

**Powder River Basin Resource Council
Wyoming Outdoor Council**

March 3, 2010

Chief, Rulemaking and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop TWB-05-B01
Washington, DC 20555-0001
Submitted electronically to nicholsranchisrseis@nrc.gov

RE: Comments on the Environmental Impact Statement for the Nichols Ranch ISR Project in Campbell and Johnson Counties, Wyoming, NUREG-1910, Supplement 2

Dear Mr. Lesar,

Thank you for the opportunity to submit comments on the draft environmental impact statement (DEIS or DSEIS) for the Nichols Ranch in-situ leach (ISL or ISR) uranium facility in the Powder River Basin of Wyoming.

The Powder River Basin Resource Council is a grassroots Wyoming organization that promotes responsible extraction and use of our state's abundant mineral resources. Most of our approximately 1,000 members are rural landowners in Wyoming and many of them will be impacted by uranium exploration and production.

Since 1967 the Wyoming Outdoor Council has worked to protect Wyoming's environment and quality of life for future generations. We envision a Wyoming thriving with abundant wildlife, healthy landscapes, clean air and water, strong communities, and sustained by renewable energy.

These comments are submitted on behalf of our organizations and behalf of our members who live, work, and/or recreate in areas impacted by the Nichols Ranch project.

I. The purpose and need statement does not meet NEPA requirements and unreasonably limits the consideration of a reasonable range of alternatives.

According to NRC

The purpose and need for the proposed action is to provide an option that allows for the applicant to use ISR technology to recover uranium and produce yellowcake... This definition of purpose and need reflects the Commission's recognition that, unless there are findings in the safety review required by the Atomic Energy Act or findings in the NEPA environmental analysis that would lead the NRC to reject a license application, the NRC has no role in a company's business decision to submit a license application to operate an ISR facility at a particular location.

DSEIS at 1-1. Similar to the GEIS, the purpose and need statement is too narrow and thus unreasonably restricts the range of alternatives that NRC is able to consider in this NEPA

document. The purpose statement basically limits the NRC to two options: 1) approve the project (i.e. allowing the applicant an option to use ISL to recover uranium) or 2) reject the project. Like the GEIS before it, the NRC fails to discuss the *public* purpose and need for the project, including whether the uranium produced is needed as a fuel source for domestic nuclear power plants.

By contending that it “has no role in a company’s business decision,” the NRC prevents consideration of reasonable alternatives. Alternatives consideration is “the heart of the environmental impact statement” and agencies must “[r]igorously explore and objectively evaluate all reasonable alternatives” in order to “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14.

By creating such a narrow purpose and need, NRC is unreasonably restricted from considering reasonable alternatives, such as a true phased development alternative (which would require restoration and reclamation achievements for each well field prior to proceeding to the next), changing project boundaries to reduce environmental or cultural impacts, or rejecting the placement of wells within ephemeral drainages. By failing to consider these, and potentially other, reasonable alternatives, the NRC has violated NEPA.

II. The EIS improperly tiers to the Generic Environmental Impact Statement.

According to NRC, the “SEIS supplements the GEIS, published as a final report in June 2009.” DSEIS at 1-2. However, as this statement clarifies, the GEIS is merely a report. It was never issued as a final NEPA document with an official Record of Decision. In a meeting with NRC staff on June 30, 2009, NRC staff told participants (including our organization) that “the GEIS does not make a final binding decision.” In fact, if it was a final decision, we note the NRC – according to its own regulations – should have issued a record of decision. *See* 10 C.F.R. § 51.102(a) (“A Commission decision on any action for which a final environmental impact statement has been prepared shall be accompanied by or include a concise public record of decision.”)

The NRC downplays the extent to which it relies on the GEIS by saying that the GEIS merely “provides a starting point for NRC’s NEPA analyses.” DSEIS at 1-2. However, certain aspects of the GEIS appear to be binding upon the SEIS, including the scope of the document. *Id.* (“In defining the scope of the SEIS, the NRC staff considers the scope of the GEIS to be sufficient for this purpose”); *see also Id.* at 1-5 (issues and concerns determined to be outside the scope of the GEIS are also outside the scope of the SEIS).

