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POWDER RIVER BASIN
Resource Council

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VIA ELECTRONIC & FIRST-CLASS MAIL

Tom Foertsch, Geologist
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RE: Scoping Comments for Reynolds Ranch Uranium Operation Environmental Assessment

Dear Mr. Foertsch,

The Powder River Basin Resource Council is submitting the following comments in response to the Public Scoping Statement and Notice regarding the Cameco/Power Resources, Inc. (hereafter "PRI") proposed Reynolds Ranch in-situ leach (ISL) uranium mining operation posted on the BLM website. We greatly appreciate the opportunity to submit scoping comments and we hope they will inform the National Environmental Policy Act (NEPA) review process for the project.

The Powder River Basin Resource Council was formed in 1973 by ranchers and other concerned citizens of Wyoming to address the impacts of mineral development on rural people and communities. The vast majority of our approximately 1,000 members live, work, and travel in the Powder River Basin, an area that will be impacted in various ways by the Reynolds Ranch ISL site. Wyoming is expecting a large uranium mining boom in the upcoming years, and our members are concerned that these uranium operations in the Powder River Basin and other areas of Wyoming will impact their livelihoods and public resources they value. We encourage BLM to conduct a thorough and probing analysis of environmental impacts from this project and others that are expected in the near future.

In particular, we encourage BLM to fully discuss the following points in its EA for this project.

Timing of the EA

According to the Public Scoping Notice, the NRC has already issued a license amendment to PRI which would authorize the Reynolds Ranch ISL site. Although, as we understand it, BLM must still approve the plan of operations, it seems to be a forgone conclusion that the project will go forward as planned. How does the timing of this EA comply with BLM's NEPA obligations? NEPA is designed to "insure that environmental information is available to public officials and

citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b) (emphasis added). Please discuss these issues in your EA.

Significance of the Impacts

According to the Public Scoping Statement, the project consists of eight well fields, a satellite ion-exchange facility, and a deep disposal well. The project "encompasses approximately 8,700 acres." NRC's EA documents that the project is expected to last five years followed by four years of groundwater restoration and one and half years of decommissioning. Nuclear Regulatory Commission, Environmental Assessment for the Addition of the Reynolds Ranch Mining Area to Power Resources, Inc.'s Smith Ranch/Highlands Uranium Project, Converse County, Wyoming, Nov. 2006 (hereafter "EA") at 4. Therefore, the project will last over a decade. As documented in the sections below, this decade-long activity will create numerous impacts to public health and the environment. How has BLM or NRC determined that these impacts will not be significant? What is the basis for NRC's FONSI? We urge BLM to fully consider the "context" and "intensity" of the impacts from this project to accurately determine whether the impacts will be significant within the meaning of NEPA. 40 C.F.R. § 1508.27. If the impacts are found to be significant, an Environmental Impact Statement must be prepared for this major federal action.

Purpose and Need for the Project

The EA should discuss the purpose and need for the project. In particular, the purpose and need section should disclose whether uranium mined from this project will be used in domestic nuclear power plants or whether it will be sold for nuclear power abroad.

Alternatives Analysis

BLM's EA needs to consider a broader range of alternatives than the NRC's EA. The only options cannot be (1) mine as planned, (2) no mining, or (3) other types of mining that are not economically feasible. BLM should consider other alternatives, such as phased operations or limited operations or additional mitigation measures to minimize environmental impacts. NEPA requires agencies to "rigorously explore and objectively evaluate all reasonable alternatives," and in fact, this is the "heart" of the NEPA process. 1502.14 Admittedly EAs do not need to contain the detailed analysis an Environmental Impact Statement (EIS) does; however, federal agencies must "study, develop, and describe appropriate alternatives to recommended courses of action," which is a requirement of any NEPA document. 42 U.S.C. § 4332(E). Additionally, if impacts are found to be "significant" as we believe they are, BLM will have to fulfill its NEPA responsibilities through preparation of an EIS, which will require a full alternatives analysis. We hope the BLM will place greater emphasis on alternatives consideration in environmental documents for this project to meet its NEPA obligations.

Surface Water Quality

We are concerned that wells will be located directly in ephemeral drainages. EA at 22. BLM's EA should discuss impacts to surface water from these operations and fully discuss measures that

could be implemented to mitigate these impacts, for instance, re-locating the wells away from these drainages.

Groundwater Quality

"Water quality, based on U.S. Environmental Protection Agency (EPA) drinking water standards (EPA, 2005), is relatively good in both [the U/S Sand and O Sand] aquifers." EA at 15. Four wells are used for drinking water sources and other wells in the area are used for stock purposes. EA at 16. Given PRI's past history,[1] we are very concerned that these "good" water sources will be impacted by operations. BLM should fully discuss PRI's ability to protect ground water sources.

