Appendix F

Responses to Comments and Compilation of Comments Received for the Lost Creek Uranium *In-Situ* Recovery Project DEIS

PUBLIC COMMENTS AND BLM RESPONSES ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE LOST CREEK ISR PROJECT, SWEETWATER COUNTY, WYOMING

Introduction

This appendix includes public comments and Bureau of Land Management (BLM) responses on the Draft Environmental Impact Statement (DEIS) for the Lost Creek Uranium *In-Situ* Project (Project). BLM provided the public with 45 days from the date of publication of the Notice of Availability (NOA) for the Project DEIS to review and submit comments. The NOA was published in the *Federal Register* on April 27, 2012. The 45-day public comment period officially ended on June 11, 2012. Comments received after the closing date were considered to the extent practicable and also addressed during preparation of the Final Environmental Impact Statement (FEIS). A total of 22 letters were received by the BLM.

According to the National Environmental Policy Act (NEPA), BLM is required to identify and formally respond to all substantive public comments. On the basis of the Council on Environmental Quality's (CEQ) regulations, a substantive comment does one or more of the following:

- Questions, with a reasonable basis, the accuracy of the information in the environmental impact statement;
- Questions, with a reasonable basis, the adequacy of environmental analysis as presented;
- Presents reasonable alternatives other than those presented in the DEIS that meet the purpose and need of the proposed action and addresses significant issues; and/or
- Causes changes or revisions in the proposal.

Nonsubstantive comments simply state a position in favor of, or against, an alternative; merely agree or disagree with BLM policy; or otherwise express an unsupported personal preference or opinion.

BLM is required to respond only to substantive comments to fully inform the public of concerns raised. For this FEIS comment response appendix, BLM has provided responses to all substantive public concerns identified during comment analysis. Responses to concerns considered nonsubstantive thank the commenter for participation in the NEPA process, and response to comments considered outside the scope of the plan simply state that the comment is outside the scope of the NEPA process and contain no further explanation. Responses to substantive comments are more extensive, complete, and often offer an explanation of why a comment may or may not have resulted in a change to the Project FEIS.

Comment Review Methods

BLM read all public response letters in their entirety and identified comments that related to a particular concern or resource consideration or that proposed management actions. BLM looked not only for each action or change requested

by the public, but also for any supporting information to capture the comment in its entirety. In doing so, paragraphs within a response letter may have been divided into several comments because of multiple comments being presented, or alternatively, sections of a letter may have been combined to form one coherent statement. Once a comment was identified, BLM assigned each to a category associated with the overall premise of the comment. A coding structure served as a tool to sort comments into logical groups by topics. In this case, the coding structure was organized to mirror the sections of the DEIS; some additional categories were added that included additional classification of comments. This appendix contains the names of the commenters, their substantive comments, and responses to those comments. A list of the commenters, by date the comment was received, and the comment letters, in their entirety, are also included in the second part of this appendix.

It is important to note that during the process of identifying concerns, all comments were treated equally. The comments were not weighted by organizational affiliation or status of respondents, and the number of duplicate comments did not add more bias to one comment than another. The process was not one of counting votes, and no effort was made to tabulate the exact number of people for, or against, any given aspect of the DEIS. Rather, emphasis was placed on the content of a comment.

Response to Comments

In the case of identical or similar comments or comments from opposite points of view, a summary of the comments is provided rather than each individual comment. In the case of unique comments, each response is preceded by the submitted comment. As previously stated, the comments are organized according to the outline of the Project DEIS/FEIS and in no way indicate the significance of any statement. BLM's response to the public concern follows each public concern.

The abbreviation for the name of an agency, company, or organization used more than once in the responses are abbreviated is shown in the first response to that group, with one exception, and on the list of the commenters in this appendix. The comments received from the Biodiversity Conservation Alliance (BCA) were a compilation of comments from several organizations, including the BCA, EarthWorks Action, Californians for Western Wilderness, and Western Watersheds Project. Comments from these organizations will be referenced as BCA et al.

The BLM received an extension request from the Western Watersheds Project on June 11, 2012. The BLM's response to this letter is included at the end of the response section.

No Comment

Comments: National Park Service (Page 1)
The National Park Service has no comment on the subject project.

Response: Thank you for your participation in the NEPA process.

Comment: Wyoming Game and Fish Department (WGFD) (Page 1)
"The staff of the Wyoming Game and Fish Department has reviewed the Draft Environmental Impact Statement for the Lost Creek In Situ Recovery Project located in Sweetwater County. We have provided extensive comment on this project through our interactions with the proponent and our state permitting agency, the Department of Environmental Quality (DEQ). We refer BLM to the DEQ permit for information pertaining to this project regarding our concerns and recommendations for terrestrial wildlife and aquatic resources."

Response: WGFD was involved throughout the writing of the DEIS, and their comments and concerns were addressed earlier in the writing process.

General

General Support

Comment: Chris Pedersen; Myron Benda; David Urasky; Carbon County Higher Education Center; Wyoming Business Council; Fischer-Watt Gold Co., Inc. (Pages 1-2)
Several commenters wrote in to express their support of the Project.

Response: Thank you for your comment and your interest and participation in the development of the FEIS for the Lost Creek Uranium In-Situ Recovery Project

Comment: Aaron S. Howey
It is my understanding that the only permit (document) left for UR Energy to get on its Lost Creek project is the BLM. Is that correct? I am looking through all of the permits (NRC, EPA, and so on) along with the forms and documents submitted to your office in the last few years. Everything seems to be in order…do you know an expected record date?

Response: Table 1.4-1 of the DEIS provides a list of Regulatory Requirements for the Lost Creek Uranium In-Situ Recovery Project. Nearly all of the regulatory requirements have been issued or approved. The BLM anticipates issuing a Record of Decision in late August 2012. Additional approvals, such as NRC approval of wellfield packages (License Condition 10.12), will still be needed during the life of the Project.

Comment: Fischer-Watt Gold Co., Inc. (Page 1)

Sage Grouse - Page 3.8-27 second paragraph states "No active Greater sage-grouse leks have been located in the Permit Area". There are Sage grouse in the area, but no active breeding areas within the permit boundaries. My view is that the Greater Sage Grouse and wildlife in general can cohabitate with ISR mining operations.

Response: The terminology "in the Permit Area" means the same as "within the permit boundaries", thus no change in terminology is necessary.

General Concerns

Comment: Robert LeFaivre
This comment expressed general concerns (e.g., Revised Statute 2477, public participation opportunity) associated with the Project and the EIS process.

Response: Revised Statute **(**RS) 2477 was enacted as Section 8 of the Mining Act of 1866. It states that, "the right-of-way for the construction of highways over public lands not reserved for public uses is hereby granted." RS 2477 was repealed by FLPMA on October 21, 1976, subject to valid, existing rights (FLPMA did not terminate existing RS 2477 rights-of-way (ROWs). This EIS does not adjudicate, analyze, or otherwise determine the validity of claimed ROWs. However, nothing in the FEIS extinguishes any valid ROW, or alters in any way the legal rights that the state and counties have to assert and protect RS 2477 rights or to challenge in federal court or other appropriate venue any EIS imposed use restrictions that they believe are inconsistent with their rights.

In accordance with 40 CFR 1506.6, the comment period for the DEIS ended on June 11, 2012. Late comments, including the Sweetwater County Conservation District, were considered to the extent practicable. Additionally, the BLM will be accepting public comment on the FEIS within 30 days after the Environmental Protection Agency (EPA) publishes the NOA in the Federal Register.

Editorial

Technical

Comment: Lost Creek ISR, LLC (LCI) (Pages 11-14; #s 1-5, 7-12, 14-16, 24-28, 35, 39)
LCI submitted several requests to change and update technical information in the DEIS to more accurately describe the Project.

Response: The requested changes and clarification to the text, tables, and figures have been completed.

Comment: United States Fish and Wildlife Service (USFWS) (Page 2)
"Page 4.7-3, Fencing and Screening Measures - The first paragraph states that the Storage Ponds would be monitored daily for wildlife mortality. Please reword the

sentence as follows: "The Storage Ponds would be monitored daily for wildlife morbidity and mortality."”

Response: Sentence was corrected as requested.

Comment: LCI (Page 15; #38)
DEIS Page4.15-2, Section 4.15.4.1: The DEIS spends considerable time discussing numbers of employees and contractors during various stage of the project. It is unclear that these numbers are consistent with those presented in the Plan of Operations. Please verify that the FEIS conforms to the numbers presented in the Plan of Operations or provide an explanation of the differences.

Response: The numbers of employees and contractors during various phases of the Proposed Action are referenced from the Nuclear Regulatory Commission's Supplementary Environmental Impact Statement (NRC SEIS). The NRC SEIS construction phase equates to the BLM Draft Environmental Impact Statement (DEIS) Initial Construction stage. The NRC SEIS operation and aquifer restoration phases equate to the BLM DEIS Mine Unit Development stage, Operation phase, and Mine Unit Reclamation stage. The NRC SEIS decommissioning phase equates to the BLM DEIS Final Reclamation stage. Data for Table 4.15-3 of the BLM DEIS were referenced from an email and attachment between Ur-Energy USA and NRC [LCI Email (February 21) From J. Cash (UR-Energy USA) to A. Bjornsen (NRC), ML111450560. 2011]. After careful review of the email and attachment, the number of Plant construction contractors was revised from 20 employees to 40 employees in Table 4.15-3. Consequently, the number of employees for the Initial Construction Stage was revised from 74 to 94 throughout the BLM Environmental Impact Statement.

Regulatory

Comment: LCI (Page 12-15; #13, 18, 40)
Project Description: LCI submitted several requests to change and update regulatory information in the DEIS to more accurately describe the Project.

Response: The requested changes and clarification to the text, tables, and figures have been completed.

Comments: LCI (Page 13, #21, 23)
Carbon County Regulations: "LCI is concerned that the DEIS states that the Project would conform to land use regulations and develop road maintenance agreements with both Carbon and Sweetwater Counties. However, since none of the Project is in Carbon County there will be no need to comply with their land use regulations. Please remove Carbon County from the language."

Response: LCI would need to coordinate with both Sweetwater and Carbon County, because both counties would be impacted by the Proposed Action as analyzed in the DEIS. Much of the Project's workforce (as recently demonstrated

by LCI advertising in Carbon County for job openings) as well as goods and services are anticipated to reside and be purchased, respectively, in Carbon County. Therefore, the commuting workforce and transportation of goods and services would use Carbon County roads (e.g., Sooner Road). Per Sections 3.2.2 and 4.3.4 of the DEIS as well as Section OP 2.6 of the Operations Plan in the WDEQ-Land Quality Division (LQD) Permit to Mine, the Sooner Road is identified as a primary access road. The majority of the workforce would be expected to commute to the worksite through the Carbon County access roads via the Sooner Road and the Bairoil Road. Under Title 43 Code of Federal Regulations Subpart 3809.420 (b), "When commercial hauling is involved and the use of an existing road is required, the authorized officer may require the operator to make appropriate arrangements for use and maintenance." This requirement is consistent with what has already been identified in the Plan of Operations submitted to the BLM, in the NRC SEIS and in the WDEQ-LQD Permit to Mine. For example, the NRC staff concluded that the Project could increase daily traffic by approximately 82 percent along the Bairoil Road, partially in Carbon County, and would increase wear and tear of the road surface (Section 4.3.1.1 of the NRC SEIS).

Road agreements between LCI and the counties would "address roadway maintenance, surfacing, dust control, weight limits, traffic, snow removal, improvements, and related topics" as noted in Section 4.3.1.2 of the DEIS. Section OP 2.6 of the Operations Plan in the WDEQ-LQD Permit to Mine states that, "If improvements to off-site roads are needed, permits will be obtained from the BLM or other appropriate agency, and all relevant guidelines will be followed."

Comment: LCI (Page 2)
Purpose and Need: "In order to fully capture the basis for the DEIS's alternatives analysis, the statement of BLM's purpose and need would be strengthened if it explicitly noted the Energy Policy Act's mandate that BLM "promote dependable, affordable, and environmentally sound production and distribution of energy for the future", as well as that BLM seeks to act consistent with the call for specific "significant incentives for the continuation and expansion of nuclear power in the United States." DEIS, p. 1-4. Similarly, the standard for development and analysis of alternatives could incorporate BLM's purpose and need at page 2-59, as follows:

With the exception of the No Action Alternative, alternatives would need to meet: 1) BLM's purpose and need of implementing the EPACT's mandate to promote dependable, affordable and environmentally sound production and distribution of energy for the future and Congress' direction to support the continuation and expansion of nuclear power in the United States, as well as making federal lands available for the production of locatable minerals consistent with FLPMA's multiple use mandate; and 2) the Project's objective of producing six million pounds of uranium over an operating period of 12 years.

Conforming text edits should be made throughout the DEIS, including at pages ES-6, 1-3 and 1-8."

Response: Comment noted. The BLM believes the purpose and need presented in the DEIS are adequate. Additional text was added to the Executive Summary, Section 1.3.1, and Section 2.3 of the EIS to state that, "The Project's objective would be to produce an estimated six million pounds of uranium over an operating period of 12 years."

Comment: LCI (Page 11; #6)
License Amendments and Permit Revisions: "DEIS Page 1-10, Section 1.4.3, Paragraph 2: The DEIS states the BLM may request a license amendment or permit revision. While the BLM may make such a request, the WDEQ-LQD and the NRC retain their authority and have no requirement to approve such a request. LCI recommends that the language in the DEIS be revised to clarify the NRC and WDEQ-LQD retain their individual authority and are not required to act upon a recommendation from the BLM and to clearly indicate that BLM's impact analysis, and any approvals to the Plan of Operation, are not dependent on such further action."

Response: During preparation of the DEIS, clarification of BLM's options for involvement in the NRC and WDEQ licensing and permitting processes was requested by a cooperator. Therefore, the language has been left in the EIS, except that the potential 'example' was removed as it is no longer applicable.

Comment: Sweetwater County Board of County Commissioners (SWCBCC) (Page 1)
County Permit Amendments: "Even though Lost Creek ISR, LLC (Lost Creek) has obtained the required Development Plan and Zone Changes from Sweetwater County, they may have to amend these permits if they are required to move their plant site and other extraction facilities to accommodate existing designated Sage Grouse Core Areas. If amendments are required, Lost Creek should contact Eric Bingham, Land Use Director at 872-3916 to discuss this process."

Response: Comment noted. The BLM asked LCI to contact Eric Bingham, Sweetwater County Land Use Director, if the amendments to the Zone Change and Development Plan are required.

Comment: SWCBCC (Page 2)
"Sweetwater County Roads: The following county road issues should be addressed:

Road Use and Maintenance Agreement: Prior to the BLM's Authorization of the Lost Creek ISR Project, Sweetwater County requests that the Developer prepare and submit a Road Use Maintenance Agreement for County review and approval.

This Road Use Maintenance Agreement must meet the standards and conditions of the Sweetwater County Public Works Director, the Sweetwater County Attorney's Office and the Sweetwater County Board of County Commissioners. Some of the issues that must be addressed by this road use and maintenance agreement include: roadway maintenance, surfacing, dust control, weight limits, traffic, snow removal, migration measures, improvement construction, and others.

County Road Crossing and Access Permits: Any crossing, access to, or utilization of a Sweetwater County Road right-of-way requires an Access Permit or License from the Sweetwater County Department of Engineering. Project developers are required to contact the Sweetwater County Public Works Director to obtain necessary roadway permits prior to development."

Response: Table 1.4-1 and Section 4.3.1.2 of the DEIS include text that addresses Sweetwater County Roads.

Comment: SWCBCC (Page 2)
"Work Camps: The Sweetwater County Comprehensive Plan - 2002 encourages" the location of associated worker housing within existing communities where services are/can be provided." If a compelling need can be demonstrated, a work camp may be permitted through the Sweetwater County Conditional Use Permit process. This permitting process takes 60 to 90 days to complete and is administered by the Land Use Department."

Response: A work camp is not intended for the Project. As encouraged by the Sweetwater County Comprehensive Plan, workers would reside at nearby existing communities (e.g., Bairoil, Wamsutter, or Rawlins).

Per Section OP 3.6 of the WDEQ-LQD Permit to Mine, a Plant Operator and a Wellfield Operator will both be on-site 24 hours a day, 7 days a week to monitor Plant and wellfield operations, maintain security surveillance, and respond to upset conditions, but these Operators will be working in shifts, i.e., they will not be living on site. In case of adverse weather conditions and other exceptional cases, the Office in the Plant could accommodate workers until travel conditions improved, but again, no on-site housing is planned.