Improperly limiting the scope of the document leads the NRC to fail to analyze a host of impact areas. In particular, the NRC fails to consider climate change impacts, which was determined to be outside the scope of the GEIS.¹ We hereby incorporate by reference our comments on the Draft GEIS relating to climate change and all other aspects of the GEIS. (A copy of our

¹ Although the NRC briefly touches on the issue of climate change on pages 5-12 to 5-13, the discussion is nowhere near complete. Also, the discussion mixes traditional air pollutants with greenhouse gases and does disservice to the impacts analysis of both. Climate change is a significant enough topic to deserve its own section and detailed discussion in the EIS.

comments on the Draft GEIS is attached for easy reference). These comments demonstrate why the GEIS is a legally deficient document and cannot be relied upon for impacts analysis of the Nichols Ranch project.

III. The NRC relies on “mitigation” that is not enforceable by the agency and in many cases has yet to be decided.

Routinely, the NRC makes statements about mitigation measures as if they are in place and enforceable. Here is a sampling of these statements:

- “[A]ccess roads would...follow BLM criteria for road building material.” DSEIS at 2-7;
- “During construction, the roads would be wetted to reduce dust emissions.” *Id.*;
- “Mitigation measures similar to those specified in the PA for the Pumpkin Buttes TCP may apply to construction activities in the Hank Unit because it lies within the 3.2 km (2 mi) radius of the TCP.” *Id.* at xxi;
- “As required, the disposal well will be completed (e.g. screened) in an approved subsurface formation and will be operated according to permit requirements.” *Id.* at 3-23;
- “[W]hile impacts from incidental spills of drilling fluids into local streams could occur, they would be expected to be temporary due to the use of mitigation measures.” *Id.* at 4-16;
- “Uranerz would also use proper sedimentation and erosion control to minimize sedimentation into the channels...”;
- “Mitigative measures, such as minimizing noise, vehicular traffic, and human proximity, would be taken near greater sage-grouse leks.” *Id.* at 4-36; and
- “Operational practices to mitigate impacts and prevent erosion and water quality degradation on a regional basis would be an important component to the future of surface waters and wetlands.” *Id.* at 5-10.

NRC fails to mention that it does not have the authority to enforce any of these requirements because, *if* they are required, they will be a part of other agency approvals of the project. None of these other agency approvals have been granted to the company and thus NRC cannot rely on them to reduce impacts of this project. The final EIS must fully disclose what mitigation measures NRC will incorporate into its license for the project and thus what measures the agency has the authority to enforce. All other measures are merely conjecture at this point.

In doing this analysis of mitigation measures, NRC must comply with NEPA, which requires a full discussion of the effectiveness of each measure. As federal courts have explained:

An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. *Compare Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1381 (9th Cir. 1998) (disapproving an EIS that lacked such an assessment) *with Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 477 (9th Cir. 2000) (upholding an EIS where “[e]ach mitigating process was evaluated separately and given an effectiveness rating”). The

Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. *Methow Valley*, 490 U.S. at 351-52 (citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination.

South Fork Band Council, et al. v. Dept. Interior, et al., Decision No. 09-15230 (9th Cir. 2009). The NRC fails in this EIS to discuss the effectiveness of any of the proposed mitigation measures.

As discussed below, every ISL project to date in Wyoming has experienced a long series of mishaps – spills, excursions, well failures, evaporation pond leaks, etc. It is incumbent upon the NRC to address these issues and develop a strong range of mitigation measures that will *effectively prevent* (or at least minimize to the smallest possible degree) these problems at the Nichols Ranch site and other future ISL sites.

IV. The NRC fails in its duties under NEPA to disclose and analyze cumulative impacts.

Cumulative impacts analysis, especially in an area like the Powder River Basin, is an integral part of any NEPA document. As admitted by NRC, the agency failed to take a “hard look” at cumulative impacts in the GEIS. Short of conducting a true programmatic analysis of cumulative impacts for all proposed ISL projects, as called for in our comments on the GEIS, NRC must now do the analysis that was lacking in the GEIS.

