UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
STRATA ENERGY, INC.,	)	Docket No. 40-9091-MLA
	)	
(Ross In Situ Recovery Uranium Project)	)	

(Materials License Application)

NATURAL RESOURCES DEFENSE COUNCIL'S & POWDER RIVER BASIN RESOURCE COUNCIL'S REPLY TO RESPONSES BY STRATA ENERGY, INC. AND THE NRC STAFF TO PETITION TO INTERVENE AND REQUEST FOR HEARING

I. INTRODUCTION

On October 27, 2011 and pursuant to 10 C.F.R. § 2.309 and the notice published by the Nuclear Regulatory Commission (NRC, or Commission) at 76 Fed. Reg. 41,308 (July 13, 2011), Petitioners Natural Resources Defense Council (NRDC) and Powder River Basin Resource Council (Powder River) submitted a Petition to Intervene and Request for a Hearing in the above-captioned matter. Petitioners seek intervention in order to challenge various deficiencies in Strata Energy, Inc.'s uranium recovery license application for the proposed Ross *In Situ* Recovery Uranium Project in Crook County, Wyoming. Pursuant to the schedule issued in the November 15, 2011 order and the parties' joint filing on November 20, 2011, Strata and the Nuclear Regulatory Commission Staff (NRC Staff, or the Staff) filed separate responses to the Petition on December 5, 2011. Today, Petitioners file a reply to Strata's and NRC's 97 pages of response. A prehearing conference on the admissibility of Petitioners' contentions is currently set for December 20, 2011.

Petitioners submitted their original five contentions because the project jeopardizes their environmental, aesthetic, health-based and economic interests. The responses by Strata and NRC fail to undercut Petitioners' concerns and these contentions should be admitted.

II. STANDING

As representatives of Pam Viviano, who is a member of both NRDC and Powder River, Petitioners have alleged facts sufficient to establish standing. That is, Petitioners have demonstrated the requisite elements of injury-in-fact, causation and redressability, all stemming from plausible impacts Strata's project will have on Ms. Viviano's environmental, aesthetic, health-based and financial interests. Accordingly, the Board should permit Petitioners to intervene and admit their five contentions.

As an initial matter, Strata and the NRC Staff pay no heed to the legal framework the Commission follows when evaluating a petitioner's factual allegations for standing purposes. The Commission has made clear that "in determining standing, we must accept as true all material allegations of the petition, and must construe the petition in favor of the petitioner." *Ga. Inst. of Tech.*, 41 N.R.C. 281, 286 (1995) (internal quotations and alterations omitted) (citing *Warth v. Seldin*, 422 U.S. 490, 501 (1975) and *Kelley v. Selin*, 42 F.3d 1501, 1507–08 (6th Cir. 1995)), *vacated in part and remanded in part on grounds unrelated to standing*, 42 N.R.C. 1 (1995); *see also Army Installation Command—Schofield Barracks, Oahu, Haw., and Pohakuloa*, Nuclear Reg. Rep. P 31623, 2010 WL 3213707 at *3 n.39 (2010) (internal quotation marks omitted) (citing *Kelley*, 42 F.3d at 1507–08 for the same proposition); *Ga. Inst. of Tech.*, 42 N.R.C. 111, 115 (1995) ("Injury may be actual or threatened. . . . To evaluate a petitioner's standing, we construe the petition in favor of the petitioner." (citing *Kelley,* 42 F.3d at 1508 and *Wilderness Soc'y v. Griles*, 824 F.2d 4, 11 (D.C. Cir. 1987))).

Strata and NRC Staff disregard this authority and argue that Petitioners show no injury in fact, despite the fact that Ms. Viviano has alleged a host of facts regarding her reasonable concerns about impacts the project may have to her interests. These impacts include harm to her land and water resources, increased traffic and dust, light pollution from Strata's extensive industrial operations and corresponding decreases in value of her nearby properties. Viviano Decl. ¶¶ 4–12. These reasonable concerns constitute injury-in-fact sufficient to establish standing.

While Strata and the NRC Staff would deny standing due to the underlying hydrogeology of the region, this claim is in no way dispositive: Ms. Viviano has demonstrated standing *even if* this Board were to find that there is currently no specific hydrologic connection between the proposed project and Ms. Viviano's wells. The harms she describes in terms of traffic, dust, light pollution, property value decline due to potential regional water quality impacts and expansion of extractive industry and general aesthetic interest from her properties within 10 and 7 miles of a projected (and expanding) industrial facility fulfill NRC's standing requirements. In response, Strata and the NRC Staff argue that Ms. Viviano's factual allegations are "bare" and "conclusory" assertions, rather than detailed technical or financial analyses. This argument turns the rules of standing on their head: it is Strata and the Commission Staff that must offer external evidence to disprove these alleged injuries at this stage, since the Board must "accept as true all material allegations of the petition, and must construe the petition in favor of the petitioner." *Ga. Inst. of Tech.*, 41 N.R.C. at 286 (internal quotations and alterations omitted); s*ee also Crow Butte Res., Inc.*, 68 N.R.C. 691, 708 (2008) (petitioner need not "provide extensive technical studies" to achieve standing) (internal citation omitted).

As relevant case law demonstrates, Ms. Viviano's allegations are more than sufficient to establish standing. For instance, in *Sierra Club v. U.S. Army Corps of Engineers*, 645 F.3d 978, 989 (8th Cir. 2011), the Eighth Circuit granted the Sierra Club standing to challenge a section 404 permit for a proposed power plant because one of the Club's neighboring members would suffer aesthetic injury from the plant, including "an increase in dust caused by traffic on the highway, as well as . . . noise and light pollution coming from the plant" (internal quotation marks omitted). *See also Soc'y Hill Towers Owners' Ass'n v. Rendell*, 210 F.3d 168, 176 (3d Cir.2000) (holding that "[t]he Residents have alleged concrete and particularized injury in the form of increased traffic, pollution, and noise"); *U.S. Dep't of Energy*, 69 N.R.C. 367, 433 (2009) (holding that economic harms that are linked to potential environmental or radiological risks were sufficient to confer standing under the Atomic Energy Act (AEA), 42 U.S.C. § 2011, *et seq.*, and the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq.*); *USEC, Inc.*, 61 N.R.C. 309, 314 (2005) (granting standing to a petitioner based on alleged injuries to property, which "include[d] environmental pollution and traffic congestion" (internal quotation marks omitted)); *Yankee Atomic Elec. Co.*, 48 N.R.C. 185, 208 (1998) (nearby residents' concerns about the possibility of "adverse health effects, loss of aesthetic enjoyment, and diminished property values" from ineffectual clean-up of a reactor site created injury-in-fact for standing purposes).

Strata and the Staff offer no real defense to Ms. Viviano's allegations on these issues. Regarding Ms. Viviano's allegations about potential light pollution, Strata and the Staff focus on the visibility of the *buildings* themselves, and essentially ignore the impacts the project's *lights* will have on Ms. Viviano's scenic interests. Regarding the potential loss of property value, Strata and the Staff simply claim that Ms. Viviano has not provided detailed external evidence to

support her allegations, but as discussed above, she need not do so; unless they can provide concrete evidence rebutting her allegations—as they have not—the Board must accept these reasonable allegations as true.

As for increased traffic and dust, Strata and the Staff again allege that Ms. Viviano has failed to support her arguments with detailed evidence, and claim that her residence is too far from the project to suffer any real impact. Yet they ignore the fact that a number of unpaved roads in the project vicinity may see substantially increased traffic, including D Road and New Haven Road (or Oshoto County Road). These roads connect Ms. Viviano's property to the nearby towns of Gillette and Moorcroft, and she uses them regularly to come to and from her property. The proposed Ross Project will likely increase traffic and dust on these roads, and Ms. Viviano will suffer injury as a result. As a matter of law and fact, Ms. Viviano's injuries relating to light pollution, traffic, dust and financial loss suffice for standing.

Even without these injuries, Ms. Viviano's concerns about the potential for inter-aquifer contamination constitute injury-in-fact. Strata's and NRC Staff's respective attacks on Petitioners' standing rely fundamentally on the claim that the underlying Pierre Shale is "impermeable," Strata Resp. at 37, NRC Resp. at 10, and that "no boreholes accounted for by Strata penetrated the lower confining aquitard, the Pierre Shale, so the potential for pathways between the Lance and Fox Hills Formations to the Inyan Kara Group and to Ms. Viviano's properties is not realistic." *Id.* at 34. This is inaccurate; there already *is* established connectivity between the Lance and Fox Hills aquifers and Ms. Viviano's aquifer. Specifically, hundreds of abandoned oil and gas wells that exist in and around the project area penetrate the Inyan Kara Group and extend to a depth of six-to-seven thousand feet below ground surface, down to the

Pennsylvanian Minnelusa formation.[1] Strata and the NRC staff do not acknowledge these boreholes and provide no evidence that they have been properly plugged and abandoned.[2] In other words, the allegedly "impermeable" Pierre Shale formation is riddled with boreholes that penetrate the entire formation and plausibly provide discrete flow channels or pathways for cross-contamination between the Lance and Fox Hills aquifers (where Strata's project will be located) and the Inyan Kara Group (where Ms. Viviano's properties are located). Ms. Viviano's concerns about connectivity between the aquifers are not misplaced.

As important as potential inter-aquifer contamination are the cumulative impacts that may result from expanding uranium recovery and oil and gas drilling in the entire region. Strata's parent company, Peninsula Energy, has articulated a vision for continued proliferation of resource-extractive industrial activities in the Lance Project area, of which the Ross Project is just one component.[3]

Strata's failure to properly consider the environmental harms and risks from this anticipated expansion and to analyze potential mitigation strategies is at the heart of Ms.

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[1] *See* Attachment 1, depicting the oil and gas wells in the project vicinity that extend to a depth of over 4,600 feet below the surface. This information is available for public download at the Wyoming Oil and Gas Conservation Commission's (WOGCC) website, found at http://wogcc.state.wy.us/. Once there in Netscape Navigator, click on "Down Load;" then in the scroll box that appears, click on "110911 Well Header DB5 (Zipped)." Finally, click on the cowboy at left to download two zipped.dbf files of oil and gas well data: one corresponding to plugged/abandoned wells (PA) and one corresponding to active wells (WH). A .dbf file is readable in Microsoft Excel or Access. Note that the .dbf file name will change as it is updated by WOGCC and the first six digits of the file name correspond to the date that the file was created.

