Project Manager (PM) by telephone or electronic mail (e-mail) within 24 hours. In accordance with LC 9.3, this notification shall be followed, within 30 days of the notification, by submittal of a written report to NRC Headquarters detailing the conditions leading to the spill or incident/event, corrective actions taken, and results achieved.

Facility Specific Conditions

11.7 The licensee shall submit semi-annual reports that present the flow rates and volumes of liquid effluent discharged to Class V disposal wells and land application areas, influent flow rates into satellite and central processing plants, and bleed rates. The first report is due no later than 12 months after the start of operations, and shall account for all effluent discharges and inflows during the previous 12 months.

11.8 After the initial land use update discussed in LC 12.15, every 12 months thereafter the licensee shall submit a land use update report for NRC staff review, until groundwater restoration and decommissioning are completed and approved by the NRC.

SECTION 12.0: Preoperational Conditions

Standard Conditions

12.1 Prior to commencement of operations in any production area, the licensee shall obtain all necessary permits, licenses, and approvals from the appropriate regulatory authorities. The licensee shall also submit a copy of all permits for its Class III and Class V underground injection wells to the NRC.

12.2 Prior to commencement of operations, the licensee shall coordinate emergency response requirements with local authorities, fire department, medical facilities, and other emergency services. The licensee shall document these coordination activities and maintain such documentation on-site.

12.3 The licensee shall not commence operations until the NRC performs a preoperational inspection to confirm, in part, that written operating procedures and approved radiation safety and environmental monitoring programs are in place, and that preoperational testing is complete. The licensee should notify the NRC, at least 90 days prior to the expected commencement of operations, to allow the NRC sufficient time to plan and perform the preoperational inspection.

12.4 The licensee shall identify the location, screen depth, and estimated pumping rate of any new groundwater wells or new use of an existing well within the license area and within 2 kilometers (1.25 miles) of any proposed wellfield boundary, as measured from the perimeter monitoring well ring, since the application was submitted to the NRC. The licensee shall evaluate the impact of ISR operations to potential groundwater users and recommend any additional monitoring or other measures to protect groundwater users. The evaluation shall be submitted to the NRC for review within 6 months of discovery of such well use.

12.5 Prior to commencement of operations, the licensee shall submit the qualifications of radiation safety staff members for NRC staff review and written verification.

12.6 Prior to commencement of operations, the licensee shall submit a copy of the solid byproduct material disposal agreement to the NRC.

Facility Specific Conditions

12.7 At least 60 days prior to construction, the licensee will propose in writing, for NRC review and written verification, a monitoring well network for the Fall River Aquifer in the Burdock area for those wellfields in which the Chilson Aquifer is the extraction zone.

12.8 The licensee will continue to collect additional meteorological data on a continuous basis at a data recovery rate of 90 percent until the data collected is determined by the NRC staff to be representative of long-term conditions. Justification of the similarity or validity of the data will include analysis of the statistical data presented to illustrate confidence in the representativeness of the data. The data collected shall include, at a minimum, wind speed, wind direction, and an annual wind rose. The submittal shall include a summary of the stability classification.

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12.9 The licensee shall submit preoperational surface water analytical data for the new surface water sampling locations to the NRC for review and written verification within 3 months of the initiation of operations. Surface water analytical data shall be of the same completeness (e.g. parameters, quality of analyses, and frequency) as the data provided in the licensee's June 2011 submittal (ADAMS Accession No. ML112071064).

12.10 Prior to commencement of operations, the licensee will collect four quarterly groundwater samples from each well within 2 km (1.25 mi) of the boundary of any wellfield, as measured from the perimeter monitoring well ring. This data shall be submitted to the NRC staff for review and written verification. Furthermore, all domestic, livestock, and crop irrigation wells within 2 km (1.25 mi) of the boundary of any wellfield, as measured from the perimeter monitoring well ring, will be included in the routine environmental sampling program provided that well owners consent to sampling and the condition of the wells renders them suitable for sampling.

12.11 No later than 30 days prior to construction, the licensee will provide additional statistical analysis of the soil sampling data and gamma measurements to establish sufficient statistical relationships. If such relationships are not sufficient for use at the site, additional procedures or data shall be submitted to the NRC staff for review and written verification.