In particular, the NRC must discuss potential cross-contamination from CBM, other oil and gas, or other uranium wellfields. Specifically, the EIS should discuss the following:

- Results of groundwater flow mapping, including information on groundwater flow direction, recharge rates, and vertical and horizontal migration of fluids.
- The location of wells from past, present, and reasonably foreseeable future operations and exploration. This would include uranium, CBM, oil and gas, and other wells present in the area. The EIS should detail whether casing and capping requirements are sufficient to prevent migration of fluids. Past exploration activities and improperly abandoned wells in the area could create significant impacts not contemplated or discussed in the EIS.
- The location of CBM water reservoirs and whether any reservoirs have leaked (as many do) into the groundwater (which could include the ore zone aquifers or surficial aquifers above them) or have storm water discharges into ephemeral drainages where the company plans to locate uranium wells.
- Recent publications regarding groundwater drawdown from CBM operations, including Wyoming Geological Survey’s Report *1993 – 2006 Coalbed Natural Gas (CBNG) Regional Groundwater Monitoring Report: Powder River Basin, Wyoming*. This report is available at <http://www.wsgs.uwyo.edu/docs/OFR-PRB.pdf>. Among other things, the report details that there is communication between the coal seams and the Wasatch Formation that may create cumulative impacts related to water quality or quantity:

CBNG impacts such as drawdown in water levels have been measured in some of the overlying sandstone beds of the Wasatch Formation. These data indicate that there may be a greater degree of hydrologic interconnectedness between the upper Fort Union coal deposits and the overlying Wasatch sandstone beds than was modeled by the AHA and GEC (2002) groundwater model. Report at 5.

- Problems with DEQ permitting systems for discharged water. See Jan Hendrickx and Bruce Buchanan, *Expert Opinion on the Tier-2 Methodology*, Report to the Wyoming Environmental Quality Council, May 2009, at iii, and Report to the Wyoming Department of Environmental Quality, Sept. 2009, at ii (Tier 2 is “not [a] reasonable nor scientifically valid [method] for determining the EC water that can be discharged into an ephemeral drainage in Wyoming.”).² Specifically, in relation to the Willow Creek drainage, EPA objected to permit modifications for the Willow Creek Watershed General Permit. Letter from Stephen Tuber, EPA Region 8, to John Corra, Wyoming DEQ, Nov. 13, 2009. EPA told DEQ that the modifications to this watershed permit “fail to ensure compliance with applicable requirements of CWA [Clean Water Act] regulations and fail to satisfy the requirements of 40 C.F.R. § 122.44(d).” Letter at 2.

Consideration of water quality impacts related to CBM is especially important given the proposed location of uranium wells *within* ephemeral drainages used for CBM discharged water.

The EIS dramatically underestimates the amount of CBM wells in the Powder River Basin. According to the EIS, only 4,500 CBM wells are in “various stages of development.” DSEIS at 5-7. However, according to the Wyoming Oil & Gas Conservation Commission website, as of December 2009, there were 14,260 producing CBM wells and 12,390 shut-in CBM wells (wells that were producing but are on standby status, mostly because of economic conditions).³ The 2003 Powder River Basin Oil and Gas EIS authorized 51,000 CBM wells. This error alone demonstrates that NRC’s cumulative impacts analysis does not meet the “hard look” standard under NEPA. In addition to discussing the number of wells in the entire basin, NRC must also discuss the number and type of wells in the project area, which is especially important for cumulative impacts analysis.

Additionally, the NRC’s methodology for analyzing cumulative impacts is flawed. The NRC states that since most of the site-specific impacts are “small” (according to the agency), “the activities at the proposed ISR site is not likely to contribute a perceptible increase in potential impacts to the resource beyond those resulting from past, present, and anticipated future actions.” This means that NRC has determined, prior to any true analysis of cumulative impacts, that impacts are insignificant and not worth analyzing. NEPA requires more.