According to NRC's EA, "PRI is required to restore the affected ground water to its pre-mining quality or if approved, to its pre-mining class-of-use." EA at 23. To date, PRI has not restored groundwater to baseline quality and instead has relied on the secondary standards of class of use. BLM's EA needs to fully discuss the likelihood of returning water quality to baseline standards, especially given the past history of PRI and difficulty they have had in properly restoring groundwater after ISL operations in the area. We are concerned that PRI is over-estimating the ease in which groundwater can be restored. If water quality is not returned to baseline levels, will water quality impacts be significant? What constituents will be left in the water and what impact will this have on water quality? Will the presence of leftover heavy metals, such as selenium or arsenic, impact water quality? How will pH levels be impacted and will the presence of additional residual sodium bicarbonate from the mining solution degrade water quality? All of these questions need to be answered in the EA for this project[2] to determine whether impacts to water quality will be significant.

According to NRC's EA:

> For in-situ leach mining to be successful, the ore deposit must (1) be located in a saturated zone, (2) be bounded above and below by suitable confining layers, (3) have adequate permeability, and (4) be amenable to chemical leaching.

EA at 14. Has PRI completed its studies to demonstrate that all of these factors are present in the Reynolds Ranch mine zone? Shouldn't these studies be completed before the Plan of Operations is approved?

We are also concerned about the cumulative impacts to groundwater quality as a result of these operations' close proximity to other PRI, Cogema, and Uranerz current and proposed ISL

[1] NRC's EA discloses that "Since 2001, PRI and the previous site operator, Rio Algom Mining Corp., have reported 24 spills of mining-related solutions. The size of these spills has ranged from a 50- to 100-gallon (189 to 378-liter) spill in February of 2004 to a 62,400-gallon (236,210-liter) spill in October of 2001. The largest recent spill was one of 20,700 gallons (78,358 liters) in May 2005. The spills generally have involved injection fluids (0.5 to 3.0 mg/l uranium), although spills of production fluids (10.0 to 15.5 mg/l uranium) also have occurred." EA at 21.

[2] NRC's analysis relies on restoration data for other PRI well-fields. The EA must contain restoration estimates and projected water quality impacts for this new well-field as it is the federal action being analyzed.

projects. We hope the BLM EA for this project will take a harder look at these site-specific and cumulative impacts, as is required by NEPA.[3]

Moreover, the EA should fully discuss the likelihood of cross-contamination from these operations. We know from the experience of PRI that spills and excursions of production and disposal fluid can unfortunately be common occurrences.

Additionally, if contractors are not properly trained or wells are not properly constructed, cross-contamination becomes much more likely. Wells have been known to break during PRI's ISL operations,[4] which can cause contamination of aquifers below or above the mining zone. Moreover, because of the prevalence of coalbed methane (CBM) operations and other wells, it is possible that cross-contamination of the aquifers in the area already exists. Contamination of aquifers used for domestic or stock purposes could cause significant health impacts to nearby residents, livestock, and wildlife. Just because few people live in the area does not make these impacts any less significant. The BLM should address all of these impacts in its EA.

Groundwater Quantity

According to the NRC's EA, PRI plans to use groundwater sweep and clean water injection to restore mining aquifers to baseline conditions. EA at 3, 7. Additionally, "native groundwater" is used as part of the mining solution (EA at 3) and a portion of the solution is continuously bled-off to create a cone of depression in the mining zone.

PRI estimates to consume 50 gallons per minute of groundwater in its operations. EA at 20. NRC's EA says that "The amount of water used in the [ion-exchange] columns or discharged to an authorized deep disposal well under these assumptions equates to approximately 1200 acre-feet of water over the course of a 15-year period." EA at 25.[5] How has NRC and BLM determined that consuming this very large amount of water will not be significant?

As these numbers tend to get glossed over in the report, and are understandably quite alarming for ranchers and other Powder River Basin residents who depend on groundwater for their daily lives, additional explanation is needed in the EA. The Powder River Basin has experienced prolonged periods of drought, which will most likely only increase because of climate change impacts. New water sources may be needed and unfortunately may not be available if water has been depleted or contaminated from these operations. A greater discussion of aquifer drawdown and recharge is needed to detail the significance of these impacts.