[2] Although Strata and the Staff disregard these wells in their briefing, they acknowledge them in the Technical Report (TR). *See* TR § 2.2.1 at 2-10 ("There are a total of 192 oil and gas wells within 2 miles of the proposed project area.")

[3] *See* Peninsula Energy, *Lance Project, Wyoming USA*, http://www.pel.net.au/projects/lance_project__wyoming_usa.phtml *and* Attachment 2 (map depicting Peninsula's plans for expanding in ISL uranium mining in the greater Lance Project area).

Viviano's reasonable concerns and each potential injury she describes. The practice of expanding *in situ* leach (ISL) operations and facilities over time is not new to Wyoming, as is evidenced by the segmented growth of the Smith Ranch-Highland ISL site. NRC License SUA-1548. Over the course of nearly three decades, the Smith Ranch ISL site has expanded via the purchase and combination of existing mine sites, including the Highland, Ruth, and North Butte ISL sites,[4] and by the development of new satellite projects under the existing permit, including the Gas Hills and Reynolds Ranch ISL sites.[5] Each incremental expansion has entailed relatively minimal or no NEPA analysis, ranging from environmental assessments (EAs) issued without public comment to an avoidance of environmental impact analysis altogether by way of categorical exclusions.[6] Any opportunity to conduct a meaningful cumulative impact analysis covering this expansive project in its entirety vanished long ago, and Petitioners now want to ensure that the NRC and Strata do not bypass NEPA responsibilities with regard to the greater Lance Project.

Thus, regardless of whether the Ross Project alone threatens to contaminate Ms. Viviano's individual wells, she will suffer injury-in-fact from this project: it represents Strata's

[4] *See* Attachment 3 (Letter from Susan M. Frant, Chief Fuel Cycle Facilities Branch Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, NRC to Mr. William F. Kearney, Manager, Health, Safety, and Environmental Affairs, Power Resources, Inc., regarding Combination of Smith Ranch-Highland Uranium Project (SR-HUP), Ruth and North Butte Licenses, License Amendment 5 to the Smith Ranch Source Materials License SUA-1548 (Aug. 18, 2003) (NRC Accession No. ML032320650)).

[5] *See* Attachment 4 (Letter from Keith I. McConnell, Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, NRC to John McCarthy, Power Resources, Inc., Smith Ranch-Highland Uranium Project, regarding Review of Request to Operate the Reynolds Ranch Project In Situ Leach Uranium Recovery Facility—Amendment 11 to Source Material License SUA-1548 (Jan. 31, 2007) (NRC Accession No. ML062710206)).

[6] Petitioners do not mention these examples as an avenue to attack the NEPA adequacy of these previous NRC actions. However, those actions demonstrate likely treatment of future license amendments related to an initial license.

first foray into an expansive regime of uranium recovery in the immediate region. The cumulative impacts of these projects will not only exacerbate all of Ms. Viviano's articulated injuries regarding the Ross Project—traffic, dust, light pollution, aesthetic injuries and declining property values—but together may very well jeopardize the environmental integrity of the aquifers that service her wells and property. Yet the segmented, multi-decade nature of this expansion will largely insulate each individual project from a serious challenge under NEPA and Section 51.45. As the Smith Ranch-Highland ISL project indicates, all future license actions related to satellite facilities and acquired operations will tier back to the original Environmental Report (ER) for the Ross Project and the Generic Environmental Impact Statement (GEIS) for ISL uranium recovery. Consistent with past practice, the NRC will most likely issue either EAs/FONSIs or will invoke categorical exclusions and avoid additional NEPA analysis altogether. Therefore, in order to address the real and substantial cumulative injuries to her interests that may result from the expanded Lance Project—a project that the NRC itself admits is "reasonably foreseeable," NRC Resp. at 28—Ms. Viviano must have standing to intervene in this proceeding via NRDC and Powder River, or else all opportunity to do so will be lost.[7]

These concerns are reflected in the precise phrasing of Petitioner's contentions. These contentions cover the applicant's failure to (1) adequately characterize the baseline water quality and underlying hydrogeology of the proposed project site (Contention 1), Petition at 10; (2) adequately analyze connected activities such as historical and planned uranium mining and oil and gas recovery that may create inter-connectivity between aquifers and geologic formations

[7] Under NRC administrative law, those wishing to challenge the Commission's NEPA documents and decisions for a given action must have acquired standing in the original licensing proceeding by offering admissible contentions. Thus, the NRC's own rules of procedure afford no recourse to Petitioners if they are denied standing at this initial stage of the proceeding.

(Contentions 3 and 5), Petition at 19–20, 27; and (3) adequately characterize the cumulative impacts of Strata's explicit plans to substantially expand its uranium recovery efforts in the region, as well as the combined impacts of oil and gas drilling in conjunction with these activities (Contention 5), Petition at 27. Breaking with Strata on this point, the NRC Staff has acknowledged the validity of Petitioners' concerns, noting that "Strata has indicated that it will likely develop more uranium recovery sites within the Lance District. Because those future ISR projects are reasonably foreseeable, the Staff must evaluate their cumulative impacts in its SEIS." NRC Resp. at 28. Ms. Viviano thus has standing: these contentions depict her reasonable concerns about the possibility of contamination of her aquifer from Strata's operations in conjunction with its parent company's larger plans in the area and other industrial activities.

In addition, Petitioners have provided expert testimony to support their claims that Strata fails in its ER to adequately address the potential cumulative impacts of the project in conjunction with oil and natural gas drilling and other ISL uranium mining operations. Specifically, Dr. Moran identified two major shortcomings in Strata's ER regarding cumulative impact analysis. First, the ER does not consider the impacts of past activities, including uranium exploration and ISL testing. Petition at 27–29; Moran Decl. at ¶ 7. Second, and more importantly in regards to standing, the ER fails to consider the full cumulative scope of the Ross-Lance Project as currently envisioned by Strata. Dr. Moran observed that

> [t]he Ross permit area is only one small part of Strata Energy's proposed Lance Project. However, the application does not fully discuss the scope of the larger planned Lance Project and in doing so disregards cumulative impacts. For instance, the application states that "it is likely that the proposed Ross CPP [central processing plant] will serve as the central processing location for future Strata satellite facilities and, potentially, satellite facilities owned and/or operated by other uranium recovery companies or water treatment entities; however, for purposes of the current license application, Strata intends for the Ross CPP to service only ISR operations within the proposed Ross license boundary." ER pg.

> 1–20. Therefore, any reasonably foreseeable future cumulative impacts associated with using the Ross CPP facility for future Strata or other operator sites and the related cumulative impacts related to water and other resources from the ISL mining associated with those future Strata or other operator sites are not disclosed or analyzed in the application.

Moran Decl. at ¶ 8.

Additionally, Strata's application illustrates the broad area of potential expansion just for uranium recovery in its TR at 1-17. *See* Attachment 5 (Fig. 1.4-2, Proposed Project Area). However, there is no textual analysis of the cumulative impacts related to this planned expansion, and no corresponding presentation for the location of past, current, and reasonably foreseeable oil and gas drilling and associated cumulative impacts. As such, Petitioners cannot know precisely whether and where oil and gas drilling is likely to occur in the future. As Dr. Moran stated, "Strata's application carves up the potential impacts into pieces, preventing the public and regulators from realistically looking at long-term, cumulative impacts." Moran Decl. ¶ 76. NRC regulations codified at 10 C.F.R § 51.45(b)(1), (2) and (5) require an applicant to analyze a project's foreseeable impacts, negative environmental effects, and irretrievable commitment of resources, respectively, and Petitioners properly allege this has not been done.

Given the scope and scale of potential uranium mining, oil and gas recovery, and other industrial and non-industrial activities in the immediate region, the lack of any detailed cumulative and connected impact analysis, and the demonstrated connectivity of the aquifers, Ms. Viviano has expressed valid and reasonable concerns regarding the potential contamination of her water and other concrete hydrogeologic harms resulting from Strata's operations and the potential cumulative impact from past, present and reasonably foreseeable operations. Thus, she has articulated an additional basis for standing, even if the Board finds that the current project on its own is unlikely to leach contamination directly to her wells. Indeed, Petitioners need not show

the precise or specific pathways by which water from the Lance and Fox Hills aquifers may intermingle with the aquifer that services Ms. Viviano's wells. Rather, Petitioners need only allege facts sufficient to show that a plausible pathway exists, or even simply that the underlying hydrogeology is not so well understood that the possibility of inter-aquifer contamination can be foreclosed. This fact is especially relevant because the Ross Project is merely the initial phase in what will probably be a much larger enterprise.

NRC case law supports Petitioners' position. For instance, in *Hydro Resources, Inc.*, 47 N.R.C. 261, 275 (1998), *rev'd in part on grounds unrelated to standing*, 48 N.R.C. 119 (1998), this Board found that "[p]etitioners who demonstrate that they rely on water supplies adjacent to the in situ leach mining project have a right to a hearing." In making this determination, the Board did not require Petitioners to establish the precise pathways by which contaminated water might arrive at their aquifer; instead, "[b]ecause knowledge of the relevant rock formations is still rudimentary and plans are incomplete, there are enough reasonable doubts to establish 'injury in fact.'" *Id.*

Similarly, in *Crow Butte Res.,* 68 N.R.C. at 708–09, the Board found standing because Petitioners had "demonstrated that some level of interconnection between aquifers is plausible" by alleging that "potential groundwater contamination from the Crow Butte mining site may travel through pathways of faults and joints and affect private wells at greater distances from the Crow Butte mining site." The Board specifically rejected the applicant's "factual arguments over such matters as the geological makeup of the area, the direction of flow, and the time required for water to flow a certain distance," finding that such issues "go to the merits of the case" and noting that "a licensing board's review of a petition for standing is to avoid the familiar trap of confusing the standing determination with the assessment of a petitioner's case on the merits."

Id. at 708 (internal quotation marks omitted). Petitioners need not "demonstrate their asserted injury with certainty, nor . . . provide extensive technical studies in support of their standing argument." *Id.* (internal quotation marks omitted). Rather, allegations of plausible means of contamination suffice for standing.