² Tier 2 is a permit methodology to implement DEQ’s “agricultural protection policy,” which is designed to implement the non-degradation requirements (i.e. protection of existing uses of the water) of the Clean Water Act. However, according to the consultants’ report, Tier 2 will not protect existing agricultural uses of Wyoming’s water. After the consultants’ report DEQ has pulled the proposed rule relying upon this methodology, but is still implementing it through the existing policy. EPA wrote to the state on September 29, 2009 expressing concerns regarding the proposed rule and the use of the policy to issue permits. Letter from Karen Hamilton and Sandra Stavnes, EPA, to Dennis Boal, Environmental Quality Council, Sept. 29, 2009.

³ <http://wogcc.state.wy.us/coalbedchart.cfm>

For instance, the discussion on land use impacts fails to include any analysis of well spacing, fencing, habitat loss, and other aspects of well field and infrastructure construction and operation. As discussed below, NRC notes that well spacing in an ISL field is just 50-150 feet. These are extreme impacts compared to traditional oil and gas and even CBM (which is typically developed at 80-acre spacing). Merely because other wells are present in the area does not translate to the uranium impacts being insignificant. NRC fails to analyze what the combined impacts are. As the CEQ regulations demonstrate, “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

Moreover, the cumulative impacts section fails to discuss impacts to wildlife. Cumulative impacts to species like the greater sage-grouse are often significant because of the landscape-scale habitat needs of the bird. Additionally, species such as mule deer and pronghorn migrate over long distances and therefore this project must be considered in the scope of local and regional impacts to wildlife habitat and migration corridors.

NRC also appears to use the wrong scale for evaluating cumulative impacts. While some impacts – such as air quality – should be viewed at a regional scale, other impacts are specific to the license/permit area. For instance, the discussion regarding geology and soils blows things out of proportion. NRC states that

The 41 ha (100 ac) of temporary disturbance anticipated for the proposed Nichols Ranch ISR Project amounts to less than 0.1 percent of the land area disturbed in the Powder River Basin in 2003. The ways in which soils are impacted for the proposed Nichols Ranch ISR Project are also far less damaging or adverse than the impacts which result from surface coal mining.

DSEIS at 5-9. Is the standard for determining significance the level of impacts associated with surface coal mining? Almost certainly, a large surface coal mine will disturb more land than an ISL uranium project. That does not mean, however, that impacts to geology and soils from an ISL project are insignificant, especially when combined with other impacts *in the project area*.

In short, NRC must substantially revise the cumulative impacts discussion in order for a final EIS to meet NEPA requirements.

V. Impacts to a wide variety of resource areas will be significant.

Like other NRC issued NEPA documents before it, the SEIS fails to properly disclose impacts to a wide variety of resources – impacts that will be significant. We look forward to a more robust discussion of impacts – and enforceable measures to mitigate those impacts – in the final EIS.

A. Land Use

Impacts to land use from the construction, operation, and reclamation of the project will be significant. As NRC notes, wells will be placed just 50-150 feet apart. DSEIS at 2-9. In addition to the well fields, the project will require a processing plant, sixteen header houses (for just the first production area alone), pipelines, fences, roads, and other infrastructure. These facilities will

require significant amounts of land and because of the well spacing will prevent the land from being used for other purposes. Please discuss in greater detail the amount of land that will be impacted either directly or indirectly and the time estimated for reclamation.

B. Water

NRC's conclusion that ground and surface water impacts will be "small" to "moderate" is premised on several flawed assumptions. First, NRC assumes that Uranerz and other ISL operators will implement practices (although the EIS fails to discuss what those practices are) to avoid or remediate spills, leaks, and excursions. The past history of ISL operations in Wyoming and elsewhere demonstrate otherwise. As the attached investigation report and Notice of Violation for the Smith Ranch-Highland ISL project and the attached permit history from the Irigaray-Christensen Ranch project shows, spills, leaks, and excursions are routine at ISL operations. Some of these spills and excursions have been extremely large. If the Nichols Ranch project is carried out in a "business as usual" fashion, it is very likely that these problems will be replicated during this project.