Comment: SWCBCC (Pages 2-3)
"Intergovernmental Cooperation and Community Impacts: Sweetwater County Comprehensive Plan - 2002 encourages cooperative interaction between local, State and Federal agencies. With this goal in mind, Sweetwater County encourages the BLM and Lost Creek to continue their efforts in soliciting comments from the Towns of Wamsutter and Bairoil and proactively address their concerns with the Environmental Impact Statement process. Also important to Sweetwater County is consideration of project impacts to our neighbors Carbon County and the City of Rawlins. Community concerns that should be considered include: housing, school capacity, traffic patterns (especially for heavy equipment

and supplies being transported through communities), law enforcement, health service and other public services."

Response: Potential socioeconomic impacts (housing, school capacities, law enforcement, health care, and other public services) from the Project on the local communities and counties are discussed in Section 4.15. Transportation impacts are discussed in Section 4.3.

The BLM added the City of Rawlins and the Towns of Wamsutter and Bairoil to the Lost Creek Uranium In-Situ Recovery Project's mailing list. The City of Rawlins and the Towns of Wamsutter and Bairoil were provided an electronic copy of the Final Environmental Impact Statement (FEIS). The BLM will be accepting public comment on the FEIS within 30 days after the Environmental Protection Agency publishes the Notice of Availability in the Federal Register. The City of Rawlins and the Towns of Wamsutter and Bairoil will also be notified of the Record of Decision.

In February 2011, the BLM announced the opening of public scoping for the Lost Creek Uranium *In-Situ* Recovery Project, and contacted Carbon County, the Coalition of Local Governments, Fremont County, and Sweetwater County, among others. In March 2011, representatives of the Town of Wamsutter, Carbon County, and Sweetwater County attended the public scoping meeting hosted by the BLM in Rawlins, Wyoming. The BLM received public scoping comments from the Town of Bairoil, Rock Springs Chamber of Commerce, and Carbon County Economic Development Corporation. The public scoping comments were analyzed to identify issues and concerns of the Proposed Action. As noted in Section 6.1 of the DEIS, the Carbon County Commissioners and Sweetwater County Commissioners have been participating as cooperating agencies on the Project's EIS.

Comment: SWCBCC (Page 3)
"Free on Board (FOB): Sweetwater County encourages the BLM, to the greatest extent possible under the BLM' s authority, to encourage Lost Creek and its contractors and subcontractors to deliver construction materials "Free on Board" (FOB) to the County in which the materials will be utilized. This will help ensure that the sales tax will be properly allocated and paid to the County where construction and related impacts will occur."

Response: Section 4.15.1 of the Draft Environmental Impact Statement notes, "While there are no agency-required measures related to socioeconomic conditions, LCI and LCI's contractors and subcontractors would be encouraged to deliver construction materials "Free on Board" to the County in which the materials would be used to help ensure that the sales tax would be properly allocated and paid to the County where construction and related impacts would occur."

Comment: SWCBCC (Page 3)
"Protection of Natural Features:
Historic and Cultural Sites: The Sweetwater County Comprehensive Plan - 2002 calls for the County to "Identify and protect the County's unique cultural, recreational and environmental resources" and to "Encourage a balance between resource development and environmental protection". With these goals in mind, Sweetwater County appreciates the BLM's efforts in inventorying and planning for impacts that may occur to historical and cultural resources. Sweetwater County Supports these planning efforts and the protection of these important resources, but at the same time Sweetwater County strongly encourages the BLM to carefully consider and balance how the protection of Historic and Cultural Sites will affect the ability of Lost Creek to develop and utilize their resources for economic gain. Sweetwater County's economy depends on mineral extraction, which makes it important that the preservation of Historic and Cultural Sites occur in a balanced manner that also protects the viability of this project and the economy of Sweetwater County.

Wildlife: Sweetwater County supports the State of Wyoming Sage Grouse Core Area Program, and appreciates that the BLM and Lost Creek are planning Alternatives that will comply with this program. Again, Sweetwater County strongly supports the Lost Creek ISR Uranium Project, and if you have any questions regarding Sweetwater County's above comments related to this project's Draft EIS, please contact me at 307-872-3890."

Response: Comment noted.

Comment: EPA (Page 3)
Storage Pond Regulations: "[T]he Draft EIS (Section 2.3.3.3) describes leak detection system as required under 40 CFR 192, Health and Environmental Standards for Uranium and Thorium Mill Tailings. We would like to point out that regulation 40 CFR 192 is currently undergoing rulemaking and may be changed prior to closure and reclamation of this facility. Because of this, requirements for mitigation measures should be reviewed by the BLM as standards change. Specifically, water quality standards after restoration should meet the regulatory requirements under 40 CFR 192 and the restoration plan approved by the Nuclear Regulatory Commission.

Response: Comment noted. There are provisions in the WDEQ-LQD Noncoal Rules (Chapter 7, Section 5(a) and Chapter 11, Section 18(b)) and Wyoming Statute 35-11-415(a) that require periodic review of the permit to determine if revisions are necessary. The NRC has similar provisions.

Comment: WDA (Page 2)
Meeting with Grazing Permittees: "The WDA sent previous comments pertaining to the Scoping Notice of the ISR Project, requesting the "BLM staff and ISR Project operators to work closely and consistently with affected grazing

permittees and agriculture producers ... "The BLM and Operator neglected to include any information in the DEIS regarding annual or bi-annual meetings with affected grazing permittees in the Project Area. Due to the Operator developing the ISR Project over a period of time, and impacting three different allotments, we strongly suggest open and transparent communication between the BLM, the Operator and grazing permittees."

Response: The BLM has provided, and will continue to provide, opportunities for affected parties to obtain information about the Project through public meetings for which notice has been given. LCI has also committed to working with grazing permittees through county, state, and federal public meetings for which notice has been given, and by providing data not otherwise available, including sampling an off-site supply well and obtaining cattle tissue samples from at least one local permittee for baseline documentation.

The BLM has routinely spoken with the grazing permittees about the Lost Creek Uranium In-Situ Recovery Project during meetings in the field or during discussions concerning permit renewals. LCI has also indicated that, as opportunity allows, it has visited with grazing permittees potentially affected by the Proposed Action at the Lost Creek Permit Area.

To facilitate transparent communication, the BLM added the grazing permittees that may be affected by the Proposed Action to the Lost Creek Uranium In-Situ Recovery Project's mailing list. These grazing permittees were provided an electronic copy of the FEIS. The BLM will be accepting public comment on the FEIS within 30 days after the EPA publishes the NOA in the Federal Register. The grazing permittees will also be notified of the Record of Decision.

Comment: WDA (Page 3)
Transportation Plan: WDA recommended the BLM "request, review and approve a transportation plan developed by the Operator, with specific provisions for carpooling and travel times to reduce dust and collisions with livestock and wildlife." WDA also commented that "BLM must request the Operator compensate livestock grazing permittees for damages due to vehicle collisions to range improvements such as fences or livestock injured or killed by vehicles en route to or inside the Project Area."

Response: Transportation issues are described in Section 4.3 of the EIS. Measures related to dust control, including transportation measures, are described in Section 4.11.1 of the EIS (referencing the WDEQ-AQD Permit). Measures related to wildlife (and livestock) protection, including road and right-of-way measures, are described in Section 4.9.1.1 of the EIS (referencing the Wildlife Protection Plan in the WDEQ-LQD Permit to Mine). The suggested language for compensation in the event of damage to range improvements or livestock would require a presumption that the "Operator" would be liable in all instances of damage, regardless of who was driving the vehicle (e.g., someone not employed

or contracted by the Operator) or the circumstances of the accident (e.g., a poorly maintained fence through which cattle could get onto a road). Therefore, the existing federal, state, and local laws applicable to accidents are considered adequate.

Typographical

Comment: LCI (Page 12-15; #s 17, 19-20, 22, 33, 36, 41)
LCI submitted several requests for corrections and clarifications.

Response: The requested changes and clarification to the text, tables, and figures have been completed.

Proposed Action

Site Facilities

Comment: USFWS (Page 2)
DEIS "Page 4.7-2: Storage Ponds - This section should specify the minimum amount of freeboard required at the storage ponds to prevent overflow and spills."

Response: The amount of freeboard (3 feet), as cited in the WDEQ-LQD Permit to Mine, Section OP 2.9.4, was added and is also now included in Section 4.9.6.5.

Comment: WDA (Page 1)
Fencing Cross-Reference: The WDA supports the use of wildlife friendly fencing to temporarily exclude cattle and wild horses from areas detrimental to the health of these animals. We recommend the BLM clearly specify in the DEIS, section 2.1.2.6 the total number of acres the Operators will fence of the permitted area for the Proposed Action. Section 4.2.4.1 indicates "If all of the proposed disturbance areas of the Project were fenced at once, 345 acres (eight percent) of the 4,254-acre Permit Area would be removed from livestock grazing." We recommend bringing this language forward to 2.1.2.6.

Response: The text in Section 2.1.2.6 was modified as requested.

Reclamation

Comment: Marybeth Devlin (Page 8)
Reclamation Timing: "If the mine closes prematurely for economic reasons, waivers can likely be secured that would allow delays in reclamation that might last for years. In the meantime, the range would languish. Forage loss would continue and erosion would worsen. If the mine were later reactivated and its permit extended, that could push back reclamation even further."

Response: As noted in Sections 2.1.3 and 2.1.5 of the DEIS, to minimize erosion potential, weed invasion, and related problems, surface reclamation in a mine unit

would commence immediately upon construction completion. Vegetative cover would be maintained during the mine unit operation through monitoring and additional seedings when necessary. After completion of groundwater restoration in a mine unit, the subsequent well abandonment, pipeline removal, and demolition of surface facilities would result in surface redisturbance within the mine unit, which would need to be reclaimed. Prior to the commencement of this post-mining surface reclamation, affected areas and buildings (i.e., header houses) would be surveyed and decontaminated, and facilities and ancillary equipment would be decommissioned and removed in accordance with NRC requirements.

Other measures that would be implemented in the Proposed Action and are discussed in Section 2.1 of the DEIS include: stockpiling of topsoil and subsoil; replacement of subsoil then topsoil; and surface preparation and reseeding with the permanent seed mix at the next appropriate season (or if necessary to prevent erosion prior to the next appropriate season, with a temporary seed mix, which would be a rigorous certified weed free annual cover crop such as sterile rye grass or millet).

Section 2.1.5.2 of the DEIS notes that, "Prior to the start of the Project, LCI would be required to establish and maintain a reclamation performance bond, in an amount approved by NRC, BLM, and WDEQ-LQD, to cover the costs for a third party to complete groundwater restoration, radiological decontamination, facility decommissioning, and surface reclamation. Under order of forfeiture, the bond would be payable to the State of Wyoming or the US Secretary of Interior (under which BLM operates). The bond amount would be reviewed annually by NRC, BLM, and WDEQ-LQD and adjusted to reflect changes in cost and in the Project, including construction and operation activities planned for the next year."

WDEQ-LQD does have a provision for "interim stabilization" (LQD NonCoal Rules 3(k)(ii)); however, it has not been applied to ISR. If an operator were to request interim stabilization, WDEQ-LQD review and approval of the justification provided by the operator would be required, and if approved, public notice and landowner (BLM) consent would also be required.

Comment: BCA et al. (Page 7)
Reclamation Requirements: "Past uranium mining and exploration in the Gas Hills area, in the Lander Field Office approximately 50 miles north of the Project Area has never been fully reclaimed. There are a great number of open pits, diggings, and water bodies in this area that have become contaminated with radiation. Radiation contamination can remain for tens of thousands of years, both aboveground and in belowground aquifers. For these reasons, we are concerned that the Lost Creek project may, through spills, failures in safety systems, or shoddy reclamation, result in long-term contamination issues in and near the project site."

Response: Much of the uranium mining and milling conducted in the Gas Hills started in the 1950s, before development of regulatory requirements for collection of baseline data and monitoring of operational impacts, and with only rudimentary (if any) requirements for reclamation and reclamation bonds. Many practices considered acceptable at that time are no longer allowed. One example is the historic practice of constructing tailings impoundments with limited, or no, liners or leak detection monitoring. ISR was not a standard practice in the Gas Hills, which is why open mine pits, post-mining pit lakes, and tailings piles are present.

The assertion that parts of these old operations "have become contaminated with radiation" does not recognize the fact that the radioactive materials naturally occurred in the surface and subsurface, which is why the mines and mills located there, but the operation and reclamation practices of that era concentrated some of these materials with limited concern for environmental impacts. Naturally occurring radioactive materials, unaffected by mining and milling operations, are still present in some locations in the Gas Hills at concentrations which would require precautions before resource use, e.g., naturally elevated uranium concentrations in groundwater in ore zones.

To help prevent legacy issues such as those in the Gas Hills, the regulatory requirements for baseline data collection, operational and reclamation practices and associated monitoring for all types of mining and milling, including ISR, have developed substantially since the 1950s. The applicable requirements for a project such as Lost Creek are summarized in Section 1.4.3 of the EIS. The licensing and permitting documents for the Lost Creek Project include requirements for: prevention, detection, and remediation of spills; monitoring of the effectiveness of safety practices; and reclamation of groundwater, facilities, soils and vegetation. There are also provisions for: a reclamation performance bond; annual (or more frequent) reporting and updating of regulatory requirements and the bond amount; inspections; and records maintenance.

Regulatory provisions have also been put into place to address legacy issues, such as those in the Gas Hills. Federal programs such as the Uranium Mill Tailings Radiation Control Act and federal and state Abandoned Mine Lands programs have resulted in reclamation of many sites. Funding limitations have generally required prioritization for reclamation of physical safety concerns and implementation of risk assessment and administrative controls.

Comments: Neil and Jennifer Miller (Page 2)
Reclamation Responsibility: "Who will be left "holding the bag" if the groundwater is contaminated with this in situ leaching process?...the taxpayer and the people of Wyoming who could benefit from use of clean drinking water."

Response: As discussed in Section 2.1.5.2 of the DEIS and FEIS, LCI is required to establish and maintain a reclamation performance bond, in an amount approved by NRC, BLM, and WDEQ-LQD, to cover the costs for a third party to complete

groundwater restoration, radiological decontamination, facility decommissioning, and surface reclamation. Under order of forfeiture, the bond would be payable to the State of Wyoming or the US Secretary of Interior (under which BLM operates). The bond amount would be reviewed and adjusted annually. Additional details about the bond are provided in Section 2.1.1.1.8 of the NRC SEIS (2011a) and Section RP 5.0 of the Reclamation Plan in the WDEQ-LQD Permit to Mine (LCI, 2011b). The calculated bond amount for the first year of the Project is $6,151,685, as detailed in Table RP-4 of the WDEQ-LQD Permit to Mine.

Comment: WDA (Page 3) and BCA et al. (Page 9)
Road Reclamation: WDA recommended that the BLM and LCI "consult with the livestock grazing permittees before making any final decisions affecting their respective allotments", including road reclamation because of the likelihood that "the pre-project two-track roads in the Project Area existed because the grazing permittees used the roads to access pastures or gates, maintain stock tanks or drop sites for salt and minerals to livestock."

BCA et al. expressed concern that the roads would not be reclaimed at the end of the Project, which would adversely affect wildlife.

Response: In order for any of the roads used and/or upgraded by LCI within the Permit Area to be kept, the landowner (BLM) must submit a request to keep the roads that will need to be approved by both the BLM and the WDEQ-LQD. If approved, road maintenance responsibilities will be transferred to the landowner.

Comment: EPA (Page 3)
Schedule: "The Draft EIS states (Section 2.1.5.1) that mine unit restoration and reclamation will be done concurrently with production from adjacent operating units. Since reclamation activities can be lengthy and could be impacted by facility requirements to meet production goals, we believe additional information should be presented in the EIS to ensure reclamation activities are completed. This information could include a more complete description of the reverse osmosis (RO) treatment capacity and associated RO production and reclamation operational design capacity."