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[3] "A necessary component of NEPA's 'hard look' is 'a sufficiently detailed catalogue of past, present, and future projects, and…adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment.'" *Oregon Natural Resources Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007), quoting *Lands Council v. Forester of Region One*, 395 F.3d 1019, 1027-28 (9th Cir. 2005).

[4] After the recent PRI notice of violation came out in the papers, I received some anonymous phone calls from former contractors who said that PRI wells have broken and have created underground excursions and groundwater contamination.

[5] One acre-foot is approximately equivalent to 325,851 gallons so 1200 acre-feet would be the equivalent of 391,021,200 gallons of water over the lifetime of the mine.

Soils

Although NRC's EA discusses topsoil (EA at 8), BLM should stress in its EA the importance of salvaging topsoil. As mentioned above, the Powder River Basin has been undergoing long periods of drought, and as a result, most soils are exceptionally dry. Topsoil is the best soil any area has and it should be separated, properly kept, and re-used to the greatest extent possible. We encourage PRI to go beyond Land Quality Division regulations and implement all best available practices to save and reclaim topsoil. BLM should discuss these available practices and should consider including some as conditions of approval for this project.

Surface & Air Quality Impacts

In spite of the characterization in NRC's EA, surface impacts will not be "temporary and limited." 325 acres in an 8,700 acre area is a significant amount of land to be disturbed during the life-span of these mines. Roads, well fields, buildings, power lines, and other attributes of these operations will all disturb the surface and contribute to fugitive dust in the area. Particulate matter levels in the Powder River Basin are already high because of ongoing industrial activity coupled with high winds and these operations will contribute to air quality impacts and decreased regional visibility. BLM needs to consider these site-specific and cumulative impacts to determine whether air quality impacts will be significant.

In particular, if these operations will be using roads for CBM development, will that use extend the life of those roads? Who is responsible for reclamation if the roads switch from CBM roads to uranium roads? Who is responsible for dust suppressant and other measures to minimize air quality impacts? Will the weight of the uranium trucks impacts these roads in a way that existing uses do not? If new roads are needed, what mitigation measures or conditions of approval will be implemented to ensure minimum impacts to surface use and air quality?

Will air monitoring stations be installed near sources of fugitive dust or other emissions from drilling or ongoing operations? Will PRI monitor for particulate matter, ozone, and other air quality impacts? BLM's EA should fully discuss wind speed, direction, and potential public health impacts. Particulate matter from roads, barren ground, and other operational impacts may be significant. The EA should discuss mitigation measures that could be implemented.

Another significant surface impact typical of ISL operations is the presence of evaporation ponds. BLM should discuss whether evaporation ponds will be needed for waste. If so, the EA should discuss surface impacts from these ponds and discuss potential for surface water impacts from run-off events during spring and summer thundershowers and other heavy rain events. The EA should also discuss how the ponds will be lined, covered, fenced or otherwise protected.

Socio-Economics

BLM needs to include much greater analysis of potential socio-economic impacts. In particular, the EA should discuss the availability and impact to housing (and particularly housing affordability) and public resources, such as schools, health care, and law enforcement.

Will PRI be able to employ local workers? Given the labor shortage present in Wyoming, where will the workers come from? Additionally, we understand that the uranium sector is experiencing a lack of qualified workers because of a previously depressed market. Won't PRI have to bring in qualified workers from out of state or other areas of the state to make up for this labor gap? Where will these workers live? As mentioned in NRC's EA, the proposed site is an extremely rural area. If workers have to commute from the nearest cities, how will population increases impact already strained housing markets in Gillette, Casper, Sheridan, and Buffalo? How will it impact roads? If commuting distances will be significant, additional traffic will impact road conditions and fugitive dust levels. If on-site housing will be used, will worker camps create greater surface impacts?

Wildlife & Habitat

Once again, it should be noted that ten years is not temporary. Most CBM operations also last for a similar span of time, and CBM operations have been shown to have dramatic impacts on local wildlife populations – especially sage-grouse.[6] BLM should discuss how this project will comply with the BLM's Sensitive Species Policy or other stewardship obligations to prevent unnecessary and undue degradation of the lands.

According to NRC's EA, no sage-grouse leks are present in the project area, but sage-grouse "were observed in the area." EA at 17. BLM's EA should discuss the scope of PRI's wildlife study area and disclose impacts to nearby sage-grouse leks and breeding areas. What science or other information is PRI using to confirm that their operations will not impact sage-grouse populations? BLM's EA should discuss the best available science, including guidance from the Western Association of Fish and Wildlife Agencies that interpreted peer-reviewed sage-grouse research published between 2003 and 2008.[7] These studies show that sage-grouse leks and breeding habitat can be impacted by industrial activities more than two miles away.[8] BLM should discuss possible timing stipulations or no-surface-activity buffers and the scientific basis for these measures.