NRC briefly discusses this history in the EIS and concludes that "In all cases, none [of the spills, excursions, etc.] resulted in environmental impacts." DSEIS at 4-27. In neither the EIS nor the 2 page document from which this conclusion is based, does NRC discuss these past events at a level that can be used to determine impacts. How does the NRC make this determination? On what data is the determination based?

Second, NRC assumes that groundwater will be restored to "acceptable limits" but again fails to disclose what those limits may be. Past history of ISL sites demonstrates that it will be extremely difficult – if not impossible – to restore a well field to pre-mining water quality conditions. Our members are particularly concerned about mobilized heavy metals left in the aquifer after mining operations. As noted in the DSEIS, uranium is "present in the aquifer in a reduced insoluble form... Once uranium is oxidized, it easily complexes with bicarbonate anions in the groundwater and becomes mobile." DSEIS at 2-15. In addition to uranium, other heavy metals and hazardous elements are also mobilized from the ore and can contaminate the groundwater. These elements include the radioisotopes and progeny of uranium, thorium, radium, and radon, as well as the non-radioactive elements such as arsenic, vanadium, zinc, selenium, and molybdenum. NRC fails to discuss how these elements will be returned to pre-mining conditions – or if it is impossible to do, what alternative concentration limits may be allowed and therefore what water quality impacts may result from these operations.

NRC also fails to discuss how baseline water quality conditions have been developed and why averaging is allowed under NRC regulations. As noted in the EIS, some livestock and domestic wells are completed within the ore zone and that means water quality in local areas is of sufficient quality to be used for these purposes. Well field averaging could prevent those local aquifers from being returned to a sufficient quality to allow them to be used for their pre-mining uses.

NRC's flawed assumptions must be corrected in the final EIS and NRC needs to fully disclose the true risk of these projects.

Additionally, NRC's impacts analysis related to water must be substantially improved in several key areas.

First, NRC must accurately describe impacts related to locating wells *within* an ephemeral drainage. According to the EIS, "Ephemeral channels would be crossed at two locations on the Nichols Ranch Unit and at three locations on the Hank Unit due to the construction of these access roads," DSEIS at 2-7, and "Uranerz would place approximately 15 wells (5 production and 10 injection) in ephemeral channels during the dry season within the Nichols Ranch Unit and 22 wells in ephemeral channels on the Hank Unit (11 production and 11 injection)." *Id.* at 4-17. Locating wells *within* an ephemeral drainage presents unique challenges in regards to spills, leaks, and erosion. If spills of production or injection fluids enter waters of the state, DEQ enforcement authority is triggered. Once the spill enters the water, how would it be mitigated, i.e. cleaned up? Would all water in the stream have to be removed? Would topsoil of the streambed be removed? Locating wells *in* an ephemeral drainage presents serious risks to local water quality and soil ecology that are not appropriately discussed in the EIS. These impacts are of particular concern to our members, some of whom live downstream from this project.

Second, NRC does not fully disclose impacts to stock and domestic water wells within the project area (or outside in regards to excursions). According to the EIS, some water and stock wells are completed within the aquifer where Uranerz will conduct its mining operations and "wells that are completed in the ore-bearing zone will be abandoned per Wyoming regulations/guidance." *Id.* at 3-22. How many wells will need to be abandoned? Will the owners of those wells be compensated? If the wells need to be re-drilled in a different formation, what is the water quality and quantity of that formation? What is the impact on artesian wells outside the ore zone? Will landowners be compensated if wells lose pressure? Will the aquifers be restored to water quality sufficient to allow them to be used for domestic and stock wells in the future? None of these questions are addressed in sufficient detail in the EIS.