Response: The balance between production and reclamation and the overall schedule were of considerable concern during review of the WDEQ-LQD Permit to Mine. To address these concerns, detailed water balance calculations, pore volume information, and schedule commitments were included in the Operations and Reclamation Plans of the WDEQ-LQD Permit to Mine, which is incorporated by reference (Section 1.4.3 (Conformance with Other Federal, State, and County Requirements) of the EIS). Figures OP-5a through OP-5f from the WDEQ-LQD Permit to Mine, which illustrate the water balances during different stages of the Project, are included as Figures 2.1-9 through 2.1-14 of the EIS. The pore volumes and related information on which the water balance calculations were

made are detailed in Sections OP 3.6 (Mine Unit Control) and RP 2.3 (Groundwater Restoration Methods) of the WDEQ-LQD Permit to Mine. These details are summarized in Sections 2.1.6.2 (Operation (Production)) and 2.1.6.3 (Reclamation) of the FEIS. The project schedule, Figure OP-4a from the WDEQ-LQD Permit to Mine (and the duplicate Figure RP-1), is included as Figure 2.1-8 in the EIS. Additional discussion of the schedule from Sections OP 2.1 (Project Schedule) and RP 2.0 (Plans and Schedule for Groundwater Restoration) is summarized in Section 2.1.6 (Schedule) of the EIS.

Alternatives

Comment: BCA et al. (Pages 1-3)
Range of Alternatives: BCA et al. expressed their opinion that a full range of alternatives was not examined in the DEIS.

Response: The DEIS describes several alternatives, some of which were considered in detail and some of which were considered but eliminated, sufficient to be in keeping with the type of action proposed and the scope of that action. These alternatives address the concerns raised during the scoping process (Sections 1.5 and 1.6), in particular that measures in the Proposed Action conform to current policies and procedures. The alternatives in the DEIS include those evaluated during previous licensing and permitting actions related to the Project, including the NEPA process for NRC's Supplemental Environmental Impact Statement (NRC, 2011a) and the permitting and public hearing process for the WDEQ-LQD Permit to Mine (LCI, 2011b, EQC, 2011). Any alternative previously considered was reevaluated to help ensure the evaluation was sufficiently comprehensive. The DEIS also includes alternatives not considered in the previous licensing and permitting actions.

Comment: EPA (Page 3)
Phased Development Alternative: EPA suggested additional information be included in support of the conclusion in Section 2.3.3.4 (Phased Development of the Mine Units) of the EIS that the phased development alternative would "not be economically efficient and would constrain some of the available technical options for more efficient mining and groundwater restoration."

Response: As noted in the Executive Summary, it is unlikely the Project would even be economically viable under a schedule that required mining cease for two or more years between mine units. In the discussion of Schedule-Based versus Restoration-and/or-Reclamation-Based Phases in Section 2.3.3.4, two scenarios are considered, one in which groundwater restoration would need to be completed in a mine unit before development of another mine unit and the other in which revegetation would need to be completed in a mine unit before development of another mine unit. Under the first scenario, using the criteria in Figure 2.1-8, there would be a two-year hiatus between Mine Units 1 and 2 because that is the elapsed time for restoration of Mine Unit 1. There would be a four-year hiatus between Mine Units 2 and 3; the hiatus would be longer because Mine Unit 2 is

anticipated to be larger than Mine Unit 1. This would extend the schedule, and associated disturbance, from 11 years to 17 years. The income-generating portion of the Project, i.e., Production, would still take place during six years, less than one-half the Project life. Currently, Production would take place during about two-thirds of the Project life. (Under the second scenario, the hiatus between mine units would be even longer to allow for revegetation after groundwater restoration.) Even if some or all of the Plant, offices, disposal wells, and associated equipment could be 'mothballed' and restarted without undue maintenance or replacement expenses, it is unlikely that a skilled employee base could be retained throughout the Project life as the number of employees needed would vary radically. Similarly, it would be difficult to LCI to effectively negotiate supply or sales contracts if the need for supplies or the amount of yellowcake produced varied substantially over the life of the Project. The income to municipalities, counties, and the State would also vary, making it more difficult for them to effectively plan for services.

From a technical standpoint, a hiatus between mine units for completion of groundwater restoration or revegetation raises several concerns. First, the option for groundwater transfer (or exchange) between a mine unit in restoration and another mine unit in production is no longer available. This option, which is discussed in more detail in Section RP 2.3.1 of the WDEQ-LQD Permit to Mine, allows for some reduction in consumptive use of groundwater, a reduction which would no longer be available. Second, revegetation would be 'on hold' in some areas because of the overlap of facilities. As currently envisioned (Figure OP-2A of the WDEQ-LQD Permit to Mine), Mine Unit 3 would share some of the same road and pipeline access as Mine Unit 1; therefore, some of that area would remain disturbed for twice as long as currently planned. This would also require that the associated topsoil stockpiles, erosion protection measures, and weed control would need to be in place for longer than currently planned. Third, the reclamation 'bond clock' for revegetation is a minimum of five years; however, circumstances beyond LCI's control, such as drought or fire, could extend this time frame, making it even more difficult to plan for the time lapse between mine units.

In keeping with the CEQ guidance to briefly describe the reasoning for considering, but eliminating, an alternative, some of the above discussion has been added to Section 2.3.3.4.

Environmental Protection Measures, Monitoring, and Impacts

General

Comment: BCA et al. (Pages 4-5)

NEPA requires agencies to take a 'hard look' at impacts to the human environment. BCA et al. is concerned that the hard look and baseline information requirements have not been met for this EIS, particularly in regard to impacts to wildlife, resulting in unnecessary impacts to wildlife in violation of FLPMA.

Response: The BLM NEPA process for the Lost Creek Project has gone through considerable information developed over the course of the licensing and permitting for the Project. Prior evaluations of the impacts, mitigation measures, and monitoring requirements developed by other agencies were reviewed in light of BLM's concerns and knowledge of the on-the-ground conditions. New opportunities for public input and agency discussion, that built on knowledge gained during the other agency actions, were provided.

Comments: BCA et al. (Pages 5-8)
"In this case, BLM does not provide an assessment of the adequacy of mitigation measures, particularly mitigation measures to protect sage grouse. As a result it proposes a package of permitted activities and mitigation measures that will not sustain healthy sage grouse populations in this part of the Core Area."

Response: The mitigation measures presented in Section 4.0 for all the resources, including wildlife (e.g., Sections 4.5.1 and 4.8.1 for Soils and Vegetation, respectively) are based on a variety of information and requirements, including mature regulatory programs and interdisciplinary and interagency efforts to update and improve those programs. Measures from other agencies were also reviewed in light of BLM's concerns and knowledge of the on-the-ground conditions. Monitoring measures are also discussed for each resource to ensure the effectiveness of the mitigation measures is as anticipated. The information is sufficient to determine if impacts can be avoided or reduced and to compare the relative merits of the measures for different resources in evaluation of an alternative, such as a road location.

Land Use

Comment: WDA (Page 2)
DEIS Section 3.1.1.1 Livestock Grazing: "The section mentions "The primary land use in the Permit Area is rangeland for cattle; no farms, residences, or population centers are present." The WDA requests the BLM provide a comprehensive analysis of all impacts to both cattle and sheep. The Permit Area includes Stewart Creek, Cyclone Rim and Green Mountain Allotments. We are aware of sheep grazing in Cyclone Rim, but the BLM neglects to include any impacts or mitigation to grazing permittees with sheep in the DEIS. We recommend revising the map of the Permit and Project Area (3.1-3) overlaid with grazing allotments, to include the type of livestock and season of use. Additionally, due to many permittees trailing livestock to their allotments, we recommend including information and maps of where permittees historically trail their livestock.

DEIS Section 4.2.4.1 Livestock Grazing: "As mentioned above, the BLM neglects to include a comprehensive analysis of the impacts to all livestock, including sheep and cattle in the DEIS. If sheep are not impacted in the Permitted or Project Area, the WDA requests full disclosure throughout the DEIS, including 4.2.4.1."

Response: Sheep are authorized in the Cyclone Rim grazing allotment; however, currently no sheep are authorized to use the portion of the Cyclone Rim grazing allotment in which the Lost Creek Permit Area is located. Sheep use is only currently permitted in the area west of County Road 23 (Wamsutter-Crooks Gap Road). In the Lost Creek Permit Area, fall through spring cattle grazing is currently permitted in the Cyclone Rim grazing allotment, and summer and fall cattle grazing is permitted in the Stewart Creek grazing allotment. The Green Mountain grazing allotment is permitted primarily for cattle use; however, approximately 24 percent of the authorized animal unit months (AUMs) in the allotment are permitted for sheep. Sheep and cattle use is not separated on the allotment geographically, but rather by season of use. Cattle use within the Lost Creek Permit Area occurs between May and October, dependent on the rotation schedule. Sheep use in the Lost Creek Permit Area is permitted in the fall and winter, beginning in late October through March. Therefore, Figure 3.1-2 of the DEIS is sufficient. There is no trailing of livestock within the Lost Creek Permit Area.

The text in Section 3.1.1.1 of the DEIS was revised to, "The primary land use in the Permit Area is rangeland for cattle and sheep." . . . "The total AUMs for the Green Mountain allotment is 66,657 AUMs (57,638 AUMs for public land). About 76 percent of the Green Mountain allotment's AUMs are permitted for cattle and about 24 percent are permitted for sheep. Sheep and cattle use is not separated on the allotment geographically, but rather by season of use. Cattle use within the Lost Creek Permit Area occurs between May and October, dependent on the rotation schedule. Sheep use in the Lost Creek Permit Area is permitted in the fall and winter, beginning in late October through March. Within the Permit Area, the Green Mountain allotment provides as much as 125 AUMs of grazing."

The text in Section 4.2.4.1 of the DEIS was revised to, "If year-round grazing were allowed, the Stewart Creek and Cyclone Rim allotments would provide year-round forage for the equivalent of 25 cattle in the Permit Area; the Green Mountain allotment would provide year-round forage for the equivalent of 8 cattle and 13 sheep in the Permit Area." . . . "If all of the proposed disturbance areas of the Project were fenced at once, 345 acres (eight percent) of the 4,254-acre Permit Area would be removed from livestock grazing. Therefore, the AUMs of the Stewart Creek and Cyclone Rim allotments within the Permit Area would decrease by 25 cattle AUMs, from 285 cattle AUMs to 260 cattle AUMs (reducing the number of livestock that may be supported by year-round forage from 25 to 21 cattle). The AUMs of the Green Mountain allotment would decrease by 9 cattle AUMs and 3 sheep AUMs, from 95 cattle AUMs and 30

sheep AUMs to 86 cattle AUMs and 27 sheep AUMs (reducing the number of livestock that may be supported by year-round forage from 8 cattle and 13 sheep to 7 cattle and 11 sheep). However, the number of directly impacted AUMs is a conservative estimate because the affected acreage at any time should be less than 345 acres due to the development and reclamation of the mine units in succession. The BLM calculated cattle production would produce $65.07 per AUM and sheep production would produce $41.16 per AUM of total economic impact, which includes both direct and secondary returns (BLM, 2004a). Using this figure, and depending on the allotment terms, livestock production on the Stewart Creek and Cyclone Rim grazing allotments within the Permit Area that may be impacted by the Project has a potential value of about $1,630 per year for cattle (25 AUMs x $65.07/AUM). Livestock production on the Green Mountain grazing allotment within the Permit Area that may be impacted by the Project has a potential value of about $590 per year for cattle (9 AUMs x $65.07/AUM) and about $125 per year for sheep (3 AUMs x $41.16/AUM). This assumes all the cattle would be sold; however, some of the cows are generally kept for breeding; the same applies for sheep."

Comment: WDA (Page 2)
DEIS Section 4.2.4.1 Livestock Grazing: "The third paragraph, under "Construction" states "fencing would also create an obstacle to livestock movement." Further in the paragraph it states, "Fencing of all the pattern areas at once would create an oblong obstacle with the greatest length of about 2.5 miles." While the Project Area is relatively small at 345 acres, the fencing pattern proposed could cause an indirect impact for the grazing permittees. We believe the BLM and Operator should meet with the grazing permittees to create fencing alternatives to alleviate trailing livestock 2.5 miles around the Project Area."

Response: At this time, there is no trailing of livestock within the Lost Creek Permit Area. If trailing of livestock were planned in the Lost Creek Permit Area and affected by the fencing, the BLM could facilitate a meeting with the grazing permittees and Lost Creek ISR, LLC to discuss options to avoid or reduce the fencing obstacle.

Comment: WDA (Page 2)
"An additional concern is vandalism. Vandalism to range improvements such as cut fences, gates left open, damage to stock tanks, solar panels or windmills are costly economic impacts to grazing permittees. Vandalism can increase with newly developed roads by providing more access to the public in addition to ISR Project employees. BLM and the Operator must convey how they will address vandalism in the DEIS."

Response: Per the Federal Land Policy and Management Act of 1976, the BLM manages public land on the basis of multiple use. Within and near the Lost Creek Permit Area, the BLM manages multiple public land uses (livestock grazing, wildlife habitat, dispersed recreation, minerals and energy development, and

infrastructure). As such, the BLM recognizes each public land use, including livestock grazing and minerals and energy development.

Improvements to the existing East and West Access Roads and the development of secondary access roads would improve the accessibility of the Permit Area to Project-related workers and the public. This improved accessibility may either increase the potential of vandalism due to an increase in human presence or decrease the potential of vandalism due to an increase in human presence that may deter vandalism. Section OP 2.6 of the WDEQ-LQD Permit to Mine (LCI, 2011b) notes that on-site access will be restricted through roads (i.e., the East and West Access Roads and secondary access roads) with appropriate signage, fences, gates, and security.

Surface Water

Comments: LCI (Page 9; #VII) and Sweetwater County Conservation District (SWCCD) (Page 2; #1a)
The comments expressed concern about the definition of 'ephemeral channel' and whether the limits on surface disturbing activities were too broad (LCI) or not broad enough (SWCCD). LCI also notes discrepancies between DEIS language and the WDEQ-LQD Permit to Mine and between language in different parts of the DEIS.

Response: SWCCD requested that the ephemeral channels be regulated as riparian areas. However, per the provisions of 43 CFR 3809.5, ephemeral channels are excluded from riparian areas.

Different minimum distances for proximity of disturbances to ephemeral channels were requested by LCI and SWCCD. LCI expressed concern that the current definition and proximity restrictions were vague and could interfere with mineral recovery. SWCCD expressed concern that the proximity restrictions would not provide for effective protection of the drainages. The historic definition of an ephemeral stream is one "that flows only in direct response to precipitation, and whose channel is at all times above the water table." (BLM, 1998) In the RMP Glossary, an ephemeral channel is "[a] defined channel formed in response to ephemeral surface flow conditions. Defined channels typically can be identified by an abrupt bank along a water flow path with evidence of scouring, sorting, and/or vegetation removal during flood events. These channels generally form in concave erosional features such as gullies, ravines, and swells." (BLM, 2008c)

Neither definition provides specificity as to which channels in the Lost Creek Permit Area would be considered ephemeral channels. Figure 3.5-1 provides a more definitive map of the drainages to which the proximity restrictions would apply and could be easily used by contractors and inspectors to evaluate disturbances near drainages. In addition, LCI would also use best professional judgment to determine if the channel met the BLM guideline criteria of an ephemeral channel. To limit interference with mineral recovery, surface

disturbing activities would be avoided within 20 feet of the inner gorge of the identified ephemeral channels. Exceptions to this would be granted by the BLM based on an environmental analysis and site-specific engineering and mitigation plan, as required per 43 CFR 3809.411(d)(2). Only those actions within areas that cannot be avoided and that provide protection for the resource identified would be approved. However, with respect to effective protection of drainages, the provisions of the WDEQ-LQD Stormwater Pollution Prevention Plan (SWPPP) are designed to protect not only drainages, but all parts of the Permit Area. The goal of the SWPPP is to "mitigate contamination of storm water effluent; especially from sediment loading resulting from soil disturbance." In addition, BLM and WDEQ-LQD reclamation requirements include reestablishment of the hydrologic function of drainages. Table 2.2-2 and the text in Section 4.6.1 have been revised to reflect the above considerations.

LCI questioned the difference between the WDEQ-LQD Permit to Mine and the DEIS with respect to removal of cuttings from mud pits near ephemeral channels. LCI noted that the material is not considered toxic or acid-forming; however, the concern is that the material in the backfilled pit could be more easily eroded if subjected to surface flows because the pit area would no longer be consolidated material. Over time, this concern is abated because of consolidation of the material in the pit and establishment of surface reclamation. This would be helped because LCI would only drill near ephemeral channels during the dry season. However, the use of Alternate Sediment Control Measures, as defined in the WDEQ-LQD Permit to Mine and SWPPP, would also alleviate concerns until the drill site reclamation becomes better established. Because this topic is addressed in the WDEQ-LQD Permit to Mine and the SWPPP, the bullet was removed from the text in Section 4.6.1.1.