In short, Petitioners do not bear the burden of establishing a mathematical certainty of harm. Rather, they must only show that harm is plausible. As discussed above, Petitioners *have* demonstrated the potential for injury in numerous ways, and a positive outcome in this proceeding—whether denial of Strata's application or simply an order that Strata revise its ER to comply with the AEA's and NEPA's procedural requirements—will provide redress. *See Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 n.7 (1992). Hence, Petitioners have demonstrated standing.

II. CONTENTIONS

Pursuant to 10 C.F.R. § 2.309, Petitioners have offered five specific contentions they seek to litigate. Each contention challenges the sufficiency of the application under NRC regulations, as specified therein, as well as its compliance with NEPA.

At the outset, Petitioners observe that Strata and the NRC Staff raise arguments that primarily address the merits of Petitioners' contentions rather than their admissibility. But "in passing on the admissibility of a contention. . . 'it is not the function of a licensing board to reach the merits of [the] contention.'" *Sierra Club v. NRC.*, 862 F.2d 222, 226 (9th Cir. 1988) (quoting *Carolina Power and Light Co.*, 23 N.R.C. 525, 541 (1986)). Instead, the Board evaluates the admissibility of contentions in a similar manner as a federal court's review of claims in a well-plead complaint:

> The relevant inquiry is whether the contention adequately notifies the other parties of the issues to be litigated; whether it improperly invokes the hearing process by raising non-justiciable issues, such as the propriety of statutory requirements or agency regulations; and whether it raises issues that are appropriate for litigation in the particular proceeding.

Sierra Club, 862 F.2d at 228 (citing *Tex. Utils. Elec. Co.*, 25 N.R.C. 912, 930 (1987) and *Phila. Elec. Co.*, 8 A.E.C. 13, 20–21 (1974)); *see also Crow Butte Res.,* Nuclear Reg. Rep. P 31589, 2009 WL 1393858 at *11, 14 (May 18, 2009) (holding that the applicant's "arguments go to the merits" and that "[w]hether the [petitioner] has proved its claim is not the issue at the contention pleading stage"); *Crow Butte Res.,* 68 N.R.C. at 708 (the Board must not "confus[e] the standing determination with the assessment of a petitioner's case on the merits") (internal quotation marks omitted).

In spite of the law's clarity on this point, Strata and the NRC Staff raise arguments that would require petitioners to provide much more than a "brief explanation" of each contention and a "concise statement" of the facts supporting the contention. 10 C.F.R. § 2.309(f)(1). As their response briefs make clear, Strata and the Staff would have an argument on the merits at this stage of the proceeding when, in fact, each of Petitioners' five contentions meet all the requirements of 10 C.F.R. § 2.309(f)(1). Petitioners' arguments below will illustrate this point for each contention, and the Board should admit those contentions in turn.

Furthermore, Petitioners note that they have already stipulated that Strata is not directly bound by NEPA (although it *is* bound by 10 C.F.R. § 51.45). *See* Petition at 9. However, pursuant to 10 C.F.R. § 2.309(f)(2), Petitioners styled their NEPA claims as against the ER. S*ee id.* ("On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report."). Because an applicant's ER

generally serves as the basis for the Commission's eventual Draft Supplemental Environmental Impact Statement (SEIS), Petitioners raise NEPA considerations at this time in order to preserve any objections they may have if the same flaws found in the ER also appear in the Draft SEIS. In addition, if the Draft SEIS deviates from Strata's ER in a manner to which Petitioners object, they plan to submit amended or new contentions addressing those deviations pursuant to 10 C.F.R. § 2.309(f)(2).[8]

Finally, Petitioners acknowledge that the rules regarding the issuance of source material licenses are binding on the NRC itself, rather than on the applicant. *See* 42 U.S.C. § 2099 (barring the issuance of any source material license if it "would be inimical to the common defense and security or the health and safety of the public"); 10 C.F.R. §§ 40.32(c) (providing that source material licenses shall be issued to an applicant whose "proposed equipment, facilities and procedures are adequate to protect health and minimize danger to life or property"), 40.32(d) (providing for the issuance of a source material license if it "will not be inimical to the common defense and security or to the health and safety of the public"). Petitioners raise claims based on the AEA and corresponding regulations at this time in order to preserve any objections they may have if the Commission ultimately grants Strata a source material license in spite of the many problems with its application.

[8] As indicated in Footnote 6, *supra*, NRC rules require parties wishing to make NEPA claim against the Commission's Draft and Final EIS to first lodge any such claims against the applicant's ER as though it were the Draft EIS. The only exception to this rule is if the challenging party can demonstrate that later claims are based on new and significant information not available at the time the applicant presented its ER.

Contention 1: **The application fails to adequately characterize baseline (i.e., original or pre-mining) groundwater quality.**

In Contention 1, Petitioners argue that Strata's application fails to comply with 10 C.F.R. § 51.45, 10 C.F.R. Part 40, Appendix A and NEPA because it lacks an adequate description of the present baseline (i.e., original or pre-mining) groundwater quality. Most notably, Strata fails to demonstrate that groundwater samples were collected in a scientifically defensible manner, using proper sampling methodologies. The ER's departure from NRC guidance serves as additional evidence of these regulatory violations. NRC, Office of Nuclear Material Safety and Safeguards, NUREG-1569, Standard Review Plan for In Situ Leach Uranium Extraction License Applications §§ 2.7.1, 2.7.3 and 2.7.4 (2003). In support of this contention, Petitioners have offered the declarations of Drs. Moran, Sass and Abitz, particularly Moran Decl. at ¶¶ 36–56, Sass Decl. at ¶¶ 8–15 and 22–23, and Abitz Decl. at ¶¶ 16–27. These allegations are sufficient to establish a "genuine dispute . . . on a material issue of law or fact." 10 CFR § 2.309(f)(1)(v).

In response, Strata argues that 10 C.F.R. § 40.32(e) does not require a baseline water quality assessment at the licensing stage, but actually *bars* any such an assessment prior to wellfield development. Strata Resp. at 44–45. This interpretation of the regulation is incorrect, and the Board rejected an identical argument in *Powertech (USA), Inc. (Dewey-Burdock In Situ Uranium Recovery Facility* [*Dewey-Burdock*], Docket No. 40-9075-MLA at 63–64 (Aug. 5, 2010), where it noted that "[t]he last sentence of 10 C.F.R. § 40.32(e) explicitly exempts 'preconstruction monitoring and testing to establish background information from the prohibition on commencement of construction. We believe that such preconstruction monitoring includes adequate assessments of baseline water quality." The Board explained that its "interpretation is supported by the requirement in Criterion 7 of Appendix A to Part 40, which states that an

applicant must provide 'complete baseline data on a milling site and its environs.'" *Dewey-Burdock*], Docket No. 40-9075-MLA at 64. Strata reiterates Powertech's failed argument, which is no more persuasive now than it was in its previous iteration.

In fact, multiple authorities mandate that an application include an adequate assessment of baseline water quality prior to licensing. 10 C.F.R. § 40.32(e) requires a pre-license evaluation of "any appropriate conditions to protect environmental values," which, in the case of ISL uranium mining, necessarily entails an analysis of existing water quality. Similarly, 10 C.F.R. § 51.45(b) requires a "description of the environment affected;" Strata cannot plausibly claim that "the affected environment" does not encompass the groundwater in its current qualitative state. Criterion 5B(5)(a) of 10 C.F.R. Part 40, Appendix A specifies that "the concentration of a hazardous constituent must not exceed . . . [t]he Commission approved background concentration of that constituent in the ground water," a determination that necessitates an initial, adequate characterization of baseline water quality. As the *Dewey-Burdock* opinion explains, Criterion 7 of Appendix A requires an applicant to provide "complete baseline data on a milling site and its environs." *Dewey-Burdock*, Docket No. 40-9075-MLA at 64. Finally, NUREG-1569 discusses in several sections the need for "reasonably comprehensive" data shown to have been "collected by acceptable sampling procedures." NUREG-1569 §§ 2.7.3; *accord id.* at §§ 2.7.3, 2.7.4.

The NRC Staff avers that Criterion 5B(5)(a) requires no pre-license characterization of baseline water quality, but offers no support or citation for this claim. NRC Resp. at 16–17. The Staff further argues that NUREG-1569's standards for baseline water quality assessments "are not requirements," and that the "acceptability of programs proposed in applications are instead determined by NRC Staff on a case-by-case basis during the individual licensing review." *Id.* at

17. Setting aside the fact that the Staff later *relies* on NUREG-1569 to support its opposition to Petitioner's Contention 3, *id.* at 26, this argument sidesteps what should be obvious: if NRC departs from and effectively disavows its own guidelines when granting an individual license, this surely creates a "genuine dispute . . . on a material issue of law or fact," and any contention challenging that disavowal must be admitted. 10 C.F.R. § 2.309(f)(1)(v).

Both Strata and the Staff argue that the authorities Petitioners have cited—10 C.F.R. § 51.45, Criteria 5 and 7, and NUREG-1569—do not require the kind of technical adequacy or sufficiency of detail that Petitioners assert the regulations require with regard to a baseline water quality assessment, Strata Resp. at 45–46, NRC Resp. at 17–19, and attack the technical conclusions provided by Petitioners' experts. Strata Resp. at 46–47; NRC Resp. at 19–21. With these claims, Strata and the Staff do not fundamentally challenge whether Petitioners have raised a genuine issue as to fact or law, but rather seek to argue the merits of the contention. At this stage, Petitioners need only "[p]rovide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing." 10 C.F.R. § 2.309(f)(1)(v). Petitioners have offered more than enough factual allegations and expert testimony to fulfill this standard.

Once again, *Dewey-Burdock* is instructive. There, this Board rejected virtually identical arguments from Powertech and ruled that the tribal petitioners had raised "a genuine dispute as to the adequacy and completeness of the information Powertech provided in its Application," that the "Tribe [had] identifie[d] an issue that is within the scope of this proceeding and material to the findings the NRC must make in evaluating Powertech's Application," and that it had raised "a genuine dispute with Powertech's Application, namely whether Powertech has provided sufficient detail and scientifically defensible methodology for its baseline water quality

data." *Dewey-Burdock,* Docket No. 40-9075-MLA at 64. Similarly, Petitioners here have raised substantial questions as to the legal and technical adequacy of the application's baseline water quality characterization.