Third, NRC fails to fully disclose what constituents will be injected into the aquifer. The EIS states that "chemicals *such as* oxygen or hydrogen peroxide would be added to the groundwater to produce a lixiviant. Sodium bicarbonate would also be added to complex the uranium in the solution." *Id.* at 2-14. Is there a plan established? If not, how can NRC analyze the impacts if it does not know what constituents will actually be injected? Elsewhere in the EIS, the NRC says that other chemicals may be added, included hazardous constituents such as hydrochloric acid. *Id.* at 2-15. Where is the analysis of impacts caused by adding these hazardous chemicals to the aquifer?

Finally, and perhaps most importantly, NRC fails to fully disclose the confining conditions (or lack thereof) at this project site. The EIS does not disclose data from the project site about permeabilities of the aquitards. Instead, NRC says that data necessary to determine confinement "would be submitted as part of the well field data packages and would be reviewed and approved by the NRC before each well field would begin operation." DSEIS at 3-18. As noted in the GEIS among other documents, ISL projects depend on confining conditions to minimize risk of vertical excursions and dewatering, among other impacts. NRC admits that the F Sand production zone at the Hank Unit "is an unconfined aquifer." *Id.* at 4-25. We believe that NRC

should not license a project at an unconfined location unless the agency fully demonstrates (through sufficient text in this NEPA document) that impacts to water resources can otherwise be prevented through *enforceable* and *effective* mitigation measures.

Please fully disclose impacts to water resources in the final EIS for this project.

C. Waste Disposal

The analysis of waste disposal impacts is particularly limited and must be bolstered in the final EIS for this project.

For instance, where will the waste from the facility go? NRC says that the 11e(2) byproduct waste disposal agreement is “under preparation” and “Uranerz has not selected a site.” DSEIS at 1-9. Several options are available, but NRC has not analyzed the impacts of any of those options. Is there space available at the site? What are the impacts from transportation to the site? What are the local impacts of each of the disposal sites? All of these issues must be addressed because they are reasonably foreseeable impacts of disposing waste from this facility.

Additionally, Uranerz’s plan for waste disposal goes against what past history tells us is necessary at an ISL facility. Significantly, Uranerz contends that all of the liquid effluent wastes from the project (upwards of 100 gallons per minute) can be disposed of in deep disposal wells. While we prefer this disposal method to other options on the table (e.g. evaporation ponds or land application), we are concerned that the wells might not be able to handle the amount of waste produced. What happens if the well fails? Where will the waste go? NEPA requires up-front consideration of impacts and it is important to fully disclose the potential impacts that may result from this project.

D. Wildlife

Our members are concerned about impacts to local and regional wildlife populations, especially the greater sage-grouse, which is under threat of being listed under the Endangered Species Act. As identified in the EIS, the “proposed project area includes habitat for a variety of big game animals, raptors, migratory birds, and small mammals that may be affected by the project.” DSEIS at 1-12. NRC must discuss what these impacts entail and enforceable measures to mitigate those impacts.

After disclosing that “the property is part of a larger region of the state dedicated as a ‘core breeding area’ for the greater sage-grouse,” DSEIS at 1-12, NRC then illogically proceeds to determine that impacts to ecological resources will be small. The core areas approach, adopted by the Buffalo Field Office of the BLM as a “focus areas approach,” is the state’s designated way to protect existing sage-grouse habitat. While our organizations have objected to the BLM’s reliance on this approach as a way to abdicate its responsibilities to protect sage-grouse populations and habitat outside of the core areas,⁴ in order for the approach to be even remotely

⁴ See, e.g. appeal to the Interior Board of Land Appeals concerning BLM’s approval of the Carr Draw III East Plan of Development.

successful in preventing a listing under the ESA, all remaining habitat in the core areas should be protected and impacts to sage-grouse populations must be minimized.