Comment: Marybeth Devlin (Pages 2-3)
Waste Management and Accidental Releases: The comment expresses concerns associated with the quantity of radioactive and petroleum wastes generated on site and the potential for leaks and spills to significantly impact the environment.

Response: Table 2.1-1 lists the estimated monthly quantities of both liquid and solid radioactive wastes that will be generated. The liquid waste will be disposed of in the permitted deep disposal UIC wells. Radioactive solid waste that cannot be decontaminated will be disposed of at a NRC-licensed facility. Waste management, for radiological and non-radiological wastes, is addressed in Section 4.18 of the FEIS.

The Lost Creek facilities will be designed to withstand worst case credible upset conditions including but not limited to wind storms, earthquakes, and sheet flooding. Measures to reduce the potential for accidental releases include appropriate engineering design, construction, maintenance; development and implementation of the Storm Water Pollution Prevention Plan (SWPPP), inspections, notification procedures, response actions, on-going employee training

and general health and safety procedures. Specifically, Standard Operating Procedures (SOPs) addressing spill prevention and mitigation will be developed and implemented at the site. The SOPs will address pipeline installation and testing, automated system monitoring and alarming, site inspections, spill mitigation; and employee training. If an upset condition results in the release of mining solutions or chemicals to the environment, the affected system(s) will be shut down and thoroughly inspected/tested by an individual familiar with that system before being restarted. Management will verbally notify BLM and WDEQ-LQD immediately if an upset condition results in a release to the environment and cannot be made safe immediately. In such cases, LC ISR, LLC will also submit a written report to BLM and WDEQ-LQD within one week detailing the nature, location and cause of the incident, what if any releases to the environment resulted, what efforts were made to correct the problem, and what will be done in the future to prevent or mitigate similar occurrences. Measures for preventing and remediating accidental releases are discussed in the WDEQ-LQD Permit to Mine (e.g., Sections OP 2.9, OP 3.5, and OP 4.4 and Attachment OP-2) (LCI, 2011b) and in the NRC Technical Report (e.g., Sections 4.2.5.5, 5.7.1.4, and 5.7.6.6) (LCI, 2010).

Comment: EPA (Page 2)
Accidental Releases – "The Draft EIS states (Sections 4.6.1.2 and 4.7.1.1) that procedures, training and reporting for spills or leak prevention are described in the Wyoming Department of Environmental Quality - Land Quality Division's Permit to Mine. For full disclosure of these mitigation techniques, we recommend presenting a summary of these various requirements in the Final EIS."

Response: Additional text included in Section 2.1.8 to further describe spills and leaks mitigation. Although a significant portion of the information in the WDEQ-LQD Permit to Mine was already included in the DEIS. The Spill Prevention and Response Plan, to be developed, will outline specific procedures to be used.

Groundwater

Comment: SWCCD (Page 2)
The DEIS "does not adequately address the potential impact on nonpotable water from drilling and pumping. . . . The permit area should be subject to provisions that ensure that drilling and pumping does not adversely affect existing water supplies. Careful planning and testing of the hydro-geology can avoid these adverse impacts."

Response: Section 3.6 of the DEIS and FEIS describes the regional and site groundwater hydrology, water quality, and water uses, and the baseline aquifer testing and monitoring used to establish the aquifer and water quality characteristics. Section 4.7.1 describes the procedures and practices that will be used during mine operation and reclamation to monitor, protect, and reclaim groundwater conditions. Sections 4.7.4 through 4.7.7 describe the changes that

will occur to groundwater levels and water quality during operation and reclamation.

Comment: WDA (Page 3)
"The WDA appreciates BLM and the Operator's consideration of water levels on the four BLM stock wells within the one mile radius of the Permit Area boundary. It is important to have baseline data to indicate any impacts from the ISR Project. We strongly support gathering baseline data on water flow, but the DEIS is missing requiring the Operator to also gather the water quality data on these four wells. Water quality is an important component of in situ uranium mining. We request the BLM and Operator treat water quality of the four BLM stock wells as equally as important.

The WDA urges BLM and the Operator meet with grazing permittees to discuss the current conditions of the stock wells, including water flow and chemistry. This meeting would create an opportunity for the Operator to discuss the frequency and schedule of future stock well testing. Once the project is developed, the Operator will continue to test water flow and quality and provide the data analysis results to the grazing permittees and the BLM. The Operator should contact the BLM and grazing permittees immediately if results indicate a reduction of flow or increase in water quality toxic levels. The Wyoming Department of Environmental Quality, Water Quality Division should guide the BLM and Operator utilizing the literature review "Water Quality for Wyoming Livestock & Wildlife" (M. F. Raisbeck DVM)."

Response: As discussed in Section 4.7.2.2 of the DEIS and FEIS, the four BLM stock wells near the Permit Area (Battle Spring Well No. 4451 and Battle Spring Well No. 4777, Boundary Well No. 4775, and the Eagle Nest Draw Well) shown on Figure 3.6-15 will be sampled to establish background conditions if the owner consents and the pumping systems are in working order. The four wells would also be sampled on a quarterly basis if the owner consents and the pumping systems are in working order. At a minimum, the samples would be analyzed for U-nat and Ra-226. Water level data would be collected before sampling if the wellhead design allows access. As mentioned in Section 3.6.3.1, Well No. 4451 was sampled in 2009 and 2010. The sample results are listed in Table 3.6-7. The baseline concentrations indicate elevated concentrations of uranium and radium, which is not surprising given the occurrence of uranium mineralization throughout this portion of the Great Divide Basin. The text in Section 4.7.2.2 was changed to indicate the four off-site wells will be sampled to establish background conditions and will also be sampled quarterly.

The baseline groundwater data was established under NRC and WDEQ standards, which BLM does not have the authority to override. The BLM has provided, and will continue to provide, opportunities for affected parties to obtain information about the Project through public meetings for which notice has been given. The NRC and WDEQ licensing and permitting actions have also included public

notice and comment (Section 1.5). LCI has also committed to working with grazing permittees through county, state, and federal public meetings for which notice has been given, and by providing data not otherwise available, including sampling an off-site supply well and obtaining cattle tissue samples from at least one local permittee for baseline documentation.

The BLM has routinely spoken with the grazing permittees about the Lost Creek Uranium In-Situ Recovery Project during meetings in the field or during discussions concerning permit renewals. LCI has also indicated that, as opportunity allows, it has visited with grazing permittees potentially affected by the Proposed Action at the Lost Creek Permit Area.

To facilitate transparent communication, the BLM added the grazing permittees that may be affected by the Proposed Action to the Lost Creek Uranium In-Situ Recovery Project's mailing list. These grazing permittees were provided an electronic copy of the FEIS. The BLM will be accepting public comment on the FEIS within 30 days after the Environmental Protection Agency publishes the Notice of Availability in the Federal Register. The grazing permittees will also be notified of the Record of Decision.

Comment: EPA (Page 2)
"The Draft EIS presents (Section 2.1.5.1) a discussion on the mine unit reclamation, including well plugging and capping. The discussion provides a very general description of permanently plugging and capping the well and well casings cut off below plow depth. We recommend that this discussion be expanded to include specific monitoring that will be conducted to determine the existence of unplugged wells, and the steps to be taken to ensure that they are plugged properly to prevent impacts to aquifers."

Response: Unplugged or improperly abandoned historic boreholes could provide pathways for vertical movement of fluids potentially impacting groundwater aquifers. In addition to LCI's work to date to locate and abandon all historic boreholes in the Permit Area, LCI is required to attempt to locate and abandon all historic boreholes within the perimeter of the monitoring well ring as part of the NRC license and WDEQ-LQD Permit to Mine (Section 4.4.4.1 of the DEIS and FEIS). Following completion of the groundwater restoration for a given mine unit, all wells would be plugged and abandoned in accordance with WDEQ-LQD requirements (Section 4.7.7.2). Beyond the stability monitoring period discussed in Section 4.7.1.1, no additional monitoring is required.

Comment: Neil and Jennifer Miller (Page 2)
"We also have grave doubts about how efficient the monitoring wells will be to document "excursions" and how this will prevent the contamination of our state's groundwater."

Response: The monitoring design for excursion detection, similar to the design for evaluation of groundwater movement for any water supply or quality project, is based on the aquifer characteristics and on the water quality. The aquifer characteristics and water quality have been evaluated for the Permit Area as a whole and for each mine unit before it is brought on-line. The excursion detection parameters are specifically selected from the most mobile, readily detectable constituents in the injection fluid (Section 5.2 of the WDEQ-LQD Mine Unit 1, Permit to Mine Application). In addition, there are several operational parameters that are measured to provide information on the mine unit balance as a preliminary indication to help prevent excursions (Section 4.7.2.1 of the DEIS and FEIS; Attachment OP-2 of the WDEQ-LQD Permit to Mine). If an excursion is detected, then several regulatory requirements are in place to control the excursion, up to and including, cessation of injection.

Comments: BCA et al. (Page16)
"While there appear to be projected impacts on groundwater quality at all stages during the operation up to and including reclamation, there does not appear to be a section dedicated to assessing groundwater impacts post-reclamation, after project activities are completed. See DEIS at Section 4.7, and see page 4.7-34. In many respects, this is the most important groundwater issue that the EIS should be addressing, given that uranium has a half-life of thousands of years, and remaining impacts to groundwater after completion of reclamation activities will be correspondingly long-term."

Response: During aquifer restoration, the water quality parameters in the groundwater would be returned to pre-operational class of use as defined WDEQ-WQD and to the requirements of 10 CFR Part 40, Appendix A, Criterion 5B(5) Section RP 2.2 of the WDEQ-LQD Permit and Section 6.1.3.1 of the NRC SER. Groundwater restoration techniques will include sweep, reverse osmosis (RO), and recirculation. Restoration may also include groundwater transfer, reductant addition, and biorestoration to mitigate groundwater quality impacts from ISR. To establish that groundwater has returned to preoperational conditions, a stabilization monitoring program would begin in which the pattern monitor wells used to evaluate restoration success would be sampled quarterly for a period of 12 months. As part of the reclamation plan and associated monitoring, required per the BLM 3809 regulations, at least two additional stability monitoring samples (Section 4.7.1.1) would be collected, once every three months over a six-month period, after the initial stability period. The monitoring information will also support combined agency review of current stability monitoring requirements. The text in Section 4.7.1.1 of the FEIS has been changed to reflect the additional stability monitoring.

Under the federal UIC program, the ISR production aquifer must receive an exemption from EPA that the aquifer, or part of the aquifer in not now and would not be a source of drinking water. The EPA criteria for an aquifer exemption are found in 40 CFR 146.4.. As discussed in Sections 3.6.4.2 and 4.7.4.2 of the DEIS

and FEIS, elevated concentrations of uranium and radium occur naturally in the groundwater in mineralized zones, such as those proposed for mining. The mining process mimics the geochemical (oxidation/reduction) and hydrologic processes that allowed transport of the uranium to the ore zone, and the restoration process mimics the depositional processes that created the uranium deposits. The implication that the half-life of uranium is somehow relevant only because mining occurs fails to recognize the fact that the water quality in (and sometimes near) the ore zones contains elevated uranium concentrations before mining. Because much of the uranium is removed during mining, a primary concern during restoration is to ensure that, during restoration, the condition in the ore zone returns to a condition similar to that before mining.

Comment: LCI (Pages 13-14, #29)
LCI commented that "it is inappropriate for the BLM to amend a sampling plan in a DEIS for the purpose of collecting information for another regulatory agency (EPA) on the basis that such additional information may be used to support a future rule making…."

Response: BLM included this provision in Table 2.2-2 and in Section 4.7 for two reasons. First, BLM believes the provision is necessary to ensure the Reclamation Plan and associated Monitoring Plan are effective (43 CFR 3809.401(b)(3)&(4)). Second, the EPA concern is whether "the existing standards, last revised by EPA in 1995, should be updated", i.e., the information would be used to determine if future rule making is necessary, not necessarily to support the rule making. The text in Table 2.2-2, Sections 4.7.1 and 4.7.1.1 has been modified to reflect the BLM-specific concern, as well as the combined agency review of reclamation monitoring data.

Comment: LCI (Page 14; #31)
"The DEIS requires sampling of four regional BLM wells as shown in Figure 3.6-15. Of these four wells, only two wells, BLM Battle Spring Well 4451 and BLM Battle Spring Well No 4777, are near enough to the proposed operation and in a generally down-gradient direction that their water quality could be impacted. Two of the four wells, BLM Boundary Well No. 4774 and BLM East Eagle Nest Draw Well are up gradient of the wellfields and greater than a mile away. Given that the groundwater moves only a few feet per year in this area it would take over a hundred years for any undetected contamination to reach either well (and then only if the water can flow against the gradient). Therefore, LCI requests that the EIS require sampling of only two of the wells (BLM Battle Spring Well 4451 and BLM Battle Spring Well No 4777)."

Response: As stated in the WDEQ-LQD Permit to Mine and NRC License, the off-site wells near the permit area (Battle Spring Well No. 4451 and Battle Spring Well No. 4777, Boundary Well No. 4775, and the Eagle Nest Draw Well) would be sampled quarterly with well owner consent and if operational. The BLM does

not consider it appropriate at this time to change the sampling program outlined in the WDEQ-LQD Permit to Mine and NRC License.

Comment: LCI (Page 14; #30, 32)
LCI requested changes pertaining to groundwater in the DEIS to more accurately describe the Project.

Response: The text has been revised.

Comment: EPA (Page 2)
"The Draft EIS does not present the locations of the UIC wells. We recommend that the Final EIS discuss the locations of the UIC wells. Also, the Draft EIS states that wells within and immediately outside the permit areas are not used as sources for human consumption, yet the Draft EIS states (Section 3.6.3.2) that water from the uranium target - FG horizon may be used for potable water. The Final EIS should provide additional information to identify USDW aquifers near the project area that may be used for potable water for the Lost Creek Project."

Response: The Project includes both UIC Class I wells and UIC Class III wells. The DEIS (and FEIS) show the locations of the UIC deep disposal wells on Figure 1.2-2. The text in Sections 1.2 and 2.1.2.4 have been revised to state that the UIC deep disposal well locations are shown on Figure 1.2-2. The locations of the UIC Class III wells, which are within the pattern areas, are only known as each mine unit is developed. These locations are shown in the documents submitted for the individual mine units (Section 2.1.3.2).

Because of the uranium mineralization throughout the northeast portion of the Great Divide Basin (Section 3.3.1), it is unlikely that any of the water-bearing horizons in the Battle Springs Formation could be used as a source of potable water, unless the water were treated, because of the elevated concentrations of uranium and other radionuclides. For example, the water supply for the town of Bairoil has required treatment and development of alternate sources due to the presence of radionuclides. Uranium mineralization is present in the four shallowest aquifers in and near the Permit Area- the DE, FG, HJ, and KM aquifers (Table 3.6-8). If LCI decides to use a well completed in the FG Horizon for potable water, treatment will be necessary. Alternately, LCI may decide to bring drinking water into the Permit Area.

Vegetation

Comments: SWCCD (Page 3) and Devlin (Page 6)
These comments express concerns that, as a result of this project, invasive plants and weeds will inhabit any disturbed lands.

Response: LCI is required to control the occurrence and spread of weeds brought in as a result of the Project. There were very few weeds identified in the pre-disturbance surveys (Section 3.7.2.4); therefore, the main concentration of effort

by the company will be to monitor and control weeds throughout the life of the Project. As long as the company complies with this requirement and the revegetation requirements, weed expansion would not occur and there would be no cumulative impact of increasing weed presence in the area. The company's compliance with weed control and revegetation requirements will be checked by periodic inspections by BLM and WDEQ-LQD and evaluation of revegetation success. The reclamation plan does: require site preparation prior to reseeding (Section 4.5.1.2); allow for planting an annual crop to facilitate plant reestablishment (Section 4.8.1); includes monitoring of revegetation success for at least five years after final reclamation (Section 4.8.2.2); and if reclamation progress is deemed insufficient, requires that the reason for the limited progress be identified and addressed (Section 4.8.2.2).

Wildlife

Greater Sage-grouse

Comments: Neil and Jennifer Miller (Page 2); BCA et al. (Pages 5, 23-24, 25-26, 29-30, 35); and WOC (Pages 1-2, 6)
Several comments addressed the policies for Greater sage-grouse management.