Additionally, BLM should fully address impacts to wildlife habitat. In particular, according to NRC's EA sagebrush habitat is prevalent in the project area. According to NRC's EA, affected surface areas will be reclaimed using a seed mixture that does not include sagebrush. EA at 8. Will project activities destroy existing habitat and plant species diversity? Will habitat be reclaimed to its pre-use state? There may also be a loss of wildlife and stock habitat as a result of noxious weeds and other invasive plant species. Will these habitat impacts harm local sage-

[6] For instance, one recent study has documented that in the Powder River Basin, "Of leks active in 1997 or later, only 38% of 26 leks in CBNG fields remained active by 2004–2005, compared to 84% of 250 leks outside CBNG fields." Brett Walker, et al., *Greater Sage-Grouse Population Response to Energy Development and Habitat Loss*, 71 J.WILDLIFE MGMT. 2644 (2007).

[7] Memorandum from Tom Christiansen and Joe Bohne, Wyoming Game and Fish Department, to Terry Cleveland and John Emmerich (Jan. 29, 2008), with attached report *Using the Best Available Science to Coordinate Conservation Actions that Benefit Greater Sage-Grouse Across States Affected by Oil & Gas Development in Management Zones I-II (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming).*

[8] See Kevin Doherty, et al., *Greater Sage-Grouse Winter Habitat Selection and Energy Development*, 72 J.WILDLIFE MGMT. 187, 194 (2008).

grouse and other wildlife populations? What mitigation measures will PRI take to minimize habitat impacts? The BLM should discuss all of these impacts in its EA.

Other wildlife species may also be impacted from these projects. BLM should fully discuss impacts to wildlife and disclose the scientific and factual basis of its impact findings. BLM should require PRI to conduct additional wildlife surveys and impact assessments if they are needed prior to operations.

Global Warming Impacts

Unfortunately, there is no analysis in NRC's EA about global warming impacts of this project. Trucks, power sources (either coal-fired power plants or diesel generators), drilling operations, processing facilities, and other attributes of these operations will all contribute to carbon dioxide and other global warming pollution emissions. BLM must address all "reasonably foreseeable" environmental impacts of this proposed action. 40 C.F.R. §§ 1508.7, 1508.8. Greenhouse gas emissions are clearly within the direct, indirect and cumulative effects that NEPA documents must analyze.[9] Completing a thorough analysis of global warming impacts will also help BLM fulfill its legal obligation under NEPA to "recognize the worldwide and long-range character of environmental problems" and support international efforts to prevent "declines in the world environment." 42 U.S.C. § 4332 (F).

Financial Assurance

BLM should fully discuss bonding and other financial assurance for this project. Will bond levels be sufficient for reclamation of these operations? PRI has in the past significantly under-estimated financial assurance requirements, which has left the public at risk.[10] We urge BLM and other public agencies to scrutinize financial assurance estimates, especially in light of realistic expectations for groundwater restoration and surface reclamation.

Quality Assurance

We are also concerned about quality assurance for these projects. A discussion of monitoring and evaluation measures is needed in the EA. What will BLM's role be in monitoring and enforcement? Will the BLM conduct site visits or will it rely on NRC and Wyoming DEQ to protect its interests? Will BLM work with the NRC and Wyoming DEQ to address excursions, spills, or other license violations in a timely way? As part of the project is on BLM surface, it seems BLM would have more than a sufficient jurisdictional basis to enforce conditions of approval or other mechanisms designed to minimize environmental impacts.

NRC's EA discusses the time frame for verifying and correcting incidents (EA at 30-31), and we are concerned that this process will not appropriately address the threats posed by these

[9] *See Mid States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520 (8th Cir. 2003) (holding increased coal consumption and global warming emissions was reasonably foreseeable effect of railroad expansion to transport coal).

[10] "Rough calculations based primarily on PRI's figures reveal an alarming scenario…clearly the public is not protected." Wyoming Department of Environmental Quality regarding the Smith Ranch-Highland project.

violations. If groundwater is contaminated, clean-up and remediation efforts should start immediately to minimize impacts to public health and the environment.

We thank the BLM for your time and consideration of these comments. We look forward to further participating in the environmental review process for these operations. Please keep us on your mailing list for notice of future actions related to this process.

Sincerely,

Shannon Anderson
Organizer, Powder River Basin Resource Council

cc: Lowell Spackman, Wyoming DEQ and Doug Mandeville, NRC