12.12 No later than 30 days before the start of operations, the licensee shall provide the NRC staff, for review and written verification, its procedures for documenting the wellfield inspections. These procedures shall include the personnel tasked with performing these inspections, items to be inspected, criteria for determining upset conditions, and the manner in which the inspections will be documented.

12.13 No later than 30 days prior to the preoperational inspection, the licensee shall provide to the NRC staff, for review and written verification, its procedures for preparing logs of the dryer and emissions control system performance in accordance with 10 CFR Part 40, Appendix A, Criterion 8. The procedure shall include the manner in which logs for inspection will be produced and maintained at the Dewey-Burdock Project. These procedures shall also specify specific job functions or categories of personnel responsible for responding to malfunctions of the dryer and emissions control system and the manner in which such responsible persons are notified of malfunctions.

12.14 No later than 90 days before the start of operations, the licensee shall provide, for the NRC Staff review and written verification, the qualifications and training required for RSO designees for reviewing and issuing radiation work permits.

12.15 No later than 30 days before the start of operations, the licensee shall submit a report for NRC staff review updating land use descriptions within the Dewey-Burdock Project and within 2 miles of the license boundary. This report shall identify actual land use changes, new structures and the purpose, and new water supply wells and the purpose.

12.16 At least 30 days prior to the preoperational inspection, the licensee shall provide a list of its instrumentation to be used during operations, including the manufacturer, model number or a description, and the range of sensitivity of the radiation survey meters for measuring beta radiation. The licensee shall also provide a plan for conducting beta surveys in process areas.

12.17 No later than 30 days before the preoperational inspection, the licensee shall submit to the NRC staff, for review and written verification, an acceptable method to ensure the soluble intake of uranium will be ALARA.

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12.18 The licensee shall submit to the NRC staff for review and written verification the procedures by which it will ensure that unmonitored employees will not exceed 10 percent of the dose limits in 10 CFR Part 20, Subpart C.

12.19 The licensee shall prepare a bioassay QA/QC procedure that is consistent with Regulatory Guide 8.22. This procedure shall be made available for NRC staff review and written verification during the preoperational inspection.

12.20 No later than 30 days before the preoperational inspection, the licensee shall develop a survey program for beta-gamma contamination for personnel exiting from restricted areas that complies with the requirements of 10 CFR Part 20, Subpart F.

12.21 The licensee shall provide, for NRC staff review and written verification, the surface contamination detection capability (scan MDC) for radiation survey meters used for contamination surveys to release equipment and materials for unrestricted use and for personnel contamination surveys. The detection capability in the scanning mode for the alpha and beta-gamma radiation expected shall be provided in terms of dpm per 100 cm^2.

12.22 No later than 30 days before the preoperational inspection, the licensee shall provide to the NRC staff, for review and written verification, written procedures for its airborne effluent and environmental monitoring program that:

A. Discuss how, in accordance with 10 CFR 40.65, the quantity of the principal radionuclides from all point and diffuse sources will be accounted for in, and verified by, surveys and/or monitoring.

B. Evaluate the member(s) of the public likely to receive the highest exposures from licensed operations consistent with 10 CFR 20.1302.

C. Discuss and identify how radon (radon-222) progeny will be factored into analyzing potential public dose from operations consistent with 10 CFR Part 20, Appendix B, Table 2.

D. Discuss how, in accordance with 10 CFR 20.1501, the occupational dose (gaseous and particulate) received throughout the entire License Area from licensed operations will be accounted for, and verified by, surveys and/or monitoring.

12.23 [Deleted by Amendment 1]

12.24 At least 60 days prior to the preoperational inspection, the licensee will submit a completed Quality Assurance Project Plan (QAPP) to the NRC for review to verify that the QAPP will be consistent with Regulatory Guide 4.15 (as revised).

12.25 No later than 60 days prior to construction, the licensee shall submit to the NRC for review and written verification, a pond detection monitoring plan that contains the number, locations, and screen depths of groundwater monitoring wells to installed around the Burdock area and Dewey area ponds.

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The plan shall also include sampling frequency and sampling parameters. Monitoring wells installed to comply with the licensee's Groundwater Discharge Permit issued by the State of South Dakota may be incorporated into this monitoring network.

FOR THE NUCLEAR REGULATORY COMMISSION

Date: 11/1/16

/RA/
Andrea Kock, Deputy Director
Division of Decommissioning, Uranium Recovery, and Waste Programs
Office of Nuclear Material Safety and Safeguards