Strata and the NRC Staff's attacks on Contention 1 are simply arguments on the merits of this contention. Yet this proceeding is not about the merits; it is simply about Petitioners' right to intervene. Despite their efforts, Strata and the Staff have in no way shown that Petitioners failed to "provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact," or that Petitioners failed to "include references to specific portions of the application . . . that the petitioner disputes and the supporting reasons for each dispute." 10 C.F.R. § 2.309(f)(1)(v). As these pleadings show, there is a genuine dispute between the Staff and Strata, on the one hand, and Petitioners, on the other, as to whether the Strata's ER meets the legal and technical requirements for characterizing baseline water quality. The merits dispute must come later; this contention satisfies 10 C.F.R. § 2.309(f)(1)'s standards for admissibility.

Contention 2: The application fails to analyze the environmental impacts that will occur if Strata cannot restore groundwater to primary or secondary limits.

In Contention 2, Petitioners submit that Strata's application falls short of the requirements of 10 C.F.R. § 51.45 and NEPA because it fails to evaluate the reasonable likelihood that Strata will be unable to restore groundwater to primary or secondary limits. Although 10 C.F.R. Part 40, Appendix A, Criterion 5B(5) permits the NRC to establish an "alternative concentration limit" (ACL) for groundwater renewal that is less protective than either baseline water quality levels (i.e., primary standards) or the U.S. Environmental Protection Agency's (EPA) safe drinking water levels (i.e., secondary standards), it does not excuse the

applicant from evaluating the environmental impacts that may result if the post-decommissioning water quality standards fall below primary or secondary levels.[9] To demonstrate the reasonable likelihood that Strata will eventually require an ACL that falls below primary or secondary water quality standards, Petitioners relied on the declarations of Drs. Moran and Abitz, particularly Moran Decl. at ¶¶ 66–68 and 70–75 and Abitz Decl. at ¶¶ 28–29. These allegations raise a material dispute about both the likelihood of significant groundwater degradation at the Ross site and the legal sufficiency of Strata's impact analysis under 10 C.F.R. § 51.45 and NEPA. Accordingly, this contention is admissible pursuant to 10 C.F.R. § 2.309(f)(1).

Strata misconstrues the nature of Contention 2, and suggests that it entails a prediction that Strata will violate Criterion 5B(5)'s alternative concentration limit. Strata Resp. at 48. This is a contortion of Petitioners' argument. Petitioners do not dispute that the Commission may establish an ACL for hazardous contaminants under Criterion 5B(5)(C), which is presumably less protective than either primary restoration standards (as described in Criterion 5B(5)(A)) or secondary standards (as described in Criterion 5B(5)(B)). Nor do Petitioners suggest that Strata will fail to satisfy whatever ACL the Commission eventually establishes. What Petitioners *do* claim is that Strata must analyze in its ER the environmental impacts that will result if (as is reasonably likely) the NRC sets an ACL, which would necessarily be less protective than either primary or secondary standards and would cause a permanent degradation of the aquifer. This is

[9] The NRC Staff claims that "Criterion 5B(5) thus sets a primary standard of background concentration and a secondary standard of an ACL." NRC Resp. at 22. This puzzling conclusion omits Criterion 5B(5)(B), which establishes as a secondary restoration standard values listed in Criterion 5(C)—EPA's safe drinking water standards. Thus, Criterion 5B(5) establishes *three* tiers of standards rather than two: baseline water quality, EPA safe drinking water standards and an NRC-approved ACL.

precisely the kind of considerations that NEPA and section 51.45 encompass: it is an "impact[] of the proposed action on the environment," and "adverse environmental effect[]," a choice affecting "[t]he relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity," and an "irreversible and irretrievable commitment[] of resources." 10 C.F.R. § 51.45(b)(1), (2), (4) and (5). Because Strata has not analyzed the possibility of long-term aquifer degradation at all in its ER, it has violated these regulations.

Along these same lines, Strata claims that section 51.45 does not require an ER to "assess the potential impacts of failure to complete groundwater restoration in accordance with Criterion 5B(5)'s requirements," and argues that the Nubeth project's NRC-approved restoration demonstrate that Strata, too, will comply with the proper regulations for groundwater restoration. Strata Resp. 48–49. Again, Strata misunderstands the nature of Petitioners' claims. The crux of Contention 2 is not compliance or lack of compliance with Criterion 5B(5), but rather the need for analysis of impacts that will result from the project even *presuming* compliance. Indeed, NEPA always presumes that the agency action in question (or, in the case of section 51.45, the applicant's proposed action) is lawful; the entire purpose of the statute is to ensure that agencies and those acting under their approval do not take such lawful actions without first considering the environmental impacts of those actions. Thus, even if NRC approves an ACL and Strata meets that limit without error, the aquifer will have been degraded as a result of Strata's operations. As Petitioners' experts explain, this is a reasonably likely possibility, and section 51.45 requires Strata to analyze the environmental effects and impacts of this outcome in its ER.

The Staff's arguments are essentially no different from Strata's on Contention 2. Like Strata, the Staff wrongly construes this contention to entail a "conclu[sion] that this particular

Applicant will act contrary to the stated regulatory requirement." NRC Resp. 22. Petitioners have already discussed why Contention 2 is about impact analysis rather than compliance with alternate concentration limits. To the extent that the Staff makes arguments that extend beyond Strata's, these claims address the merits of Contention 2, not its admissibility. In alleging that Petitioners and their experts "fail to provide specifics on how the Applicant's plan to restore groundwater to primary or secondary limits will not be met," *id.*, the Staff in no way undermines the fact that Petitioners and their experts have raised a genuine dispute of material law and fact on this point. More importantly, the Staff's claim is not even correct: Drs. Moran and Abitz both provide specific historical and technical evidence demonstrating why Strata is unlikely to achieve primary (baseline water quality) or secondary (EPA-issued safe drinking water levels) restoration standards during decommissioning. *See* Moran Decl. at ¶¶ 66–67, 70–75; Abitz Decl. at ¶¶ 28–29. Neither Strata nor the NRC Staff have provided any evidence suggesting that the Ross Project will not cause significant aquifer degradation, even if Strata complies with an NRC-provided ACL. Petitioners meet the requirements of 10 C.F.R. § 2.309(f)(1), and Contention 2 should be admitted.

Contention 3: The application fails to include adequate hydrogeological information to demonstrate Strata's ability to contain fluid migration.

In Contention 3, Petitioners allege that Strata's application fails to provide sufficient information regarding the hydrogeological setting of the area to fulfill the requirements of 10 C.F.R. § 51.45, 10 C.F.R. Part 40, Appendix A, Criteria 4(e) and 5G(2), and NEPA. This contention further explains how the application runs afoul of NUREG-1569 § 2.6, which provides guidance for complying with these mandatory rules. Finally, Contention 3 addresses the ER's failure to assess the likelihood of, and impacts that would result from, fluid migration from

the project site to the adjacent surface water and groundwater, an analysis that is mandatory under 10 C.F.R. § 51.45 and NEPA and is discussed in NUREG-1569 §§ 2.6 and 2.7. Petitioners supported this contention with the declarations of Drs. Moran, Sass and Abitz, particularly Moran Decl. at ¶¶ 14–31, Sass Decl. at ¶¶ 8–15, 24–26 and Abitz Decl. at ¶¶ 7–15.

Strata and the NRC Staff aver that a thorough review of the hydrogeology in the area is not necessary as part of the license application. Strata Resp. at 50; NRC Resp. at 24–25. Strata further claims that Petitioners did not submit sufficient evidence to demonstrate possible pathways for fluid migration. Strata Resp. at 50–51. The Staff also asserts that, even if possible pathways exist, this fact is irrelevant because of "[t]he Applicant's commitment in the Application to seal all boreholes prior to operation." NRC Resp. at 25.

As with the first two contentions, Strata and NRC attempt to impose on Petitioners the burden of proving the merits of their case rather than addressing whether the Petitioners have submitted an admissible contention. In fact, Petitioners have demonstrated through the testimony of Drs. Moran, Sass and Abitz the existence of plausible pathways for fluid migration to the adjacent surface and groundwater. Specifically, Dr. Moran references the scientific literature supporting his finding that the aquifers in the area may be hydrologically connected, Moran Decl. at ¶¶ 23, 28, and concludes that Strata did not conduct sufficient pump tests to confirm or deny the connection of the aquifers. *Id*. at ¶ 29. He further noted that over 5,000 exploratory boreholes were drilled in the area, which may provide pathways for fluid migration. *Id*. at ¶¶ 22, 31. As Dr. Moran explained, "the open boreholes provide potential pathways for the movement of ground water and solution fluids between the various water-bearing strata and the inter-fingering finer-grained sediments, both vertically and laterally. . . . Thus there is much less

certainty that Ross site ground waters and leach solutions can be as completely contained as is alleged throughout the Application." *Id*. at ¶ 22.

Drs. Sass and Abitz expressed similar concerns with Strata's application. For instance, Dr. Sass observed that data provided in the ER could support a conclusion that fluid migration may now be occurring. Dr. Sass highlighted "the similar chemical composition of the various aquifers and especially the high concentrations of sodium carbonate and bicarbonate," which "may suggest high groundwater interchange among the aquifers via the long existing exploratory bore holes." Sass Decl. at ¶ 25. Dr. Abitz similarly explained that "there are hundreds of pathways between the OZ and other water horizons due to the nearly 2,000 exploration boreholes drilled in the project area" that Strata identifies in its application, which could allow for significant fluid migration. Abitz Decl. at ¶ 13.

NRC's argument that migration pathways routes will be closed because "NRC staff will memorialize the Applicant's commitment to seal all boreholes as a license condition," NRC Resp. at 25, is at this stage a speculation that does not affect the admissibility of Contention 3. Moreover, in making this claim, NRC essentially acknowledges that there are presently possible migration pathways that must be addressed through the license review process. NRC's argument also fails to account for the myriad uranium exploration boreholes and oil and gas wells that were not acknowledged or analyzed in the application. These wells remain unaddressed by either Strata or NRC.