Response: Revising the contents of the Sage Grouse Executive Order and associated policies are outside the scope of this FEIS. BLM appreciates receipt of the comments as they provide insight on the basis of some of the other, related EIS-specific comments. These comments have been forwarded to the appropriate forum.

Comments: BCA et al. (Pages 25-28, 29, 30-31, 34-35)
BCA et al. often refers to impacts from oil and gas drilling projects as a comparison for potential impacts from the LCI Uranium *In-Situ* Recovery (ISR) Project.

Response: To address several of the comments on the overall project, the type of mineral development must be kept in mind, as the applicable requirements vary to address concerns specific to a given type of development. In particular, the Lost Creek Project would mine uranium, a locatable, solid mineral. Several of the comments include descriptions and provisions related to leasable fluid minerals, specifically oil and gas. The BLM regulations for locatable and leasable minerals are in separate parts of Title 43 of the Code of Federal Regulations. Regulations applicable to locatable minerals are in Part 3809 *et seq.*, and regulations applicable to leasable minerals are in Part 3101 *et seq.*

The technologies and equipment necessary to extract uranium differ from those necessary to extract oil and gas or coal bed methane. Beginning with the exploration stages, the geophysical techniques used for preliminary determination of the presence and extent of oil and gas fluids are not as effective for solid minerals such as coal and uranium; so drilling is necessary. Unlike oil and gas or

coal bed methane, uranium could be mined by conventional means like those for coal, i.e. physically removing the topsoil, overburden, and ore. However, uranium can also be mined using less intrusive ISR, which relies on wells for injection of fluids to mobilize the uranium and for pumping of the production fluid from the ore zone. While oil, gas, coal bed methane, and uranium are related to energy and may be similarly extracted through the use of wells, these leasable and locatable minerals have different mineral deposition, areal extent of deposits, drilling depths, equipment sizes, methods and duration of production, length of pipelines, needs for compressors stations, reclamation requirements, and other technical differences.

With respect to most mineral deposition in Wyoming, oil and gas is the result of anaerobic decay of organic matter disseminated in shallow and/or deep sandstone or limestone deposits throughout large areas of geologic basins. Coal bed methane is the result of microbial action or thermal process in the extensive coal deposits, often found in the same geologic basins as oil and gas. In contrast, uranium ore is deposited at relatively shallow depths along a portion of the margins of a geologic basin, if a uranium source is located somewhere along or outside the margin of the basin. As an example of the differences in scale, the Jonah Field (a natural gas field in the Green River Basin of Wyoming) covers more than 120,000 acres, which is on the order of 30 times the size of the 4,254-acre Lost Creek Permit Area. Well depths in the Jonah Field usually range from 9,000 to 11,000 feet below surface, which is on the order of 20 times deeper than the bottom of the HJ Horizon, about 500 feet below surface, which is the horizon targeted in the Permit Area. All of the drilling equipment (e.g., rigs, pipe, mud pits) for wells in the Jonah Filed is substantially larger than that for the Lost Creek Project. While coal bed methane may be at similar depths as uranium deposits (although generally deeper in southwest Wyoming), the areas of the coal beds are substantially greater than the area of roll-front uranium deposits.

Oil, gas, and coal bed methane production depend on natural and induced reservoir pressures and on reservoir permeabilities to move those fluids out of the reservoir. In general, higher production rates are considered preferable. As production from a reservoir declines, closer well spacings may be needed for more efficient production. Production may be enhanced by artificial fracturing to increase the size of the 'pathways' the fluids have to move out of the reservoirs. In contrast, uranium production depends on the permeability to ensure the lixiviant can penetrate the reservoir sufficiently to dissolve the solid uranium. However, higher production rates, pressures or fracturing would result in the lixiviant 'bypassing' the uranium. The engineering designs for movement of fluids in oil, gas, and coal bed methane production share similar fundamentals but are substantially different in practical application than those for dissolution of a mineral such as uranium.

The differences in the mineral deposition, areas of the deposits, drilling depths, equipment sizes, methods and duration of production, length of pipelines, the

need for compressors stations, reclamation requirements, and many other technical aspects are reflected in the differences in engineering designs for oil, gas, coal bed methane, and ISR production. The differences are also taken into account in the regulatory programs, including leasable versus locatable minerals and in the stipulations for Greater sage-grouse.

Comments: BCA et al. (Page 35) and WOC (Page 12)
These comments expressed concern for how the Greater sage-grouse will be impacted by the presence of fences throughout the Permit Area.

Results: As was stated in Section 4.9.6.3 of the DEIS and now also in Section 4.2.1 of the FEIS, in order to mitigate Greater sage-grouse collisions with fences, fence markers would be installed on all new fence lines to increase the visibility of the lines. New fences would also be monitored for evidence of Greater sage-grouse strikes. This statement has now also been added to Sections 4.9.1.2 and 4.9.1.10 for greater clarity. Tom Christiansen stated in his 2009 fence marking interim report that markers reduce strikes by 70% (Christiansen, 2009).

Christiansen, Tom. 2009. Fence Marking to reduce Greater Sage-grouse (Centrocercus urophasianus) Collisions and Mortality near Farson, Wyoming – Summary of Interim Results. WGFD. October 26, 2009. Available at: http://pbadupws.nrc.gov/docs/ML1108/ML110830116.pdf

Comment: BCA et al. (Page 33)
"The project will contain a number of components that generate noise pollution, including equipment on site and trucks using the access roads. See DEIS at 4.12-4. The impacts of noise-generating equipment have not been analyzed either at the level of lek sites or nesting habitat for sage grouse. This analysis needs to be completed."

Response: The DEIS includes analysis of noise impacts in the Assessment of Impacts on Greater Sage-Grouse using SGIT Stipulations in Section 4.9.5.3.

Comment: BCA et al. (Pages 8-11, 23-24, 28-29, & 34)
BCA et al. is concerned that the proposed Access Roads will negatively impact Greater sage-grouse in the area. Specifically, they discussed concerns regarding: roads being within the 0.6-mile buffer; evaluation of alternative road locations; and upgrading of roads. BCA et al. recommended using a different set of access roads, the BCA Southern Alternate Access Road and the BCA SE Alternate Access Road; they propose that both would have fewer impacts, as they are outside the 1.9-mile buffer surrounding leks.

Response: Alternative road options were discussed during the EQC hearing, conducted as part of the WDEQ-LQD permitting process (Section 1.5), including roads inside and outside the 0.6-mile buffer. As discussed in the DEQ's Closing Argument during the hearing, a representative from WGFD discussed the process

that WGFD followed to determine which, if any, road options for the LCI Project would comply with Executive Order (EO) 2011-5. During the WGFD's testimony, it was noted that the EO discourages both the development within 0.6 miles of leks and the creation of new disturbance, further fragmenting sage-grouse habitat. It was also noted that past projects have had success with topography providing a barrier between the roads, thus minimizing the effects seen at the lek. After thorough analysis, WGFD determined that the East and West Access Roads would not only be the least impactful option, but would also comply with the EO. In the Closing Argument, the WDEQ-LQD deferred to the WGFD analysis and agreed with the conclusion reached.

Similar to the concerns noted for other alternate road locations analyzed in Section 2.3.3.8, the alternate road locations suggested by BCA, violates the EO by disturbing and fragmenting a significant amount of habitat, despite being outside the 1.9-mile buffer. Also, the BCA SE Alternate Access Road, which follows a somewhat different route than the SE Alternate Access Road shown on Figure 2.2-3, still crosses the 1-mile buffer around two raptor nests.

BCA et al. also characterizes some of the existing roads as "jeep trails" even though the roads were constructed with a crown and ditch. Although vegetation has regrown over parts of these roads, they were not reclaimed to remove the drainage modifications (the crown and ditch) or to adequately reestablish the vegetation. Except during inclement weather, they are passable.

Comment: WOC (Pages 2-3, 4-5, & 6)
The WOC would like the BLM to consider an alternative to the current access road plan, where only one access road is constructed rather than two.

Response: Several agencies have reviewed the access roads, including the WDEQ-LQD, WGFD, and NRC. Alternate routes where examined, and although these routes were designed to be outside the 0.6-mile buffer surrounding leks, there was a significant amount of new disturbance associated with these alternatives. The WGFD determined that upgrading the existing two-track roads would have less impact to the Greater sage-grouse than creating new roads outside the 0.6-mile lek buffer (WDEQ, 2011a). For more information regarding the placement of the access roads, see Section 2.3.3.8 in the DEIS.

The two road requirement was discussed at a Cooperating Agency Meeting on September 15, 2011, where it was mentioned that per Sweetwater County's emergency access requirements, two roads would be necessary for safety purposes.

Comment: BCA et al. (Pages 11, 32); WOC (Pages 5-8); Marybeth Devlin (Page 3); and Neil and Jennfier Miller (Page 1)
Several commenters expressed concerns that the increased traffic in the area associated with the Project would have negative impacts on the Greater sage-

grouse. This includes concerns over the number of vehicles, noise generation, and specific concerns regarding the Sooner lek, as it is the closest to any road potentially used by the Project.

Response: The response is separated into specific concerns:

Number of Vehicles
The DEIS reported the maximum traffic to the Permit Area as 50 SUVs per day and 2-5 tractor/trailers per week. There was an error in this reporting and the text has been corrected to 50 SUVs per day and 2-5 tractor/trailers per day.

Noise Generated by Vehicles
The comments reference a series of reports and studies, mostly applicable to oil and gas operations, coal, and other large-scale mineral operations, documenting the impact noise can have on lek populations. The BLM ID Team acknowledges that Greater sage-grouse are sensitive to noise and human disturbance that would be caused by increased traffic for the proposed Project operations. Noise levels, specific to this Project are addressed in the DEIS and FEIS Section 4.12 and noise impacts to Greater sage-grouse are addressed in the DEIS and FEIS Section 4.9.5.3 and are briefly summarized below.

According to EO 2011-5, new noise levels at the edge of a lek should not exceed 10 dBA above ambient noise between 6:00pm and 8:00am from March 1 to May 15. Noise generating activities would primarily occur between 7:00am and 5:00pm, overlapping with the restricted time by an hour. Initiation of construction activities would comply with seasonal restrictions to limit the heavy equipment traveling to and from the site during more sensitive times. Section 4.12 of the DEIS discusses noise from traffic, specifically the heavy construction equipment, and concludes that noise generated would be indistinguishable from the ambient wind noise at distances greater than 1,000 ft. Given that the Sooner and Sooner Oil Leks are the only occupied leks within 1,000 feet of a road (Section 4.9.5.3), most leks will have negligible noise impacts. Additionally, as was noted by WGFD previously, local topography combined with current vegetation and prevailing wind directions will likely dissipate any noise generated on the road before it reaches the leks.

Sooner Lek Considerations
Given that the Sooner and Sooner Oil Leks are within 1,000 feet of Sooner Road, traffic increases along this road could impact lek attendance at these leks. Most of the heavier transports of materials and equipment into and from the Project would use the West Access Road and Wamsutter-Crooks Gap Road (Section 4.9.5.3). The final NRC SEIS states that “most construction workers would travel to the proposed project area from Casper and Rawlins, the two largest cities in the region. This travel would involve driving on US 287 to Lamont, then west to Bairoil approximately 10 km [6 mi] on WY 73, then about 20 km [12 mi] west on CR 22 to Sooner Road (BLM #3215) to the proposed project area access road

(SEIS Figures 4-1 and 4-2)." This path would bring workers in from the northeast and does not pass by the Sooner Lek (see Figures 3.2-1 and 4.9-2 of the FEIS). Therefore, though traffic increases may occur along Sooner Road, Project-related increases along Sooner Road are likely to occur mostly to the north of the East Access Road, which would have less of an impact on Sooner Lek and Sooner Oil Lek. Additionally, potential impacts on these leks will be monitored through the annual wildlife monitoring program (Section 4.9.2) and appropriately addressed through the Adaptive Management Plan (Section 4.9.1.10).

Comment: BCA et al. (Pages 11-12); Marybeth Devlin (Page 3); and WOC (Pages 10-11)
Several commenters were concerned that power lines in the Permit Area would provide perching locations for raptors in the area, and therefore increase predation of Greater sage-grouse and other small animals in the area.

Response: Though the DEIS does state that power lines will be "placed in or adjacent to the access road right-of-way to help minimize habitat impacts where possible", this does not mean that all access roads will have power lines adjacent to them. There is an existing transmission line that runs along the western boundary of the Project, and the Project's main power line will be connected to this. The new primary power line constructed for the Project from the existing line will be outside the 0.6-mile buffer around Greater sage-grouse leks. Tertiary transmission lines within the Permit Area would be buried. Any power lines that are not buried will be equipped with BLM-approved anti-perch measures, which have been demonstrated to significantly reduce the number of raptors perched on the poles. (During the demonstration, a total of 249 raptors and ravens were observed on or near the control line, and only 3 raptors or ravens were observed on or near the new, anti-perch line (Oles, 2007)). Therefore, the transmissions lines that will be constructed for the Project will comply with the sage-grouse stipulations outlined in EO 2011-5 (Mead, 2011).

Comments: BCA et al. (Page 32) and WOC (Page 8)
The WOC and BCA et al. are concerned that the reliance on the adaptive management plan will not provide adequate or timely protection to the Greater sage-grouse.

Response: BLM has based their approach on the best available data and on current policies and procedures, and in response to discussions with WGFD, considers adaptive management an appropriate tool to help ensure continued reliance on timely information.

Comments: LCI (Page 9)
LCI notes that the description of the technical advisory committee (the TAC") could be clarified in the following areas:

- The substantive standards for decision making by the TAC are not clear regarding what constitutes a "downward trend".

- A dispute resolution/appeal process should be incorporated in the event the TAC does not reach consensus, for example over whether an impact threshold has been reached or the necessity of imposing specific additional protective measures.
- The description of the monitoring program is not clear regarding the relationship of the geographic areas to be monitored, the leks to be monitored and the standards by which monitoring programs are to be evaluated by the TAC.

Response: The text in Section 4.9.1.10 discusses how significant declines will be determined. The text in Section 4.9.1.10 has been revised to address the requested clarifications regarding dispute resolution and expectations for monitoring.

Comment: BCA et al. (Page 32)
BCA et al. questioned the effectiveness of off-site mitigation.

Response: The comment focuses on "compensation mitigation" for oil and gas impacts, which presumably refers to off-site conservation easements. Although 'compensation mitigation' is not precluded by the EIS, the focus of adaptive management for the Lost Creek Project is not solely on conservation easements, but also on techniques that could be used to improve conditions on-site, as well as in the northeast portion of the Red Desert, including vegetation and land use management, that would influence the populations (Section 2.2.4 of Attachment OP-6 of the WDEQ-LQD Permit to Mine).

Comment: LCI (Page 9)
Regarding the adaptive management plan, the DEIS's discussion of habitat enhancement as a protective measure for the GSG is not clear with respect to whether off-site (i.e., outside the Permit Area) habitat enhancement may be considered. DEIS, p. 4.9-9. As provided for in the Permit to Mine, enhancement of habitat in a buffer region outside the Permit Area is specifically approved. Permit to Mine – Wildlife Plan, p. 28. LCI believes this degree of flexibility is appropriate and would, in fact, further BLM's conservation goals for Bureau sensitive species, as provided for in BLM Manual 6840. As the Manual explains, BLM's goals include "improv[ing] the condition of the species' habitat on BLM-administered lands." BLM-administered lands extend more broadly than the Permit Area itself. Therefore, LCI requests that the FEIS clarify that habitat enhancement may take place outside the Permit Area as an additional protective measure.

Response: As now clarified in section 4.9.1.10 and 4.9.1.12, off-site habitat enhancements may be considered as an additional protective measure and will be considered during the adaptive management program.

Comment: BCA et al. (Page 33); WOC (Page 4)

The commenters believe that the Proposed Action violates the provisions of the EO and the BLM Instruction Memorandum 2010-12 (IM) and that BLM should act independently and use the IM to require additional protections for Greater sage-grouse.