According to the EIS, “ten greater sage-grouse leks exist within a 3.2 km (2 mi) radius of the proposed Nichols Ranch ISR Project site.” *Id.* at 3-30. Please discuss the number of birds (both male and female) that have visited these leks in recent years. A table listing the leks, the number of birds, and distance from the project site would be an important part of the final document. Leks within four miles should be included in this table as that would be consistent with BLM practices relating to CBM project authorizations and scientific literature that has determined that sage-grouse leks up to four miles away from a project suffer impacts. The EIS also needs to discuss habitat conditions, including the percent of breeding and nesting habitat and winter habitat within and adjacent to the project area.

In addition to providing better background information about environmental conditions, the EIS needs to disclose the wide variety of impacts to sage-grouse populations and their habitat that will result from the project. For instance, ISL projects will fail to reclaim sagebrush habitat because sagebrush is not a part of the seed mix used by ISL uranium projects and regardless, sagebrush ecosystems take decades to properly reclaim. The Northeast Wyoming Sage-grouse Working Group has identified that “[i]mpacts [from energy development] may be long-term (30 years or more), and rehabilitation of impacted habitats may take many years to complete.” Northeast Wyoming Sage-grouse Working Group report at 23. The EIS is also lacking an analysis of how development will increase the spread of noxious or undesirable weeds and therefore limit the ability of sage-grouse habitat to be properly reclaimed. As a result of failed reclamation and invasion of noxious weeds, there will be permanent impacts to habitat. As the EIS notes, “For species with specialized habitat requirements, future population viability would be strongly influenced by the quality and composition of the remaining habitat.” DSEIS at 5-11. However, the EIS fails to disclose the habitat impacts of this project – either at a site-specific level or cumulatively.

Additionally, the EIS fails to discuss impacts related to the use of overhead power or the use of diesel generators, which create significant levels of noise and thus impact local wildlife species.

We included with our comments on the draft GEIS several studies relating to sage-grouse impacts from CBM operations and we believe these studies must be considered in the context of uranium operations. The Wyoming Game & Fish Department has concluded that, absent uranium-specific scientific studies to the contrary, impacts of oil and gas operations can be applied to ISL uranium facilities.

E. Socio-economics

We appreciate the discussion of socio-economic conditions in section 3.11 of the EIS. We believe this is much better information than was included in the GEIS.

However, the EIS fails to disclose that uranium mining does not create *any* federal royalties under the 1872 Hardrock Mining Act and only produces modest state severance taxes (compared

to other mineral development in Wyoming). Please include a detailed discussion of taxes and royalties in the final EIS.

VI. NRC's analysis of many impact areas is premature because other agencies have not yet acted.

As discussed above, NRC is depending on other federal and state agencies to issue permits and project approvals with enforceable mitigation measures. This truncates NEPA's requirements of an up-front consideration of impacts and enforceable measures to mitigate those impacts. The SEIS artificially separates the NRC's consideration of impacts from the impacts that may actually result from the project after all of the project approvals are in place. Thus, this prevents a holistic evaluation of impacts.

NRC needs to do more to coordinate and consult with other agencies. While we appreciate that "the NRC staff has kept the BLM apprised of progress on the staff's environmental review analysis for the proposed Nichols Ranch ISR Project," *Id.* at 1-11, the BLM is not a cooperating agency on this EIS. That means BLM will have to do its own NEPA. NEPA analysis will thus be split and the impacts will not be looked at holistically.

Additionally, how can NRC determine the impacts of this action before the project has obtained the appropriate permits from state and federal agencies? NRC's analysis of impacts is speculation at best under this framework.

Thank you for your time and consideration of these comments and we look forward to a much-improved final EIS.

Sincerely,

A handwritten signature in black ink, appearing to read "Shannon Anderson", with a long horizontal flourish extending to the right.

Shannon Anderson

Attachments: Powder River Basin Resource Council comments on the draft GEIS for ISL uranium facilities; Jan Hendrickx and Bruce Buchanan, *Expert Opinion on the Tier-2 Methodology*, Report to the Wyoming Environmental Quality Council, May 2009; Notice of Violation and associated report of investigation for the Smith Ranch-Highland ISL facility in Converse County, Wyoming; Permit History of the Christensen-Irigaray ISL facility in Campbell County