In essence, the dispute between Strata and the NRC Staff, on the one hand, and Petitioners and their experts, on the other, regarding the ER's inadequate treatment of fluid migration goes to the merits of Contention 3, not its admissibility. Thus, the Board should find that Petitioners have identified an issue that is within the scope of this proceeding and material to

the findings the NRC must make in evaluating Strata's application. Petitioners have raised a genuine dispute regarding the adequacy of the hydrogeologic information provided in the ER to ensure the confinement of extraction fluids. Petitioners have supported their assertions with detailed expert testimony from Drs. Moran, Sass and Abitz. Thus, the Board should hold that the Petitioners have satisfied the requirements of 10 C.F.R. § 2.309(f)(1) and admit Contention 3.

Contention 4: The application fails to adequately document negative impacts on groundwater quantity.

Petitioners allege in Contention 4 that Strata's application violates 10 C.F.R. § 51.45 and NEPA by failing to properly analyze the project's impacts on groundwater quantity. They further argue in this contention that the application includes conflicting information on groundwater consumption, which precludes an accurate evaluation of the project's impacts to area water quantity. Petitioners supported Contention 4 with the declaration of Dr. Moran at ¶¶ 59–63.

Strata challenges the admissibility of Contention 4 in its entirety and again attempts to argue the merits of the case, stating that section 51.45 "does not prescribe any requirements for ERs to contain the level of detail on potential groundwater consumption described by the Council's experts." Strata Resp. at 53. The NRC Staff, by contrast, admits that "while [it] does not entirely agree with Contention 4, it believes that the contention is admissible in part." NRC Resp. at 27. Specifically, the Staff accepts that Strata "will likely develop more uranium recovery sites within the Lance District," and that "future ISR projects are *reasonably foreseeable*." *Id.* at 28 (emphasis added). As such, the Staff acknowledges that it must evaluate any cumulative impacts that would result from a project expansion in a SEIS, noting that it will

> need more information about groundwater consumption of reasonably foreseeable activities in the Lance District in order to fully assess the cumulative environmental impacts of the Ross Project. Thus, the portion of contention 4 disputing the cumulative impacts of Strata's groundwater consumption is within

> the scope of the NRC's review and is material to its decision whether or not to issue a license. 10 C.F.R. §§ 2.309(f)(1)(iii)-(iv)."

Id. In accepting the partial admissibility of Contention 4, the NRC Staff credits Petitioners with providing expert testimony that details the portions of the application they dispute, in fulfillment of 10 C.F.R. §§ 2.309(f)(1)(v)-(vi). NRC Resp. at 28.

To the extent that both Strata and the Staff quarrel with the admissibility of Contention 4, they once again assail the merits of the Contention rather than its admissibility, and thereby seek to raise the bar for contention admissibility. Even if there were no legal impediments to a merits review at this stage, the fact remains that there is insufficient data to engage in such a comparison: Dr. Moran described in his declaration the ER's flawed analysis of groundwater quantity impacts and its insufficient information on groundwater consumption. He explained that the application fails to analyze how much water will be used by the Ross operations in the long term and instead only offers several partial and conflicting estimates of possible groundwater consumption. Moran Decl. at ¶¶ 58–59, 62–63. Those questions can be decided at the merits stage, but are wholly premature at this time. To fully address them, NRC must make additional efforts at obtaining more information on the "reasonably foreseeable" groundwater quantity impacts of the entire Lance Project.

Thus, there is a genuine dispute of material fact as to the extent to which Strata's "ISL projects will be able to pump tremendous volumes of ground water rapidly," and whether "with such low precipitation, recharging the aquifers and recovery of local water levels may require much longer periods of time than are predicted in the Application, especially if numerous other ISL projects are approved" in the area. *Id.* at ¶ 60. As this Board has previously held, a factual dispute of this nature is sufficient to meet 10 C.F.R. § 2.309(f)(1)'s standards for admissibility.

In *Dewey-Burdock*, the Board admitted a similar contention regarding groundwater quantity, deeming it "within the scope of this licensing proceeding and . . . material to the findings the NRC must make." *Dewey-Burdock,* Docket. No. 40-9075-MLA at 68–69. And in this instance, even the NRC Staff acknowledges that the contention is admissible, at least in part. Thus, under section 2.309(f)(1), this Board should admit Contention 4.

Contention 5: The application fails to adequately assess cumulative impacts of the proposed action in conjunction with other industrial activities in the area, and fails to evaluate adverse environmental effects resulting from an insufficient decommissioning bond and the disposal of 11e(2) byproduct material. It also does not properly consider impacts to visual resources at the nearby Devils Tower National Monument and improperly tiers to NRC's flawed GEIS for ISL uranium mining.

Petitioners' Contention 5 submits that the application fails to comply with NEPA, its implementing regulations and 10 C.F.R. § 51.45 because it fails to consider cumulative impacts that may result from Strata's proposed ISL uranium mining operations in conjunction with oil and gas drilling and other ISL uranium mining operations, all of which exist in the project vicinity and are likely to continue and expand in the foreseeable future. Also discussed in this contention was the ER's failure to address the foreseeable impacts and negative environmental effects that will result in the likely event that Strata's decommissioning bond is insufficient to achieve its purpose, impacts from disposal of 11e(2) byproduct material, and impacts to visual resources at the nearby Devils Tower National Monument. Finally, Contention 5 asserts that the application violates NEPA because the ER tiers to NRC's flawed and unsupportable GEIS for ISL uranium mining. Petitioners offered the declaration of Dr. Moran at ¶¶ 7–8, 60, 69, 76–78 and 96–98 as authority for this contention.

Strata argues against the admissibility of each part of this contention, but in fact retreats—once again—to a dispute over the merits of the claims. Strata asserts that its discussion

in Section 2.2 provides a sufficient analysis of cumulative impacts to fulfill the regulatory requirements. Strata Resp. at 54. A disagreement over the degree and quality of cumulative impact analysis required in Strata's ER (and in the NRC's subsequent SEIS) is a matter for the Board to decide at the merits phase. Moreover, Strata's response that "cumulative impacts associated with any potential future Strata satellites will be addressed in the ER(s) associated with each such satellite," gives credence to Dr. Moran's testimony that "Strata's application carves up the potential impacts into pieces, preventing the public and regulators from realistically looking at long-term, cumulative impacts." Moran Decl. at ¶ 76; *see also* Strata Resp. at 54.

In contrast to Strata, NRC again acknowledges that "a narrow portion of the first element of contention 5 is admissible—the element of contention 5 that disputes Strata's analysis of cumulative impacts involving future expansion of ISR projects in the Lance District and the use of the Ross CPP for those projects." NRC Resp. at 31. The NRC goes on to state "the Petitioners have set forth an issue that is material to the Staff's determination in this proceeding and have supported the issue by citing specific portions of the Application that lack information material to the NRC's evaluation of the environmental impacts of the proposed action." *Id.*

The dispute between Strata, on the one hand, and Petitioners (and, in this instance, the NRC Staff) regarding the sufficiency of the ER's cumulative impacts analysis is an issue for the merits, not a question of admissibility. The Board should find that Petitioners have raised a genuine dispute as to the adequacy of the ER's discussion and evaluation of the cumulative impacts that may result from the proposed action in conjunction with the many surface- and groundwater-disturbing industrial activities in the region that have previously occurred, are presently occurring, or are likely to occur in the future—namely, oil and natural gas drilling and other ISL uranium mining operations. Petitioners provided the expert opinion of Dr. Moran to

support their assertions. The Board should therefore admit Contention 5 for cumulative impacts, pursuant to 10 C.F.R. § 2.309(f)(1).

With regard to financial assurance, Strata (with support from the NRC Staff) argues that

> the financial assurance analysis *must* be proposed by the license applicant/licensee. [Contention 5] assumes that NRC will not adequately fulfill its regulatory oversight of Strata's financial assurance, which without specific facts, is an unjustified conclusory assumption as it is recognized under the law (i.e., AEA, as amended) that NRC is the "expert" regulatory agency. Furthermore, it fails to address 10 CFR Part 40, Appendix A, Criterion 9's provision requiring annual financial assurance updates that reflect site-specific circumstances.

Strata Resp. at 55 (emphasis in original); *accord* NRC Resp. at 31–33. Petitioners are aware that the applicant must propose financial assurance instruments and that the Commission will review and update annually site-specific circumstances and the exact amount of the bond. However, Strata and the Staff disregard the main point of Petitioners' claim: regardless of whether Strata's methodology for calculating its decommissioning bond complies with the substantive requirements of Criterion 9, Section 51.45 requires Strata to evaluate the environmental impacts and negative effects that will result if the bond is insufficient. This is a well-founded concern supported not only by Dr. Moran's testimony, *see* Moran Decl. at ¶¶ 96–98, but also by EPA in their comments on NRC's Draft GEIS for ISL uranium mining:

> Section 2.115 of the draft GEIS provides several examples of uranium mining facilities where the number of pore volumes needed for aquifer restoration were significantly underestimated during the planning or operations phases. Aquifer restoration efforts commonly take much more time and many more pore volumes than initially estimated.

Petition at 30. Petitioners have raised a genuine dispute as to material law and fact on this point, and it is an admissible component of Contention 5.

Petitioners further allege in Contention 5 that the ER fails to analyze the environmental impacts that may result from the disposal of11e(2) byproduct material. Specifically, the ER

ignores the possibility that disposal options for this waste product may not, in fact, be available when necessary. Consistent with its prior claims, Strata effectively argues the merits of this question, claiming that that it need not consider these issues under section 51.45. Strata also argues that Petitioners have not shown that disposal of 11e(2) byproduct material may not be feasible, and that there is no evidence that negative impacts from disposal are reasonably likely. Strata Resp. at 56–57. Petitioners and Strata disagree here on a proper interpretation of section 51.45's analytical mandate, as well as on the likelihood of safe and effective disposal. This disagreement is a genuine dispute of material law and fact, and is admissible as part of Contention 5.

The Staff acknowledges that it "must, under NEPA and Part 51, analyze the foreseeable environmental impacts of waste disposal," NRC Resp. at 34, but argues that such analysis need not occur until after issuance of Strata's license. This position disregards the fact that section 51.45 requires an applicant to submit a legally sufficient ER "*with its application*"—this analysis cannot be postponed until the post-license phase. The Staff also alleges this analysis need not consider the possibility that disposal of 11(e)(2) waste will not be feasible, Staff Resp. at 35, but ignores the fact that only a handful of disposal sites currently exist, while new uranium mining sites continue to proliferate in Wyoming and across the West. Thus, Contention 5's discussion on 11(e)(2) byproduct disposal articulates a material dispute of law and fact and is admissible under 10 C.F.R. § 2.309(f)(1).