Response: During the WDEQ-LQD permitting process, WGFD reviewed the Proposed Action for adherence to the stipulations developed by the Sage Grouse Implementation Team, including the Density Disturbance Calculation Tool (DDCT), road locations, and other provisions. The WGFD commented that the results from the DDCT indicated that the surface disturbance resulting from the Project was in line with state-wide stipulations for Greater sage-grouse taking topography and proximity to leks into account (WDEQ, 2011a). In addition, the Proposed Action was reviewed for consistency with the provisions of the EO during the notice and opportunity to participate in the Wyoming Environmental Quality Council (EQC) Hearing on the WDEQ-LQD Permit in August 2011 (resulting in the EQC upholding the WDEQ-LQD decision to issue the permit) (EQC, 2011).

Per the policies stated in the BLM IM 2010-12, WY, BLM will manage sage-grouse to support population objectives set by the WGFD. BLM is working with WGFD, for this Project and in general, on collaborative efforts for monitoring and adaptive management for the protection of sage grouse and to keeping the bird from becoming a listed species.

Comment: BCA et al. (Page 33); LCI (Page 6)
These comments relate to the applicability of seasonal restrictions on Project activities. While LCI requests clarification regarding the application of the seasonal restrictions, BCA et al. questions the effectiveness of enforcing timing stipulations for the initiation of construction and exploration, but not enforcing restrictions for production.

Response: The EIS text has been revised (Section 2.1.6.4, Table 2.1-2, Table 2.2-2, Section 4.9.1, Section 4.9.1.9, Table 4.9.1, and Section 4.9.5.3), to clarify the application of the seasonal timing restriction with respect to exploration, initial construction, and production, and activities included in each phase to be consistent with the WDEQ Permit to Mine. The interpretation of the applicability of the seasonal restrictions for this Project is in line with the SGIT EO and has also been verified through correspondence with the WGFD during the WDEQ-LQD permit development as well during development of the BLM EIS.

Comments: BCA et al. (Pages 31-32); WOC (Page 13)
The comments express concerns over the lack of representation of data from more recent Greater sage-grouse surveys (2010 and 2011 wildlife surveys) conducted in the Permit Area in the DEIS.

Response: The results from the 2010 and 2011 lek counts have been added to Table 3.8-3 in the FEIS. The complete 2010 and 2011 Annual Wildlife Monitoring Reports have also been as an appendix in the FEIS.

Comment: BCA et al. (Page 32)
BCA et al. believes that the 3-year running average is problematic, stating that this method could mask decreases in Greater sage-grouse populations until it is too late to take corrective action.

Response: The specifics surrounding the sage-grouse monitoring are outlined in the Wildlife Protection Plan and Wildlife Monitoring Plan (Attachment OP-6 of the WDEQ-LQD Permit to Mine). The techniques used to analyze the data during adaptive management have been approved by the WGFD, who currently manages the Greater sage-grouse. The use of a three-year running average is recommended for use of determining potential Project-related declines in the SGIT Executive Order (Mead, 2011).

Comment: BCA et al. (Page 33)
We do not support the use of wing barrels as an index to population (DEIS at 4.9-18), as these are too sensitive to hunter effort, which readily skews the data.

Response: As discussed in the Wildlife Protection Plan and Wildlife Monitoring Plan (Attachment OP-6 of the WDEQ-LQD Permit to Mine), WGFD will work with LCI to establish wing-barrel locations. The several study techniques that will be used, including use of wing-barrel data, have been approved by the WGFD.

Comment: WOC (Page 19-20)
WOC expressed their opinion that the cumulative impact assessment did not address the additive effect of the Lost Creek Project and that a potential wind power project was omitted from the list of projects in the area.

Response: As noted by WOC, Item 18 of the EO does recommend co-locating proposed disturbances "within areas already disturbed or naturally unsuitable" but that "adjustments to the stipulations may be necessary based upon local conditions and limitations." In this instance, an economic uranium ore deposit has been located and production and reclamation plans prepared in accordance with existing regulatory requirements. As noted in response to a previous comment, economic deposits of a locatable mineral, such as uranium, are substantially smaller in areal extent and may not coincide with reservoirs of leasable minerals, such as oil and gas. Also, as noted in Section 5.1.2.1 of the EIS, another uranium project is nearby, which is part of the reason roads, such as the Mineral Exploration Road (Figure 3.2-1) exist, limiting the number of new roads that LCI would have had to build or upgrade to access their project.

The potential wind power project mentioned in the comment is the Whirlwind I Wind Project. Other than press releases in early 2012 (e.g., Casper Star Tribune

citation below), which indicated the "eventual size of the project will be determined by factors like transmission capacity and siting constraints" and availability of leases, little information is available.

Citation to Casper Star Tribune
http://trib.com/business/pathfinder-wold-plan-to-develop-large-wind-farm/article_91b4e68a-facf-5ded-b7ab-695a81aa155c.html

Comment: WOC (Page 7)
The WGFD does not believe that the topographical visual assessment is an appropriate method to determine the effect the Project roads could have on Greater sage-grouse.

Response: The visual assessment was added to the DEIS at the request of WGFD. The visual assessment showed that the topography in the area created a barrier between the access roads and the nearby leks. In addition, it was noted that the vegetation and prevailing wind direction would help dissipate the sounds of traffic before they reached the edge of the lek. Therefore, it was concluded by the WGFD that the sage-grouse leks would not be exposed to noise levels above those specified in the EO.

Comment: WOC (Pages 8-9)
The WOC is concerned that the current designation of the Crooked Well lek of "Occupied-Inactive" is incorrect, and that the lek should instead be classified as "Occupied-Active." They are also concerned that the surveying techniques might not have followed necessary protocol.

Response: As mentioned in the DEIS, further explanation of the Crooked Well Lek designation is available in Attachment D9-4 of the WDEQ-LQD Permit to Mine. In 2009, a letter was sent to the WGFD to verify the classification of the Crooked Well lek. The survey results from 2010 and 2011 also reported that no sage-grouse were seen in the Crooked Well lek. The text has been edited to reflect that the Crooked Well lek was surveyed in 2011.

Additionally, in the wildlife reports written by LWR Consultants, Inc., there is a more specific outline of the monitoring techniques utilized during Greater sage-grouse surveys. LWR followed protocols outlined by the BLM and WGFD such as:

- conducting surveys between April 1 and May 7, from approximately 0.5 hours before sunrise to 0.5 hours after sunrise;
- surveying areas at least 3 times each, with surveys separated by 7-10 days;
- examining suitable habitat for new lek locations; and
- performing surveys both from the ground and from a fixed-wing aircraft.

Comment: WOC (Page 10)
The WOC claims that LCI's exploration activity has already caused significant decreases in sage-grouse populations.

Response: LCI's exploration activities have been permitted in accordance with applicable federal, state, and local regulations. The aerial photographs shown in the comments from WOC are zoomed in on one mine unit and are not representative of 'before' and 'after' in the Permit Area or of the area of exploration for LCI. As noted in the responses to other comments and as noted in Section 2.1.1 of the EIS, uranium ore is concentrated in roll front deposits, not scattered throughout a geologic basin, so as exploration progresses, the focus of the exploration narrows rather than continuing throughout an area. The discussion of declines in populations referenced in Section 3.8.3.2 is regional, not specific to Lost Creek. Uranium exploration in the Great Divide Basin was active until the late 1980s, at the latest, and did not resume until the mid-2000s. With respect to the Crooked Well Lek, information from as early as 1994, before any recent exploration, indicates the Crooked Well Lek not was active.

Raptors

Comment: WOC (Page 13)
WOC expressed concern that the survey frequency for new raptor nest surveys was not sufficient.

Response: Annual nest surveys would occur on known raptor nest locations, if any new nests are located during these annual nest surveys they will still be recorded. The text cited in Table 2.1-2 has been updated for clarification.

Species of Concern

Comments: WOC (15-18, 18-19) and BCA et al. (Page 17-23)
Several comments discussed various species of concern in the Permit Area, including sagebrush-obligate passerines, the Wyoming pocket gopher, and the pygmy rabbit. Specific concerns pertaining to these species included monitoring techniques, lack of impact analysis, and presence of significant impacts.

Response: The monitoring and mitigation measures described in Sections 4.9.1 and 4.9.2 conform with current policies and procedures for protection of these species in the Permit Area.

Comment: LCI (Page 14, #34)
"The DEIS, as well as the Plan of Operations, states that Type I fencing will be used around the holding ponds. Type I fencing is too short to preclude deer, antelope and elk. Therefore, LCI requests that the fencing type be upgraded to Type II."

Response: The text has been revised to include Type II fencing around the holding ponds.

Water Quality Impacts

Comments: BCA et al. (Page 12-13); Marybeth Devlin (Page 3); and WOC (14-15)
Commenters are concerned that the Storage Ponds could have significant impacts on wildlife.

Response: As described in Section 2.1.2.2, the primary purpose of the Storage Ponds is to allow for shut down of the UIC Class I wells for maintenance, such as Mechanical Integrity Tests (MITs), or repair while the Plant remains in operation. The total capacity of the Storage Ponds is designed to accommodate two weeks of reduced Plant operation and is redundant, allowing for maintenance of the Storage Ponds in the event of a liner problem. The Storage Ponds would be lined with a double synthetic liner, including a leak detection system, and a series of monitoring wells would be installed to detect leaks into the surrounding sediments. While the fencing around the Plant and Pattern areas would allow the passage of wildlife, the fencing around the Storage Ponds would be constructed to prevent access by wildlife, cattle, and wild horses (Type II fencing per WDEQ-LQD Guideline No. 10 [1994c]). As stated in Section 4.9.1.6, the water quality in the Storage Ponds would be monitored quarterly and whenever a process change may result in a significant change in water quality. The Storage Ponds would contain produced groundwater and process waters with a near neutral pH. Section 4.9.6.5 has been modified to include discussion of effects at lower selenium concentrations due to bioaccumulation. This section also now contains information on where the Storage Pond water will be drained (the UIC Class I wells). Finally, it has been noted that the ecological risks of applying an herbicide to reduce or eliminate algal growth in the storage Ponds would be considered prior to application. As stated in Section 4.9.1.2, the Storage Ponds would be monitored daily for wildlife morbidity and mortality. If evidence of mortality is present or if selenium reaches a harmful level, additional measures would be taken to prevent any access. Additional deterrents would be consistent with agency recommendations.

Comment: USFWS (Page 2)
The USFWS is concerned that the discussion surrounding selenium concentrations in the Storage Ponds neglects to address potential issues associated with bioaccumulation and sets the goal concentration too high. There are also concerns associated with the use of herbicides in the ponds to prevent algae and plankton growth.

Response: Section 4.9.6.5 has been modified to include discussion of effects at lower selenium concentrations due to bioaccumulation. This section also now contains information on where the Storage Pond water will be drained (the UIC Class I wells). Finally, it has been noted that the ecological risks of applying an

herbicide to reduce or eliminate algal growth in the Storage Ponds would be considered prior to application. The BLM would require the applicant to obtain a Pesticide Use Proposal with associated environmental analysis and consider other Integrated Pest Management techniques, prior to authorizing the use of pesticides.

Studies and Data

Comments: BCA et al. (Page 31) and WOC (Page 2)
The commenters were questioning the lack of more recent data and the availability of the 2010 Wildlife Report.

Response: The complete 2010 and 2011 Annual Wildlife Monitoring Reports have been added as an appendix in the FEIS.

Wild Horses

Comments: Marybeth Devlin (Page 4)
"The proposed Lost Creek ISR mine would take away 3,088 more acres from the wild horses. The EIS makes no mention of providing compensatory land of equal quality elsewhere in the vicinity. This pattern of taking but not giving back needs to end. By law, the HMAs are supposed to be managed principally for the wild horses. Thus, their needs must take priority and be fully met."

Response: The Proposed Action would not reduce the size of Herd Management Areas (HMAs). However, forage would not be available in the fenced areas of the Proposed Action. Section 4.2.4.1 of the DEIS notes, "If all of the proposed disturbance areas of the Project were fenced at once, 345 acres (eight percent) of the 4,254-acre Permit Area would be [unavailable]". The Stewart Creek HMA and the Lost Creek HMA, combined, cover more than 480,000 acres. Therefore, 0.07 percent of the combined HMA acreage would be unavailable to wild horses if all the proposed disturbance areas were fenced at once.

In addition, Section 3.1.1.2 of the DEIS notes that, "While there are specified AMLs [appropriate management levels] for the Lost Creek HMA and the Stewart Creek HMA, the horses are free to roam and are not confined to HMAs." The HMAs were established with boundaries such as fences, topography, etc. Typically, if the wild horse numbers are at or near their AMLs, and forage and water conditions are adequate (i.e., drought conditions do not exist), the wild horses should remain within the HMAs. When the wild horse numbers are greater than their AMLs and/or during droughts, wild horses will leave the HMAs. Additional information regarding wild horses is also available at the following BLM websites of "Myths and Facts" and "The Wild and Free-Roaming Horses and Burros Act of 1971", which can be found at the following websites, respectively:

http://www.blm.gov/wo/st/en/prog/whbprogram/history_and_facts/myths_and_facts.html

http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/wild_horses_and_burros/sale_authority.Par.69801.File.dat/whbact_1971.pdf

Comment: Marybeth Devlin (Page 3-4)
"Chapter 3, Section 3.9 of the EIS devoted just two pages to the area's wild horses (pdf-pages 72 and 73). Instead of providing comprehensive information, the narrative focused on the supposed addition of escapee domestic stock horses into the wild, seeming to minimize the herds' genealogical importance, while grudgingly acknowledging their "limited" Spanish-Mustang ancestry."

Response: The information presented in Section 3.9 is summarized from the BLM Rawlins Field Office's Wild Horse Management Areas website:
http://www.blm.gov/wy/st/en/field_offices/Rawlins/wh.html#stewart
and the BLM Wild Horse Herd Management Areas – Interactive Map website:
http://www.blm.gov/wy/st/en/programs/Wild_Horses/maps/interactive-map.html
The BLM's Environmental Assessment WY-050-EA11-78 provides additional information regarding the genetics of the Lost Creek Herd and the Stewart Creek Herd: "Genetic samples (hair samples) were taken in 2009 and these samples were also analyzed by Dr. E. Gus Cothran, Equine Genetics Laboratory, Texas A&M University." . . . "Genetic variability of this [Lost Creek] herd is fairly high. The all values related to allelic diversity and heterozygosity are high. Genetic similarity results suggest a herd with mixed ancestry that primarily is North American. There is a possibility of some, although limited, Iberian ancestry." . . . "Genetic variability of this [Stewart Creek] herd is generally high. The values related to allelic diversity are near above average while heterozygosity is high. The herd appears to be in genetic equilibrium despite a high percentage of alleles at risk of loss. Genetic similarity results suggest a herd with mixed ancestry that primarily is North American." This information is available online at:
http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1027&context=wyoming_enviroassess

Comment: Marybeth Devlin (Pages 3-4)
"Chapter 4, Section 4.10 purported to address the potential impacts of mining operations on the wild horse herds. Mostly, the negatives were dismissed as being of "no significant impact." Any information concerning the wild horses that weighed against the mine was downplayed. That is not a proper analysis.

For instance, the EIS indicates that mud pits will not be fenced because experience with other ISR projects showed them not to be a problem for horses. But the EIS notes (parenthetically) that the other projects involved mainly domesticated horses which, we would infer, were under the control of their guardians.

In another instance, BLM admits that the wild horses could be exposed to toxic chemicals around spills and leaks. But these dangers are brushed off. Collisions with vehicles, disturbances, loss of habitat -- you name it and the EIS discounts the impact on the "continued existence" of the wild horses. Thus, if an impact would not potentially exterminate the wild horse population, the EIS characterizes it as "short term" or of "no significant impact.""

Response: To clarify, the Proposed Action would fence all mud pits to exclude cattle and wild horses. Many of the mud pits would be located inside the fenced mine unit pattern areas. The mud pits located outside of the larger fenced areas would be individually fenced. As Section 4.10.4.2 states, "Approximately 300 acres within the Permit Area would be fenced to keep out cattle and wild horses. While this fencing may affect the movement of horses, requiring them to travel around the fenced areas, the fencing is not expected to increase fragmentation of herds, due to the relatively small area fenced. Temporary mud pits would be fenced if they are located outside of the fenced portion of the mine units. Inside the fenced portion of the mine units, mud pits would not be fenced, in part due to the limited time the pits are open and the level of activity around the pits while they are open. Temporary mud pits (within the fenced pattern area or individually fenced if not within the pattern area) have not been the cause of significant mortality to big game at other ISR operations. (Most other ISR operations are in areas with more domestic than wild horses.) Therefore, the mud pits are not anticipated to impact wild horses."

