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RULES AND REGULATIONS
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Cindy Bladey
Office of Administration
Mail Stop: OWFN-12-H08
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

7/21/2016

RECEIVED

81 FR 47442

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RE: Draft Environmental Impact Statement for the Reno Creek In Situ Recovery Project,
CEQ# 20160164

Dear Ms. Bladey:

The U.S. Environmental Protection Agency Region 8 has reviewed the U.S. Nuclear Regulatory Commission's (NRC's) Draft Environmental Impact Statement (Draft EIS) for the proposed Reno Creek In Situ Recovery (ISR) Project in Campbell County, Wyoming. Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C) and Section 309 of the Clean Air Act (CAA), 42 U.S.C. Section 7609.

Project Background

In October 2012, AUC, LLC (AUC) submitted an application to the NRC for a new source and byproduct materials license for the Reno Creek ISR Project. The Reno Creek Draft EIS (supplement to NRC's Generic EIS for In-Situ Leach Uranium Milling Facilities) analyzes environmental impacts associated with a proposal from AUC, LLC (applicant) to recover uranium using the in situ leach process. The proposed project would also include processing facilities and fifteen sequentially developed production units with one to seven wellfields per production unit. The project is located between the communities of Wright, Edgerton, and Gillette. The total land area of the proposed Reno Creek ISR Project is 2,451 hectares or 6,057 acres of mostly private land. The Draft EIS analyzes two alternatives: the Proposed Action (alternative 1) and No-Action (alternative 2).

General Comments

We appreciate the NRC's efforts to provide a comprehensive description of potential public radiation exposures that are supported by background data and modeling for the anticipated operations. Our concerns that remain regard the accuracy of the underground injection control information, adequate protection of groundwater resources through identification of aquifers and monitoring, air quality conclusions and mitigation measures, and greenhouse gas (GHG) and climate change. We also have included a recommendation related to potential changes to 40 CFR Part 192.

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Add= J. Carverly (Jsc1)

Underground Injection Control (UIC) Wells

Many of our UIC comments relate to accuracy of the Draft EIS text and tables. Our comments cover definitions, permits implementation, and aquifer exemption approval. Wyoming Department of Environmental Quality (WDEQ) has primacy for the UIC program but cannot grant aquifer exemptions. Since this is an important component of the Reno Creek ISR project, the accuracy of this information in the Final EIS is important.

Table 1-2 on Draft EIS page 1-10 can be misleading. Although the applicant has submitted required documentation to WDEQ, the aquifer exemption for the UIC Class I wells has not been granted. Per the WDEQ Class I permit, a water sample from the injection zone is required prior to allowing the applicant to use the injection wells. Should the groundwater sample show that this aquifer is an Underground Source of Drinking Water (USDW), the applicant may not begin injection until an aquifer exemption approval from the EPA has been issued. Text on pages 2-18 and 2-39 and in other chapters of the Draft EIS also need to be modified to clarify that the aquifer exemption is required prior to injection of waste in the Class I wells.

The definition for the well classes in the table on page 2-12 is not accurate. For instance, Class I injection of waste does not have to occur thousands of meters below the lowermost USDW, Class II is for oil and gas production (not just natural gas) and Class IV is for hazardous and radioactive waste and does not include non-hazardous waste. We recommend using the definitions from 40 CFR 144 for all well classes and also noting that Class IV wells are now banned.

The Code of Federal Regulation (CFR) quote on page 2-13, lines 33 through 35 need a few edits to be correct. Although these edits seem small, they significantly change the meaning. This text with corrections in bold font is: "if (i) it does not currently serve as a source of drinking water, and **(ii)** it cannot now and ~~would~~ **will** not in the future serve as a source of drinking water because it is mineral, hydrocarbon, or geothermal energy producing, ~~(iii)~~ or it can be demonstrated by a permit applicant as part of a permit application for a Class III operation to contain minerals that, considering their quantity and location, are expected to be commercially producible."

Draft EIS page 2-28, lines 19-20 state, "An aquifer exemption is granted by WDEQ and requires EPA approval." WDEQ identifies and requests the aquifer to be exempt and the EPA approves the request. WDEQ does not grant aquifer exemptions as stated in the text.

The critical word "not" is missing from the last sentence (lines 9-11) of the first paragraph on page 2-46. The aquifer exemption has not been issued for the Class I wells.

Also on page 2-46, Class V disposal wells are discussed. We suggest this section explain that in addition to the effluent needing to meet WDEQ regulations prohibiting injection of hazardous waste, the injection material cannot be radioactive as defined by the UIC program.

Protection of Ground and Surface Water Resources

Excursion Monitoring, Confining Layers, and Aquifer Identification and Use

Several chapters of the Draft EIS mention excursion monitoring and using overlying and underlying monitoring wells to help detect excursions. A number of these discussions reference the Generic EIS (GEIS) for In-Situ Leach Uranium Milling Facilities ISR projects and provide limited project specific information. In the GEIS, excursions are defined as horizontal or vertical movement of lixiviant from the production zone and beyond the well field boundaries. It might be useful to more fully explain excursions in the Final EIS as the public may not be familiar with the GEIS.