Contention 5 also addresses the ER's failure to evaluate the impacts the Ross Project will have on the viewshed of Devils Tower National Monument. Strata responds that there is no "specific NRC regulation that actually requires Strata to assess the potential for visual and aesthetic impacts on the Devil's [sic] Tower Monument." Strata Resp. at 57. But this

misconstrues the nature of administrative law: agencies do not issue regulations on such a microscopic scale. Instead, the Commission drafted 10 C.F.R. § 51.45 (and Congress enacted NEPA) to encompass environmental impacts broadly speaking, including visual impacts to cherished national landmarks such as Devils Tower, a far cry from a non-descript "specific location," as Strata would have it. Strata Resp. at 58. Furthermore, Strata's "full visual and aesthetic impact analysis in its ER" neglects to address the site-specific impacts at Devils Tower, as do the programmatic discussions in NRC's GEIS for ISL uranium mining (otherwise known as NUREG-1910). Strata Resp. at 58. For its part, the NRC Staff simply asserts that it disagrees with Petitioners, claiming that Strata's ER adequately addresses visual impacts. NRC Resp. at 34–35. Petitioners have raised a genuine dispute as to the adequacy of the ER's analysis of visual impacts to Devils Tower, and this section of Contention 5 is properly admissible under 10 C.F.R. § 2.309(f)(1).

Finally, Petitioners allege in Contention 5 that Strata's ER tiers to (and relies heavily on) NRC's GEIS for ISL uranium mining. Strata objects and claims that Petitioners "offer no factual or analytical basis for claiming that the data, analyses, and conclusions offered by Strata using NUREG-1910 are erroneous or inadequate for the grant of its requested license." Strata Resp. at 59. Strata further suggests that Petitioner's argument calls into question "the viability of NRC's tiering process," and therefore "constitutes an impermissible attack on the Commission's regulations and should be rejected as CEQ regulations for tiering are incorporated by reference." *Id*.

Strata misunderstands Petitioners' claims on this topic, suggesting again that the Board decide the merits of the contention rather than its admissibility. Petitioners do not disagree that site-specific NEPA documents may generally tier to a valid GEIS. However, Petitioners have

numerous substantive objections to the NRC's GEIS for ISL uranium mining, which falls far below the standards established by NEPA. Rather than burden this Board with such a litany, Petitioners incorporated them by reference in Contention 5 and asserted that Strata's ER cannot satisfy 10 C.F.R. § 51.45 by relying on a document that is inadequate under NEPA. Petition at 31–32. Petitioners fully acknowledge that any direct challenge to the GEIS is unripe until the Commission incorporates that document into a subsequent SEIS. What *is* ripe, however, is Petitioner's claim that Strata's ER is invalid under section 51.45, having laid its foundation on a document that cannot withstand legal and technical scrutiny.

Once again, Petitioners do not challenge the concept of tiering under NEPA, and Strata's suggestion to the contrary is misplaced. Rather, Petitioners are challenging the specific act of tiering *this* ER to *this* specific programmatic document—i.e., the GEIS. Furthermore, it is critical that Petitioners lodge this challenge at this time to preserve any objections it will have if (as is virtually certain) the Commission tiers an eventual SEIS to the flawed GEIS for ISL uranium mining. If Petitioners do not raise the issue at this stage in the proceeding, they may be barred from raising it at any point later in the proceeding.

Similarly, the NRC Staff suggests that "neither the Petitioners nor their expert witnesses tie the comments to the Application at hand, and it is not for the Board to connect the dots for the Petitioners." NRC Resp. at 36. On the contrary, the Petition cites many of the countless sections of the ER that tier to the GEIS to illustrate just how dependent Strata's report is on the Commission's programmatic document. *See* Petition at 31 (referencing ER at 1-10, 1-14 to 1-17, 1-24, 1-26, 2-4, 2-11, 2-13 and 2-18 to 2-19). Petitioners do not expect the Board to bear a heavy burden and "connect dots." Rather, Petitioners raise this issue to 1) challenge the technical adequacy of the ER for tiering to a flawed GIES; 2) preserve their rights to contest an eventual

SEIS that similarly relies on the GEIS; and 3) to preserve their rights to challenge the GEIS itself when the matter is ripe.

Thus, Petitioners have properly alleged that Strata's ER (and potentially the Commission's SEIS as well) falls short of 10 C.F.R. 51.45's and NEPA's standards because it tieres to a technically flawed GEIS. Petitioners incorporated by reference extensive support and documentation describing GEIS's problems, and these materials in turn underscore Petitioners' objections to the ER for relying on this document. Any further inquiry should be reserved for the merits. Thus, Petitioners respectfully submit that this aspect of Contention 5—and, indeed, Contention 5 in its entirety—meets the admissibility requirements of 10 C.F.R. § 2.309(f)(1).

IV. CONCLUSION

For the foregoing reasons, Petitioners have demonstrated that they have standing and that their contentions are admissible. Therefore, Petitioners should be permitted to intervene in this proceeding and are entitled to a hearing on their contentions.

Respectfully submitted,

/s/ Geoffrey H. Fettus

/s/ Andres J. Restrepo

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Date: Dec. 15, 2011

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Reply and accompanying attachments in the above-captioned proceeding were served via the Electronic Information Exchange (EIE) on the 15th day of December 2011, which to the best of my knowledge resulted in transmittal of same to those on the EIE Service List for the captioned proceeding.

/s/ Geoffrey H. Fettus
Geoffrey H. Fettus

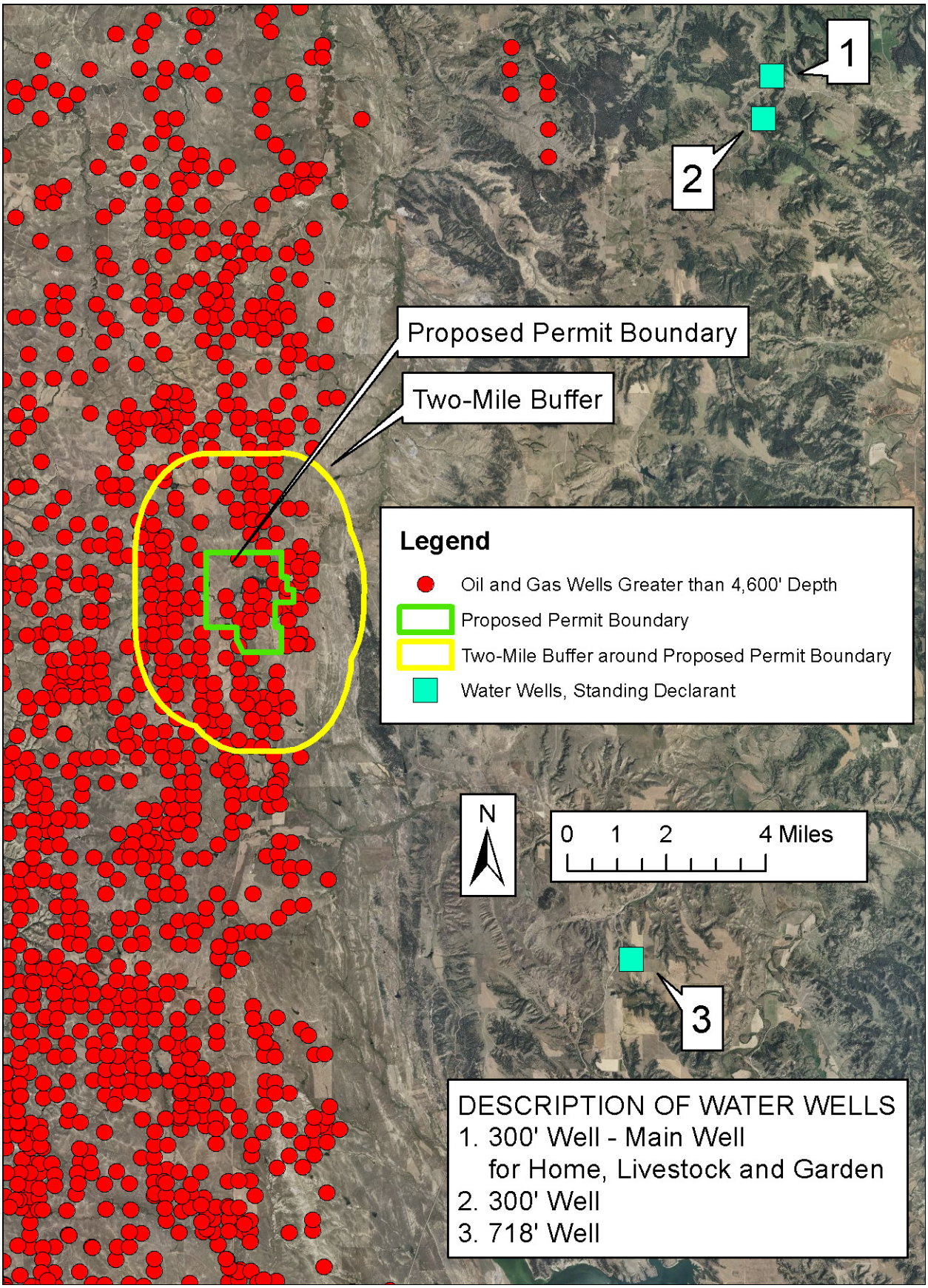
Date: December 15, 2011

ATTACHMENT 1

Map depicting oil and gas wells greater than 4,600 feet at the Ross Project site

Developed from data found at Wyoming Oil and Gas Conservation Commission's public website (http://wogcc.state.wy.us/)

Dec. 15, 2011


1
2
Proposed Permit Boundary
Two-Mile Buffer
Legend
Oil and Gas Wells Greater than 4,600' Depth
Proposed Permit Boundary
Two-Mile Buffer around Proposed Permit Boundary
Water Wells, Standing Declarant
N
0 1 2 4 Miles
3
DESCRIPTION OF WATER WELLS
1. 300' Well - Main Well
for Home, Livestock and Garden
2. 300' Well
3. 718' Well