Fencing and spill/leak prevention measures help prevent potential wild horse exposure to toxic chemicals. As Section 4.10.4.2 states, "During Operation, spills around wellheads and leaks from pipelines could expose wild horses to toxic chemicals. LCI's leak detection systems and SPCC plan to remove affected soils and capture release fluids would eliminate or reduce such impacts." Exposure to toxic chemicals and collisions are unlikely, uncommon, and unexpected events that should not occur, but if they do occur, impacts would be to individual horses and would not impact the overall herd health. Potential exposure to toxic chemicals, potential collisions with vehicles, disturbance from increased traffic, and some loss of habitat occur in gas development areas such as Hay Reservoir and in the Adobe Town HMA with no noticeable impacts to wild horse herd health.

Comment: Marybeth Devlin (Page 4)
"… for the EIS in question, BLM looked only at those HMAs directly affected by loss of acreage, and did not consider any of the others. Thus, the analysis is incomplete regarding the mine's impact to the allegedly free-roaming horses that BLM manages as the Red Desert Complex."

Response: Figure 3.9-1 of the DEIS shows the boundaries of the two Herd Management Areas (HMAs) that overlap the Lost Creek Permit Area (Permit Area) – the Lost Creek HMA and the Stewart Creek HMA. The Permit Area does

not overlap the boundaries of the other three HMAs of the Red Desert Complex, the Antelope Hills, Crooks Mountain, and Green Mountain HMAs. However, the lands between the HMAs of the Red Desert Complex may serve as corridors between the HMAs. Since many of these HMAs are not fenced, the wild horses of these HMAs freely move, mix, intermingle, and maintain genetic viability and diversity. This interchange/exchange allows the BLM to maintain the appropriate management levels (AMLs) of the HMAs; otherwise, there would possibly be concern to increase the AMLs if this mixing did not occur. This mixing and movement of wild horses occurs on a regular basis, but more so in some HMAs than in others. Wild horses of the Lost Creek HMA can freely mix with the other wild horses of the Red Desert Complex HMAs, except for the Stewart Creek HMA. The Stewart Creek HMA is fenced completely separate from the other four HMAs, although in certain snow conditions, wild horses have been observed walking over cattle guards and fences (particularly from the Green Mountain HMA) and moving into the Stewart Creek HMA. In addition, a let-down fence within the Permit Area is temporarily lowered each fall to allow southern pronghorn migration, and may allow wild horses of the Stewart Creek HMA to freely move outside of the HMA on occasion (but a large percentage is unlikely).

Comments: Marybeth Devlin (Pages 5-6)
The commenter is concerned that Section 6.0 of the report does not list any wild horse advocacy organizations and that no organizations of this nature were consulted during the EIS writing process.

Response: Sections 1.5 and 6.0 of the EIS document the agencies and tribes, with regulatory authority and/or responsibility in relation to the Proposed Action, who were invited to become cooperating agencies in the Project's development process. Interested parties and individuals have been provided opportunity for input on the Proposed Action through the NEPA public scoping and notice and comment processes, and other permitting and licensing processes, described in Sections 1.5 and 6.0.

To facilitate future communication, the BLM added Marybeth Devlin to the mailing list for information related to the Project and will provide her an electronic copy of the Final Environmental Impact Statement (FEIS). The BLM will be accepting public comment on the FEIS within 30 days after the Environmental Protection Agency publishes the Notice of Availability in the Federal Register.

Comment: LCI (Page 14-15, #37)
"The DEIS states, "…spills around wellheads and leaks from pipelines could expose wild horses to toxic chemicals." This statement could be more accurate by stating spills may contain trace quantities of toxic chemicals. Sect. 4.10.5.2 contains similar language and LCI requests that both statements be clarified."

Response: The language in section 4.9 and 4.10 has been revised to reflect this distinction.

Air Quality

Comments: WDA (Page 2) and Marybeth Devlin (Page 3)
The comments discuss concerns that the fugitive dust from the Project roads and activities will have a significant negative impact on wildlife, wild horses, and livestock.

Response: Fugitive dust calculations for the project were calculated as the total uncontrolled PM-10 emissions per year. While uncontrolled emissions from the project are estimated to be 170 tons/year, that estimate does not take into account the control efficiency for the use of water and chemical dust suppressants that are required per the facility's Air Quality Permit issued by the Wyoming Department of Environmental Quality. Air Quality Permit CT-7896, Condition 10 requires the use of water and chemical dust suppressant to control fugitive dust emissions on the unpaved roads in the project area. The accepted control efficiency for watering is 50% and 80% for chemical dust suppressant application. The vast majority of the 170 tons/year of fugitive dust generated is due to travel and commuting on the unpaved roads. Control of fugitive dust emissions is a requirement for the permitted activities, and the WDEQ Air Quality Division cannot issue an air quality permit for any activity that will violate the National Ambient Air Quality Standards designed to protect public health. Due to the issuance of a federally enforceable Air Quality Permit by the state regulatory agency, the impacts from PM-10 emissions for the project are sufficiently mitigated to prevent harmful or detrimental impacts to humans, animals and the environment.

Comment: BCA et al. (Page 12)
The EIS discusses nonradioactive dust and radon gas as the primary airborne pollutants. DEIS at 2-22. We are concerned that dust may become contaminated with radiation, and then be spread by airborne means. What are the potential effects of airborne radioactive pollutants?

Response: Sections 4.17.2.1 and 4.17.4.1 of the DEIS summarizes the evaluation of potential radiological sources and impacts and the monitoring efforts required by the NRC.

Comment: EPA (Page 3)
"The Draft EIS presents existing conditions for only PM_{10} near the Project area. We recommend providing more complete air quality information for existing conditions by including additional criteria pollutants for the surrounding area in the Final EIS. We suggest contacting the Wyoming Department of Environmental Quality (WDEQ) for updated nearby ambient air quality summary data for the criteria pollutants. Table 3.10-6 Primary and Secondary Limits for NAAQS and the State of Wyoming, should be updated to include the recently finalized NO_2

and SO_2 1-hour NAAQS. Also, the ozone NAAQS is no longer 0.08 ppb, but is now 0.075 ppm."

Response: Table 3.10-6 was updated to reflect more recent ambient air quality standards in place. A summary of the 2011 Wamsutter Station Annual Report from the WDEQ was added.

Comment: EPA (Page 3)
"For the Preferred Alternative, a vacuum yellowcake dryer was included in the project process, yet no emissions appear to be included in the emissions inventory (Section 4.11.4.2). We recommend emissions from the dryer be included in the Final EIS."

Response: Text has been added to Section 4.11.5.2 to clarify that emissions from the vacuum drier would be negligible and to cross-reference Section 4.17.5 (Public and Occupational Health Impacts for Other Alternatives) which provides more information about the dryer alternative.

Socioeconomic

Comment: Fischer-Watt Gold Co., Inc. (Page 1)
"The DEIS does not evaluate the economic viability of the Lost Creek ISR Uranium Project and for that I reference an external document - "Preliminary Economic Assessment of the Lost Creek Property, Sweetwater County, Wyoming Prepared by Ur-Energy Inc.", dated April 30, 2012. This document anticipates a long lived, economically viable project that creates jobs for Wyoming Citizens and tax revenue for Federal, State, and local governments."

Response: Thank you for your comment and your interest and participation in the development of the FEIS for the Lost Creek Uranium In-Situ Recovery Project. Section 4.15 of the DEIS (and FEIS) evaluates the potential impacts of the Proposed Action with regard to socioeconomic conditions, including: demographics; the gross domestic product; revenue and taxation; labor, employment and income; cost of living and housing; and infrastructure and services (education, health care, law enforcement and fire protection, communications and utilities, and recreation).

Comment: Marybeth Devlin (Pages 6-7)
"The proposal touts direct and indirect potential job creation -- 119 to 148 positions -- and boasts that tax revenue will inure to the benefit of federal, state and local coffers. But how many of those jobs will actually materialize? How many will be permanent, full-time positions? Unless car-pooling is the rule in Wyoming, the projected traffic of 50 vehicles per day suggests a much smaller workforce. Moreover, the mine may never produce anywhere near the level of employment claimed by the applicant due to recent events and their long-term ramifications."

Response: For clarification, Section 4.15.4 of the FEIS provides estimates of direct and indirect employment related to the Proposed Action, and Section 4.15.6 of the FEIS provides estimates of independent contractors, full-time LCI employees, and intermittent contract employees for each phase of the Proposed Action. The estimated total direct and indirect employment during the Initial Construction Phase would range from 159 to 160 positions. From Initial Construction to Mine Unit Development, an additional 20 to 89 positions of direct and indirect employment were estimated. The employment estimates of Mine Unit Development are anticipated to be similar to those of Operation and Mine Unit Reclamation. The Final Reclamation employment estimates are anticipated to be similar to those of Initial Construction.

Per Section 4.3, the estimated commuting traffic was 33 trucks/vans/SUVs during Initial Construction, 15 trucks/vans/SUVs during Mine Unit Development, 3 trucks/vans/SUVs during Operation, and 12 trucks/vans/SUVs during Reclamation. The estimated number of daily commuting vehicles is less than the estimated direct labor force for several reasons: 1) there would be temporal overlap between several of the on-site activities, and some vehicles and equipment would be working on more than one activity at the same time; 2) while carpooling would not be required, it would be a natural consequence of distance and would be encouraged; and 3) each laborer/employee would not commute to the site each day of the week.

The estimates of direct and indirect employment as well as commuting traffic are based on available information, and are used to analyze the potential impacts of the Proposed Action. Estimates are approximate calculations and are not to be considered actual. As noted in Section 4.15.6, similar to tax revenue, labor and employment would depend on the amount of U3O8 produced.

Comment: Marybeth Devlin (Page 7)
"A representative of the applicant has been quoted saying that, although the price per pound of yellow cake has dropped by half, he insisted that at $60, the company would do just fine. "We're in great shape at those prices." …

His contention contradicts the economics. The first link below is for a recent article reporting that the break-even figure is now $61. The second link provides the current price: $51. While a company can, I suppose, choose to pursue a losing proposition -- possibly for tax write-offs, surely it behooves BLM to deny the application for a project that would disturb an area of ecological importance such as the Red Desert and likely be abandoned eventually anyway."

Response: Section 4.15.5.1 of the DEIS notes that, "Using February 2010's market price of U_3O_8 (about $42 per pound), the Project would contribute $360,000,000 to the nation's GDP [Gross Domestic Product]. The price increased to about $73 per pound at the beginning of 2011, and the price has been about $52

per pound in the first part of 2012. The Project would boost the immediate area's diversity and economic health."

Comment: Marybeth Devlin (Page 7)
"Prior to the Fukushima catastrophe, it was expected that demand for uranium by the national and/or world market would increase. This expectation must have prompted Ur-Energy's decision, several years ago, to pursue a mining permit and to establish a processing facility on site. However, post-Fukushima, the outlook is less favorable. … The U.S. Energy Information Administration (EIA) has published its Annual Energy Outlook 2012 Early Release Report, the summary of which is linked below. The EIA's projections through 2035 indicate a flat or even declining growth curve for nuclear energy."

Response: According to the AEO2012 Early Release Overview published by the United States Energy Information Administration in January 2012 (available at http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2012).pdf), "Electricity generation from nuclear power plants grows by 11 percent in the AEO2012 Reference case, from 807 billion kilowatt-hours in 2010 to 894 billion kilowatt-hours in 2035, accounting for about 18 percent of total generation in 2035 (compared with 20 percent in 2010). Nuclear generating capacity increases from 101 gigawatts in 2010 to a high of 115 gigawatts in 2025, after which a few retirements result in a decline to 112 gigawatts in 2035. AEO2012 incorporates new information about planned nuclear plant construction, as well as an updated estimate of the potential for capacity uprates at existing units. A total of 10 gigawatts of new nuclear capacity is projected through 2035, as well as an increase of 7 gigawatts achieved from uprates to existing nuclear units. About 6 gigawatts of existing nuclear capacity is retired, primarily in the last few years of the projection, as not all owners of existing nuclear capacity apply for and receive license renewals to operate their plants beyond 60 years."

The national nuclear energy industry is expanding due to increased electricity demand, increased interest in energy security (most of the U3O8 used to fuel the nuclear power reactors in the United States is currently imported), and increased demand for alternative energy sources.

Waste Management

Comment: Marybeth Devlin (Page 2)
The commenter is concerned that the quantity of wastes produced is large and the potential for spills and leaks is of concern.

Response: Table 2.1-1 lists the estimated monthly quantities of both liquid and solid radioactive wastes that will be generated. The liquid waste will be disposed of in the permitted deep disposal UIC wells. Radioactive solid waste that can't be decontaminated will be disposed of at a NRC-licensed facility.

The Lost Creek facilities will be designed to withstand worst case credible upset conditions including but not limited to wind storms, earthquakes, and sheet flooding. Measures to reduce the potential for accidental releases include appropriate engineering design, construction, maintenance; development and implementation of the Storm Water Pollution Prevention Plan (SWPPP), inspections, notification procedures, response actions, on-going employee training and general health and safety procedures. Specifically, Standard Operating Procedures (SOPs) addressing spill prevention and mitigation will be developed and implemented at the site. The SOPs will address pipeline installation and testing, automated system monitoring and alarming, site inspections, spill mitigation; and employee training. If an upset condition results in the release of mining solutions or chemicals to the environment, the affected system(s) will be shut down and thoroughly inspected/tested by an individual familiar with that system before being restarted. Management will verbally notify BLM and WDEQ-LQD immediately if an upset condition results in a release to the environment and cannot be made safe immediately. In such cases, LC ISR, LLC will also submit a written report to BLM and WDEQ-LQD within one week detailing the nature, location and cause of the incident, what if any releases to the environment resulted, what efforts were made to correct the problem, and what will be done in the future to prevent or mitigate similar occurrences. Measures for preventing and remediating accidental releases are discussed in the WDEQ-LQD Permit to Mine (e.g., Sections OP 2.9, OP 3.5, and OP 4.4 and Attachment OP-2) (LCI, 2011b) and in the NRC Technical Report (e.g., Sections 4.2.5.5, 5.7.1.4, and 5.7.6.6) (LCI, 2010).

Cumulative Impacts

Comment: PCW (Page 2)
The CCSM Project is mentioned throughout the land use analysis in the Lost Creek DEIS. Due to the proximity of the CCSM Project to the Lost Creek Project, PCW agrees that it is appropriate for the Lost Creek DEIS to consider the CCSM Project in its analysis. However, in the cumulative effects section (Section 5.2) of the Lost Creek DEIS the statement is made that "The Chokecherry-Sierra Madre Wind Energy Project could also impact land use due to safety considerations." Lost Creek DEIS p5-11. This Statement is not consistent with the analysis contained in the CCSM DEIS. Furthermore, PCW is unclear as to what "safety considerations" are of concern. The statement is simply not supported by the facts and appears gratuitous at best.

Response: The text in Section 5.2 has been clarified. The intent was to note that, for any development project, some temporary changes in land use may be necessary to avoid interference, including potential safety concerns, among users (e.g., trailing cattle through a construction zone).

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Wyoming High Desert District
Rawlins Field Office
1300 North Third Street
P.O. Box 2407
Rawlins, Wyoming 82301-2407

In Reply Refer To:
3809 (WYD03)
WYW-166318

Mr. Jonathon B. Ratner
Western Watershed Project
Wyoming Office
P.O. Box 1160
Pinedale, WY 82941

Dear Mr. Ratner:

Thank you for your interest in the Bureau of Land Management (BLM) Draft Environmental Impact Statement (DEIS) for the Lost Creek Uranium In Situ Recovery Project. Although, the Western Watershed Project (WWP) did not comment or request Interested Party status for this National Environmental Planning Act (NEPA) process, prior to June 10, 2012, the BLM has received timely filed comments from WWP, submitted on your behalf, by Erik Molvar, Biodiversity Conservation Alliance (copy enclosed).

Per your request, a paper and an electronic copy of the DEIS has been enclosed, and you will be included in future mailings for this Project. Additional Project information may be found on the Internet at http://www.blm.gov/wy/st/en/info/NEPA/documents/rfo/lostcreek.html.

In accordance with 40 CFR 1506.6, the comment period for the DEIS ended on June 11, 2012. Late comments will be considered to the extent practicable. Additionally, the BLM will be accepting public comment on the Final Environmental Impact Statement (FEIS) within 30 days after the Environmental Protection Agency publishes the Notice of Availability in the *Federal Register*.