The Draft EIS seems to rely on the GEIS findings that potential for vertical excursions is "small" (page 4-39 to 4-40). Specific information supporting that conclusion for this project is minimal, and appears to be based on one permeability test each for the overlying (page 3-44) and underlying (page 3-46) aquitards and the determination that the low hydraulic conductivity value of the aquitards "limit the potential impact of vertical excursions." Excursion monitoring specific to this project in the overlying aquifer is discussed in Chapter 7 (pages 7-9 to 7-10); however, there is no discussion of the underlying monitoring wells. The potential for excursions can vary substantially by project site, and we therefore recommend a more robust site-specific analysis be provided in the Final EIS.

Furthermore, the Draft DEIS states: "potentiometric head measurements in wells within the proposed project area exhibit a consistent downward gradient;" and, "in Wyoming, the potentiometric surface of the Lower Tertiary aquifers [location of production zone] is higher than the underlying Upper Cretaceous aquifers [below the production zone]; consequently, groundwater moves vertically downward from the Lower Tertiary aquifers, to the Upper Cretaceous aquifers, through the confining layer separating the two aquifers," (page 3-33). This information means the groundwater has a tendency to move in the downward direction and moves from the production zone aquifer to lower aquifers if such a path is available. This information verifies the importance of monitoring wells in the underlying aquifer to help detect excursions that may be caused by any number of factors. We recommend adding discussion about the monitoring of the underlying aquifers. This discussion should include:

- the location of both the overlying and underlying monitoring wells,
- the depth of the wells and relationship to the production zone,
- the frequency of monitoring, and
- how these wells are, or will be, installed to prevent connection between the production zone and the lower aquifers.

We also suggest the physical separation of the production zone from lower and upper aquifers be explained in more detail and in lay terms so anyone reading the EIS can understand the information. For instance, page 3-35 states that "a potential for vertical leakage from the overlying Wasatch and Fort Union Formations exists." Although the document states that the applicant cites low vertical hydraulic conductivities as the reason to expect minimal vertical leakage, as stated on page 4-30, "if the confining layers do not effectively isolate the ore-bearing aquifer from the hydrogeological system, the aquifers above and below the uranium-bearing aquifer can be adversely affected during ISR operations and aquifer restoration." Of particular concern is the potential for contamination of extensive regional aquifers, such as the underlying Fox Hills (page 3-33 to 3-35), especially if it is only isolated from the production zone aquifer by a potentially leaky aquitard.

With regard to the overlying aquifer, executive summary page xxv states that, "Alluvial aquifers are separated from production zone and surrounding aquifers by aquitards (confining units) and, therefore, are not hydraulically connected to production zone and surrounding aquifers." The Draft EIS further explains that, "The upper Wasatch Formation has been eroded away in the proposed project area," indicating that the lower Wasatch not only contains the production zone aquifer, but also provides shallow water for local uses. In other areas of the document, "shallow aquifer" is referenced and used to discuss the discontinuous aquifer above the production zone. To eliminate confusion, we recommend differentiating the terms (alluvial versus shallow aquifer) and describing to what extent alluvial aquifers are present, where they are found, whether or not they are in use, and if applicable, the type of uses. A map depiction of the alluvial aquifer locations in relation to the project would provide a helpful visual.

Additionally, three different terms are used throughout the document to describe the aquitard - "confining layer," "confining unit," and "confining zone." Although it appears most of the time, confining layer is used when referencing the GEIS and confining unit is used when specific to the project, we suggest clarifying the use and meaning of these terms to prevent any confusion.

Lastly, it is important to identify all aquifers that qualify as USDWs, including those deeper than the Fox Hills formation. USDWs include all waters with total dissolved solids (TDS) up to 10,000 mg/L as defined by the Safe Drinking Water Act (SDWA). The Draft EIS does not clearly identify what deeper aquifers meet the USDW requirements and appears to disregard aquifers labeled "too deep" from USDW classification. "Too deep" and "too saline," unless over 10,000 mg/L TDS, do not disqualify aquifers from being USDWs. As noted on page 3-35 to 3-36, some of the deep aquifers are currently used for public water supply. For instance, the Madison Limestone is used by the nearby city of Gillette. In order to understand the complete regional groundwater picture, all USDW aquifers should be identified.

Water Consumptive Use

The document discusses water consumptive use, its impacts, and potential ways to reduce consumptive use. However, this discussion is in relative terms to different stages of the project or in relation to GEIS conclusions. In this site-specific analysis it is important to provide actual estimates of groundwater consumptive uses. This is especially important when looking at long-term cumulative impacts and other foreseeable actions that might impact the same aquifer.

Project Drinking Water

The Draft EIS states that potable water through a well will be supplied at the project site. It would be helpful to include information on the aquifer this well will draw from and the estimated amount of water use so that any impacts from it can be included in the EIS.

Surface Water Resources

Table 3-9 describes types of wetlands identified in the project area. It would be helpful to include a map displaying the types and locations of wetlands within the project area. This would provide a picture of the wetlands in relation to the proposed central processing plant (CPP) and well field locations.