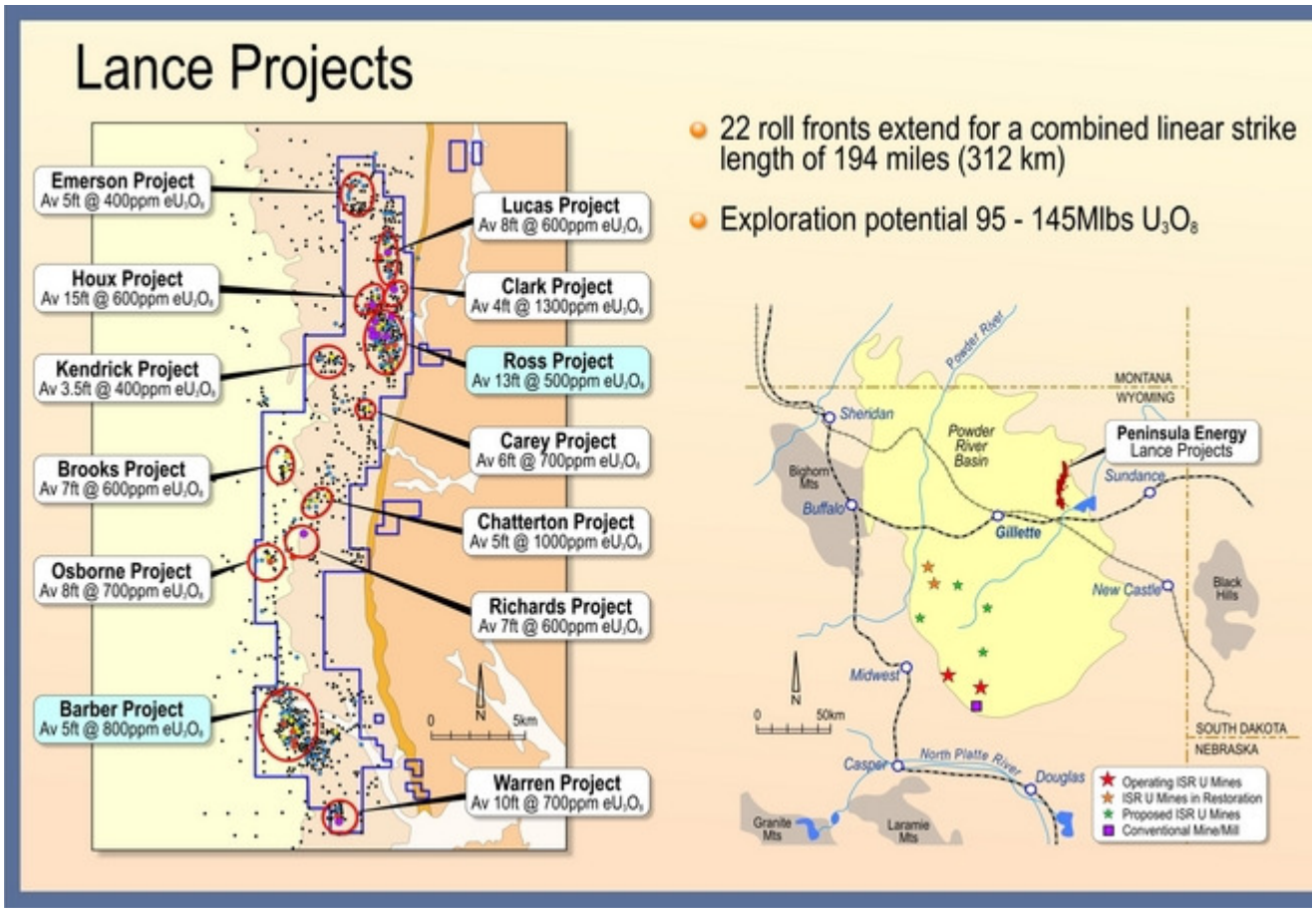
ATTACHMENT 2

Peninsula Energy, Ltd.

Map of Lance Projects

Available at http://www.pel.net.au/projects/lance_project__wyoming_usa.phtml

Downloaded Dec. 9, 2011


Lance Projects
Emerson Project
Av 5ft @ 400ppm eU3O8
Houx Project
Av 15ft @ 600ppm eU3O8
Kendrick Project
Av 3.5ft @ 400ppm eU3O8
Brooks Project
Av 7ft @ 600ppm eU3O8
Osborne Project
Av 8ft @ 700ppm eU3O8
Barber Project
Av 5ft @ 800ppm eU3O8
Lucas Project
Av 8ft @ 600ppm eU3O8
Clark Project
Av 4ft @ 1300ppm eU3O8
Ross Project
Av 13ft @ 500ppm eU3O8
Carey Project
Av 6ft @ 700ppm eU3O8
Chatterton Project
Av 5ft @ 1000ppm eU3O8
Richards Project
Av 7ft @ 600ppm eU3O8
Warren Project
Av 10ft @ 700ppm eU3O8
N
0
5km
22 roll fronts extend for a combined linear strike length of 194 miles (312 km)
Exploration potential 95 - 145Mlbs U3O8
Powder River
MONTANA
WYOMING
Sheridan
Powder River Basin
Peninsula Energy
Lance Projects
Bighorn Mts
Buffalo
Sundance
Gillette
New Castle
Black Hills
Midwest
N
0
50km
SOUTH DAKOTA
NEBRASKA
Casper
North Platte River
Douglas
Granite Mts
Laramie Mts
Operating ISR U Mines
ISR U Mines in Restoration
Proposed ISR U Mines
Conventional Mine/Mill

ATTACHMENT 3

Letter from Susan M. Frant, Chief Fuel Cycle Facilities Branch Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, NRC to Mr. William F. Kearney, Manager, Health, Safety, and Environmental Affairs, Power Resources, Inc., regarding Combination of Smith Ranch-Highland Uranium Project (SR-HUP), Ruth and North Butte Licenses, License Amendment 5 to the Smith Ranch Source Materials License SUA-1548

Aug. 18, 2003

NRC Accession No. ML032320650

August 18, 2003

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P.O. Box 1210
Glenrock, WY 82637

SUBJECT: COMBINATION OF SMITH RANCH - HIGHLAND URANIUM PROJECT (SR-HUP), RUTH AND NORTH BUTTE LICENSES, LICENSE AMENDMENT 5 TO THE SMITH RANCH SOURCE MATERIALS LICENSE SUA-1548 (TACs L52512, L52517 AND L52531)

Dear Mr. Kearney:

I am responding to your requests dated March 12, 2003, May 6, 2003, and July 9, 2003, to combine the Smith Ranch-Highland Uranium Project (SR-HUP) licenses (License Numbers SUA-1511 and SUA-1548/Docket Number 40-8981). In addition, you requested the inclusion of the Ruth/North Butte (License Number SUA-1540/Docket Number 40-8981) and Gas Hills as satellite facilities. The staff has completed its review with the results as described below.

The staff has concluded that inclusion of the Gas Hills facility in this license consolidation is premature. In a separate request dated June 24, 1998, PRI requested an amendment to the Highlands license (License Number SUA-1511) to operate an *in-situ* leach facility at Gas Hills as a satellite facility to Highlands. The staff has not concluded its review of the 1998 request. Should this request be approved, the staff would amend the Smith Ranch license (SUA-1548), consistent with your more recent consolidation request. Otherwise, the staff has determined that your request of May 2003 is acceptable. Accordingly, the staff has modified the Smith Ranch license (SUA-1548) as described in the following paragraphs.

Amendment 5 of License No. SUA-1548, Docket No. 40-8964, for the Smith Ranch, reflects the consolidation, establishing Smith Ranch as the main uranium processing facility with the Highland, Ruth and North Butte, facilities to be operated as satellite facilities. License No. SUA-1511, Docket No. 40-8857, for the Highlands facility and License No. SUA-1540, Docket No. 40-8981, for the Highland, Ruth and North Butte facilities are hereby consolidated into the SR-HUP license.

The following license conditions in License No. SUA-1548 have been modified or updated:

License condition 9.1 has been modified to indicate that the SR-HUP will be the primary processing facility; while the Highland, Ruth and North Butte facilities will be operated as satellite facilities, from which shipments of loaded ion exchange (IX) resin or yellowcake slurry, which theses facilities are authorized to process, will be transported to the Central Processing Plant at Smith Ranch.

License condition 9.3 has been modified to include the additions of the Highland Uranium Project, Ruth and North Butte Facilities, on the Smith Ranch license.

License condition 9.5 has been modified to reflect that in addition to the currently approved surety instrument, an Irrevocable Letter of Credit from the BNY PARIBAS, New York Agency, 919 3rd Avenue, 3rd Floor, New York, NY, 10022, in the amount of $14,456,300.00, for Smith Ranch, PRI has added $21,278,100.00 for the Highland Uranium Project, $102,300.00, for the Ruth facility, $55,400.00 for the North Butte facility, to the existing surety instrument, in favor of the State of Wyoming.

Section 10 - Operational Limits, Controls, and Restrictions has been modified to indicate that License condition 10.1 applies to the SR-HUP; License condition 10.2 applies to the Ruth and North Butte facilities. Additionally, License condition 10.2 indicates that the Ruth and North Butte facilities cannot become operational until new operating plans are submitted, providing the necessary information addressed in NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction Applications," and are approved by the NRC.

License condition 10.1.2.c, has been modified to require PRI to notify the NRC prior to restarting the Highland dryer.

License condition 10.1.3, has been updated to incorporate the guidance in NUREG-1569 concerning well integrity testing.

License condition 10.1.6 has been modified to include requirements for SR-HUP radium settling ponds and purge reservoirs.

License condition 10.1.8 has been modified to provide the requirements for disposal of liquid effluents for SR-HUP.

License condition 10.1.9 has been modified to incorporate the license application requirements from chapters 5 and 6 of PRI's approved license application, which allows PRI's Safety and Environmental Review Panel to add additional wellfields for restoration.

The approved change in License No. SUA-1548, Amendment 5, consolidating the Highland, Ruth and North Butte licenses into the SR-HUP license, is considered administrative and organizational in nature. The remaining license conditions modify or update process operations. Accordingly, pursuant to 10 CFR Part 51.22(c)(11), neither an environmental assessment nor an environmental impact statement is required for this action because: (i) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, (ii) there is no significant increase in individual or cumulative occupational radiation exposure, (iii) there is no significant construction impact, and (iv) there is no significant increase in the potential for or consequences from readiological accidents.

You and Mr. John Lusher, the NRC Project Manager for the Smith Ranch facility, discussed these changes to SUS-1548 on July 17, 2003. If you have any questions concerning this letter or the enclosure, please contact Mr. Lusher at (301) 415-7694 or by email at JHL@nrc.gov.

In accordance with 10 CFR Part 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Susan M. Frant, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8964, 40-8857, 40-8981
License No. SUA-1548, SUA-1511, SUA-1540

Enclosure: Materials License SUA-1548,
Amendment No. 5

cc: S. Ingle, WDEQ
S.P. Collings, PRI
L. Setlow, EPA

August 18, 2003

In accordance with 10 CFR Part 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Susan M. Frant, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8964, 40-8857, 40-8981
License No. SUA-1548, SUA-1511, SUA-1540

Enclosure: Materials License SUA-1548,
Amendment No. 5

cc: S. Ingle, WDEQ
S.P. Collings, PRI
L. Setlow, EPA

Closes: L52512, L52517and L52531

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NAME	JLusher		BGarrett		S. Treby		RNelson		SFrant	
DATE	7/30/03		7/30/03		8/14/03		8/14/03		8/18/03	

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ATTACHMENT 4

Letter from Keith I. McConnell, Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, NRC to Mr. John McCarthy, Power Resources, Inc., Smith Ranch-Highland Uranium Project, regarding Review of Request to Operate the Reynolds Ranch Project In Situ Leach Uranium Recovery Facility—Amendment 11 to Source Material License SUA-1548

Jan. 31, 2007

NRC Accession No. ML062710206

January 31, 2007

Mr. John McCarthy
Power Resources, Inc.
Smith Ranch-Highland Uranium Project
P.O. Box 1210
Glenrock, WY 82637

SUBJECT: REVIEW OF REQUEST TO OPERATE THE REYNOLDS RANCH PROJECT IN SITU LEACH URANIUM RECOVERY FACILITY - AMENDMENT 11 TO SOURCE MATERIAL LICENSE SUA-1548 (TAC J00127)

Dear Mr. McCarthy:

By letter dated January 14, 2005 to the U.S. Nuclear Regulatory Commission (NRC), Power Resources, Inc. (PRI) submitted an application requesting an amendment to Source Material License SUA-1548) to allow the operation of a satellite *In-Situ* Leach (ISL) uranium recovery facility at the Reynolds Ranch Project site. The Reynolds Ranch Satellite will be operated as part of the adjacent Smith Ranch-Highland Uranium Project (SR-HUP) in Converse County, Wyoming. PRI's application was supplemented and revised by letters dated April 7, 2005, and March 15, 2006, in response to NRC requests for additional information dated March 23 and September 8, 2005, respectively. Subsequent revisions to the application were provided by PRI in correspondence dated September 19, 2006.

NRC staff has completed its review of PRI's request to operate the Reynolds Ranch Project satellite ISL uranium recovery facility. This review included the preparation of an Environmental Assessment (EA) to evaluate the environmental impacts associated with the proposed Reynolds Ranch Project. The staff's environmental review is documented in the enclosed EA (Enclosure 1) and concludes that the proposed licensing action will not have a significant impact on the environment. Accordingly, pursuant to the requirements of 10 CFR Part 51, a Finding of No Significant Impact was prepared and published in the *Federal Register* on January 5, 2007 (72 FR 3), to document the staff's finding and to notice the availability of the EA and PRI's license amendment request, as supplemented and revised.

The staff's review also included a detailed evaluation of the safety aspects of the proposed Reynolds Ranch Project for compliance with the requirements of 10 CFR Part 40, Appendix A, and 10 CFR Part 20. The staff's detailed safety review is documented in the enclosed Safety Evaluation Report (SER) (Enclosure 2). Based on its review, the staff concludes that the proposed Reynolds Ranch Project satisfies the requirements of 10 CFR Part 40, Appendix A, and 10 CFR Part 20. Accordingly, the staff has determined that PRI's request to amend the SR-HUP Source Materials License SUA-1548 is acceptable. The staff hereby approves PRI's amendment request for the Reynolds Ranch Project, subject to the changes to PRI's license as described in Section 8.0 of the enclosed SER. Specifically, the staff has revised License Conditions (LCs) 9.1, 9.3, 9.5, 9.6, and 9.9 and included new LCs 9.13 and 10.4.1. License Amendment No. 11 is enclosed (Enclosure 3).

In addition to the above amendments, LC 9.2 has been revised to reflect organizational changes within NRC. All correspondence related to this license shall be sent to the following address: Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, Mailstop T7-E18, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by express delivery to 11545 Rockville Pike, Rockville, MD 20852-2738.

If you have any questions regarding this letter, please contact Paul Michalak, the Project Manager for Source Material License SUA-1548, at (301) 415-7612, or by e-mail, to pxm2@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,

/RA/

Keith I. McConnell, Deputy Director
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 40-8964
License No.: SUA-1548

Enclosures:
1. Environmental Assessment for the Reynolds Ranch Amendment
2. Safety Evaluation Report for the Reynolds Ranch Amendment
3. Amendment No. 11 to Source Materials License SUA-1548

cc: S. Ingle, WDEQ

In addition to the above amendments, LC 9.2 has been revised to reflect organizational changes within the NRC. All correspondence related to this license shall be sent to the following address: Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, Mailstop T7-E18, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by express delivery to 11545 Rockville Pike, Rockville, MD 20852-2738.

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,

/RA/
Keith I. McConnell, Deputy Director
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 40-8964
License No.: SUA-1548

Enclosures:
1. Environmental Assessment for the Reynolds Ranch Amendment
2. Safety Evaluation Report for the Reynolds Ranch Amendment
3. Amendment No. 11 to Source Materials License SUA-1548

cc: S. Ingle, WDEQ

(CLOSES TAC J00127)
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DATE	01/9/07		01/11/07		01/22/07		01/17/07		01/31/07	

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ATTACHMENT 5

Strata Energy

Ross ISR Project- Technical Report

Figure 1.4-2—Proposed Project Area

Dec. 2010

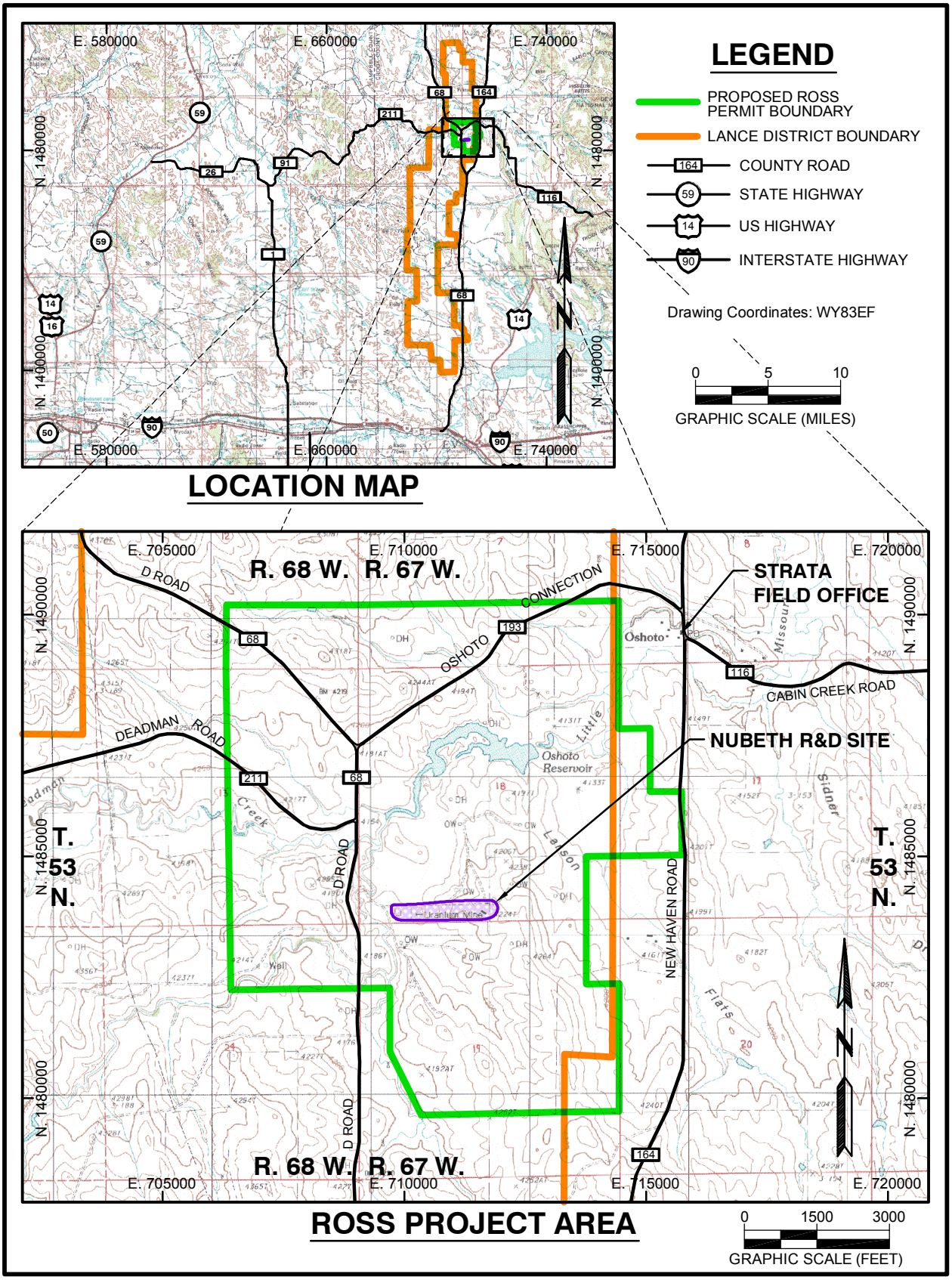

Figure 1.4-2. Proposed Project Area