It is not possible to read the legend, and thus understand the map depicted in Figure 3-13 (page 3-27). Also, since it is presented in gray-scale, it is difficult to delineate the 100-year flood plain. Please consider enlarging the figure legend and illuminating the 100-year flood plain boundary.

We suggest including the applicant-proposed surface water resource mitigation measures listed in Table 6-1 in the Record of Decision (ROD) and/or license requirements to help protect and mitigate potential impacts to surface and shallow groundwater resources.

Air Quality

Throughout the executive summary (e.g., line 16 on page xxii and line 5 on page xxiii), the Draft EIS states that construction activities are anticipated to take one to two years. All the associated impacts with construction are considered "small" based partly on this short construction duration. However, the 1-2 years construction duration is misleading. As noted elsewhere in the document and on Figure 2-1, the CPP will take about one year to construct and each well field will take one to two years to construct over a period of nine years. Thus, the impacts associated with construction, including noise and air quality, are not limited to 1-2 years, but occur for nine years. Although this is stated correctly when the project schedule is described (page 2-22 lines 2-4), we suggest clarifying in the executive summary that construction, and the impacts associated with construction, occurs over nine years and is often concurrent with other project phases.

Emissions from construction of the CPP and well fields will primarily result from mobile source diesel exhaust (including earthmoving and the use of drill rigs) and fugitive dust from disturbed areas and travel on unpaved roads. There are two residential properties within two miles of the project area in the prevailing downwind direction.

As a cooperating agency, the EPA previously made comments regarding the air quality modeling analysis and the methods for disclosing air impacts. In particular, we expressed concerns that the air quality assessment lacked emissions representing a reasonable worst-case scenario and analyses of annual exceedances. We continue to have concerns with the air quality assessment. To address these concerns and uncertainties, we recommend mitigation for the two primary emission sources and support the implementation of the air quality mitigation measures identified by the NRC in Table 6-2. Specifically, we recommend requiring the use of Tier 2 or better drill rigs, implementing a no-idle rule, ensuring all diesel-powered equipment and drill rigs are properly maintained, and developing and implementing a fugitive dust control plan.

We also recommend that both the mitigation measures identified by the NRC in Table 6-2 and the applicant committed mitigation listed on page 4-10, (enforcing speed limits for AUC employees and contractors, performing routine assessments of road conditions, and working with Campbell County to provide necessary upgrades to affected portions of the county road system), be required and included in the ROD and/or license requirements.

GHG and Climate Change

Section 3.7.2.2 in the Description of Effected Environment chapter includes general information about greenhouse gas (GHG) and climate change. Chapter 5, Cumulative Effects, provides additional text about general GHG and climate change emissions. Chapter 5 also contains specific information on the GHG emission from the project and the quantified carbon dioxide for the peak project year.

Although the impact from all sources of GHG contribute to a cumulative GHG impact, it may be more useful if the project specific GHG and climate change discussion was located in Chapter 4, Environmental Impacts of Construction, Operations, Aquifer Restoration, and Decommissioning Activities and Mitigation Actions. The discussion on how the specific project GHGs contribute to overall GHG impacts would remain in Chapter 5. If the NRC chooses to keep the entire GHG discussion in Chapter 5, we suggest text is added to Chapter 4 air quality impacts section referencing that the project GHG and climate change impacts are presented in the Chapter 5, Cumulative Effects.

Note, the draft CEQ GHG guidance referenced in the Draft EIS has been finalized. There were several areas where the final guidance changed from the draft guidance. We suggest the final guidance (https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf) is reviewed and the Final EIS updated as needed.

Storage and Evaporation Ponds

The EPA has been working with NRC and is in the process of revising the requirements under 40 CFR Part 192 for uranium in situ recovery facilities. The proposed changes to 40 CFR Part 192 have the potential to significantly impact the design, operations, and decommissioning of the Reno Creek ISR facility, depending upon the timing of the NRC licensing of this facility and the promulgation of the new regulations. We recommend you consider the effect that the proposed revisions to Part 192 would have on the monitoring plan and decommissioning of the Reno Creek ISR facility.

Draft EIS Rating

Consistent with Section 309 of the CAA, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on our review, the EPA is rating this Draft EIS as Environmental Concerns- Insufficient Information (EC-2). The "EC" rating indicates that the EPA review has identified environmental impacts that need to be avoided in order to fully protect the environment. The "2" rating indicates that the EPA review has identified a need for additional information, data, analysis or discussion in the Final EIS in order for the EPA to fully assess environmental impacts from the project. A full description of the EPA's rating system can be found at: <https://www.epa.gov/nepa/environmental-impact-statement-rating-system-criteria>.

We hope that our comments will assist you in clarifying and reducing environmental impacts of this project. We appreciate the opportunity to review and comment on the Draft EIS. If we may provide further explanation of our comments, please contact me at 303-312-6704, or Lisa Lloyd, at 303-312-6537.

Sincerely,



Philip S. Strobel
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Electronic cc: Jill Clavery, NRC (Jill.Clavery@nrc.gov)