Sincerely,

Dennis J. Carpenter
Field Manager

3 Enclosures:
1 - DEIS Comment Letter
2 - DEIS paper copy
3 - DEIS electronic copy

List of DEIS Commenters and Date Received by BLM

April 25	Aaron S. Howey
May 11	Fischer-Watt Gold Co. Inc.
May 16	United States Fish and Wildlife Service (USFWS)
May 26	Neil and Jennifer Miller
May 30	National Park Service
May 30	Wyoming Game and Fish Department (WGFD)
May 31	David Urasky
June 4	Carbon County Higher Education Center
June 6	Lost Creek ISR, LLC (LCI)
June 6	Sweetwater County Board of County Commissioners (SWCBCC)
June 6	Wyoming Business Council
June 8	Chris Pedersen
June 11	Ron Benda
June 11	Wyoming Department of Agriculture (WDA)
June 11	Western Watersheds Project
June 11	Biodiversity Conservation Alliance, EarthWorks Action, Californians for Western Wilderness, and Western Watersheds Project (BCA et al.)
June 11	Sweetwater County Conservation District (SWCCD)
June 11	Wyoming Outdoor Council (WOC)
June 11	Power Company of Wyoming LLC
June 12	Marybeth Devlin
June 12	Robert LeFaivre
June 13	United States Environmental Protection Agency (EPA)

From: Howey, Aaron S.
Sent: Wednesday, April 25, 2012 1:15 PM
To: BLM_WY_Lost_Crk_Mine
Subject: Re: Lost Creek Project

To: Whom it my concern,

It is my understanding that the only permit (document) left for UR Energy to get on its Lost Creek project is the BLM. Is that correct? I am looking through all of the permits (NRC,EPA, and so on) along with the forms and documents submitted to your office in the last few years. Everything seems to be in order…do you know an expected record date? Thanks

James Baughman, CEO
Fischer-Watt Gold Co., Inc.
2186 S. Holly St., #104
Denver, CO 80222

May 11, 2012

BLM
Lost Creek ISR Project
Attention Dennis J. Carpenter, Field Manager
PO Box 2407
Rawlins, WY 82301

RE: Lost Creek In Situ Uranium Recovery Project, DEIS comments

Mr. Carpenter,

This letter is written in support of approving the proposed development of the Lost Creek ISR Uranium Project in Sweetwater County, Wyoming.

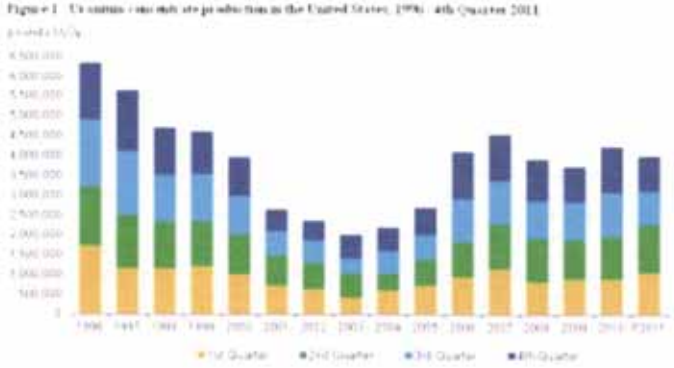
Specifically I would like to address several items in the application that lend support to the above statement of support.

- Economic Viability – The DEIS does not evaluate the economic viability of the Lost Creek ISR Uranium Project and for that I reference an external document – "Preliminary Economic Assessment of the Lost Creek Property, Sweetwater County, Wyoming Prepared by Ur-Energy Inc.", dated April 30, 2012. This document anticipates a long lived, economically viable project that creates jobs for Wyoming Citizens and tax revenue for Federal, State, and local governments.

- Sage Grouse – Page 3.8-27 second paragraph states "No active Greater sage-grouse leks have been located in the Permit Area". There are Sage grouse in the area, but no active breeding areas within the permit boundaries. My view is that the Greater Sage Grouse and wildlife in general can cohabitate with ISR mining operations.

- Financial Assurance – Page 2-34 Financial Assurance paragraph final sentence – "The calculated bond amount for the first year of the Project, including the Plant and a portion of Mine Unit 1 is $6,151,685, as detailed in Table RP-4 of the WDEQ-LQD Permit to Mine". Ur Energy will post a bond to ensure the public is covered for closure.

- US Uranium Production – Page 1-4, Section 1.3.1 first paragraph states the BLM reference to applicable federal policy and authority on nuclear energy and exploration and development on federal lands. My view on this section is that the BLM has the policy and authority to sign the record of decision to grant permission to develop the Lost Creek In Situ project. "Energy utilities in the United States consume 50 million lbs of uranium per year and yet we produce 4 million lbs. of uranium. I support the development of a domestic production of uranium. Below are tables from the eia (US Energy Information Administration).



In simple terms the United States produces 8% of its nuclear energy fuel requirements. I support the responisble development of domestic uranium resoruces.

Sincerely,

James Baughman

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

MAY 16 2012

In Reply Refer To:
06E13000/WY12EC0035

Memorandum

To: Field Manager, Bureau of Land Management, Rawlins Field Office, Rawlins, Wyoming

From: For Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming

Subject: Lost Creek In Situ Recovery Project

Thank you for the Draft Environmental Impact Statement (DEIS), received in our office on April 24, 2012, for the Lost Creek In Situ Recovery (ISR) Project. The Bureau of Land Management has requested the U.S. Fish and Wildlife Service (Service) to provide comments on the issuance of a permit to Lost Creek ISR, LLC to construct and operate an in situ uranium mine and reclaim the area at the termination of mining activities. The ISR Project is located in the northeast portion of Sweetwater County, Wyoming, approximately 15 miles southwest of Bairoil and 25 miles south of Jeffrey City. Out of the 4,254 acres encompassed in this project, surface disturbance will occur in 345 acres

In response to your request for comments, the Service is providing comments in accordance with the Endangered Species Act of 1973 (Act), as amended, 16 U.S.C. 1531 *et seq.* We are also providing recommendations concerning migratory birds in accordance with the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703, and the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668. Wetlands are afforded protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661 *et seq.*, and the Fish and Wildlife Act of 1956, as amended, 16 U.S.C. 742a-742j.

RECEIVED

MAY 17 2012

Bureau of Land Management
Rawlins Field Office

General Comments

In general, the DEIS assesses impacts or potential impacts to our trust resources and provides measures to avoid or minimize those impacts. With regards to contaminant impacts, the assessment of the Storage Ponds and selenium risks to aquatic birds are based on a selenium level of 0.02 mg/L (ppm) or 20 ug/L (ppb) which is 10 times higher than the 2 ug/L threshold level recommended to prevent bioaccumulation and potential toxicity in sensitive species of birds such as waterfowl (Skorupa and Ohlendorf 1991; Lemly 1993; Hamilton 2002). Specific comments and recommendations follow.

Specific Comments

Page 4.7-2, Storage Ponds - This section should specify the minimum amount of freeboard required at the storage ponds to prevent overflow and spills.

Page 4.9-3, Fencing and Screening Measures - The first paragraph states that the Storage Ponds would be monitored daily for wildlife mortality. Please reword the sentence as follows:

> "The Storage Ponds would be monitored daily for wildlife morbidity and mortality."

Page 4.9-40 and 4.9-41, 4.9.6.5 Waterfowl and Shorebirds - This section states that 0.02 mg/L (ppm) or 20 ug/L (ppb) is the "level at which selenium concentrations can become detrimental to some wildlife." This selenium level (20 ppb) is 10 times higher than the 2 ug/L threshold level recommended to prevent bioaccumulation and potential toxicity in sensitive species of birds such as waterfowl (Skorupa and Ohlendorf 1991; Lemly 1993; Hamilton 2002). Table 4.9-2 on page 4.9-42 shows selenium concentrations in the Storage Ponds estimated to range from a low of 10 ug/L up to 200 ug/L. This section also states that if selenium concentrations cannot be maintained at $\leq$ 20 ug/L, the Storage Ponds would be covered to prevent access by birds and/or the affected water would be drained. The DEIS should specify where the water would be drained or disposed of.

This section states that a herbicide will be applied to the Storage Ponds, if necessary, to control the growth of algae and plankton to prevent a route of exposure for selenium. The ecological risks of herbicide application should be assessed prior to treatment of the Storage Ponds. Analysis of selenium concentrations in algae, submerged aquatic vegetation, and/or aquatic invertebrates present in the Storage Ponds may provide data useful in determining the need for herbicide application. The dietary threshold for selenium is 3 ug/g dry weight for sensitive species of aquatic birds (Lemly 1993).

For our internal tracking purposes, we would appreciate notification of any decision made on this project (such as issuance of a permit or signing of a Record of Decision or Decision Memo). Notification can be sent in writing to the letterhead address or by electronic mail to FW6_Federal_Activities_Cheyenne@fws.gov.

We appreciate your efforts to ensure the conservation of endangered, threatened, and candidate species and migratory birds. If you have questions regarding this letter or your responsibilities under the Act and/or other authorities or resources described above, please contact Pedro 'Pete' Ramirez of my office at the letterhead address or phone (307) 772-2374, extension 236.

cc: BLM, Endangered Species Program Lead, Cheyenne, WY (C. Keefe) (e-mail)
FWS, Project Planning Coordinator, Region 6, Denver, CO (D. Carlson)
WGFD, Non-game Coordinator, Lander, WY (B. Oakleaf)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (M. Flanderka)

Literature Cited

Hamilton, S. J. 2002. Rationale for a tissue-based selenium criterion for aquatic life. Aquatic Toxicology 57:85-100.

Lemly, A.D. 1993. Guidelines for evaluating selenium data from aquatic monitoring and assessment studies. Environmental Monitoring Assessment 28:83-100.

Skorupa, J.P., and H.M. Ohlendorf. 1991. Contaminants in drainage water and avian risk thresholds. In: A. Dinar and D. Zilberman, eds., The Economics and Management of Water and Drainage in Agriculture. Kluwer Academic Publishers. Norwell, Massachusetts. Pages 345-368.

From: Neil and Jennifer Miller
Sent: Saturday, May 26, 2012 1:53 PM
To: BLM_WY_Lost_Crk_Mine
Subject: DEIS Comment

May 26, 2012
Neil and Jennifer Miller

RE: DEIS Comment

Dear BLM Decision Makers,

Under Wyoming State policy we have designated Sage Grouse Core Areas which says that any new development or land use within Core Population Areas should be authorized or conducted only when it can be demonstrated that the activity will NOT cause declines in Greater Sage Grouse populations.

No way can this Lost Creek uranium project that includes nine areas of
50 wells each drilled 75-150' apart not impact the breeding success as well as survival rate of the sage grouse in this Core Area. Studies have shown that the activity by vehicles on roads that are close to sage grouse leks have a detrimental effect on the grouse's success in mating. The intermittent noise interferes with the way they communicate with eachother. The access roads to this mining area are within .6 mile of active sage grouse leks. Stress hormones identified with male sage grouse scat increase 17% with road noise and activity at the lek decreases 50%. Road noisy leks have fewer males. In a 3 year study there was a 29-73% decline in male activity at leks affected by road noise. Increased noise increases stress, increases predation, decreases sex activity and decreases communication. NOISE AFFECTS SAGE GROUSE POPULATIONS! Plus this mine is "in situ" in prime nesting
habitat that occurs with 2 miles of leks. The location of this
uranium mine will affect the success of the sage grouse in this CORE AREA!

Sage grouse today face many challenges to successfully breed and raise their chicks. Every state's population is in decline. Habitat fragmentation, sagebrush health, West Nile Virus, and spring storms are factors to consider. With the Lost Creek Uranium Mine, the fragmentation of habitat in this Sage Grouse Core Area will be a major factor in the success of this population.

Confirm my comments with Professor Alan Krakauer at the University of California Davis. He has been doing research on sage grouse near Hudson, Wyoming and his finding are significant. It is the BLM's responsibility to seek out all findings reached through sound science.

In our view there is no way to mitigate the impacts on the sage grouse in this core area. This uranium mine is in a core sage grouse lekking and nesting area. Whether you consider it one well pad or 43 well sites; whether you reroute the roads or bury the powerlines or whatever requirements you try to place on this mine, it is still in the nesting area of the greater sage grouse. Are we going to protect this species or not?

Sincerely,
Neil and Jennifer Miller

P.S. We also have grave doubts about how efficient the monitoring wells will be to document "excurions" and how this will prevent the contamination of our state's groundwater. Who will be left "holding the bag" if the groundwater is contaminated with this in situ leaching process?...the taxpayer and the people of Wyoming who could benefit from use of clean drinking water.

Do Not Permit The Lost Creek Uranium Project.

From: Crystal Salas On Behalf Of National Park Service
Sent: Wednesday, May 30, 2012 3:03 PM
To: BLM_WY_Lost_Crk_Mine
Subject: NO COMMENT: DES-12/0019, Lost Creek Uranium In Situ Recovery Project

Hi Dennis,

The National Park Service has no comment on the subject project.

Thank you and have a good day.

- Crystal Salas

Environmental Quality External Review Team National Park Service Intermountain Region (AZ, CO, NM, MT, OK, TX, UT, WY) IMRextrev@nps.gov

WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

Web site: http://wgfd.wyo.gov

May 30, 2012

WER 2792.04
Bureau of Land Management
Rawlins Field Office
Draft Environmental Impact Statement
Lost Creek In Situ Recovery Project
Sweetwater County

Dennis Carpenter
Field Manager
Bureau of Land Management
Rawlins Field Office
1300 N Third Street
Rawlins, WY 82301

Dear Mr. Carpenter:

The staff of the Wyoming Game and Fish Department has reviewed the Draft Environmental Impact Statement for the Lost Creek In Situ Recovery Project located in Sweetwater County. We have provided extensive comment on this project through our interactions with the proponent and our state permitting agency, the Department of Environmental Quality (DEQ). We refer BLM to the DEQ permit for information pertaining to this project regarding our concerns and recommendations for terrestrial wildlife and aquatic resources.

Thank you for the opportunity to comment. If you have any questions or concerns, please contact Scott Gamo, Staff Terrestrial Biologist, at 307-777-4509.

Sincerely,

John Emmerich
Deputy Director

JE/mf/gb

cc: USFWS
Greg Hiatt, WGFD, Lander
Daryl Lutz, WGFD, Lander

From: David Urasky
Sent: Thursday, May 31, 2012 6:46 PM
To: BLM_WY_Lost_Crk_Mine
Subject: DEIS Comment

I am writing in support of the UR Energy Lost Creek Project. I feel that this project is an important part of improving the Rawlins economy. This mine will also provide US energy resources reducing our dependency on foreign energy. I have looked at the mine location and the pilot operations and although I haven't been part of the impact study, I see very minimal impact to the environment.

Sincerely
David Urasky

CARBON COUNTY HIGHER EDU

Carbon County Higher Education Center
705 Rodeo Street
Rawlins, Wyoming 82301
(307) 328-9204 • Fax (307) 324-3338

David Throgmorton Ph.D.
Executive Director

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Kids Campus
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Rawlins, WY 82301
Ph. (307) 324-2334
Fax (307)324-2541

June 4, 2012

Lost Creek ISR Project
clo Dennis Carpenter, Field Manager
Bureau of Land Management
P.O. Box 2407
Rawlins, Woming8230l

Dear Mr. Carpenter,

Greetings from the Carbon County Higher Education Center! I am pleased to write this letter in support ofUR-Energy's Lost Creek Project. The staff at UR-Energy has been very pro-active in searching out training and educational opportunities for the anticipated labor force and has spoken to us about developing technical programs (instrumentation, for example) and on-going safety programs.

Many of us here at CCHEC have been impressed with the level of professionalism displayed by the UR-Energy team. They made a presentation at a recent Industry Roundtable sponsored by the City of Rawlins and Carbon County Economic Development Corporation and it is apparent that they are ready to move forward with a project that is using proven technologies.

This project will bring needed jobs to both Carbon and Sweetwater Counties and will be a welcomed addition to our local industrial pool. There are proven and ready markets for the DR-Energy product and we have every reason to expect this business to be a productive member of our community for many years.

I realize that there is an established procedure for evaluating the environmental and social consequences of every project and hope that this particular project can be expedited insofar as that is possible. It presents a minimal impact on the environment and the company has taken steps to ensure that its workforce is professional and safety conscious. There is no down-side to this one.

Pax,

David Throgmorton, Ph.D.
Executive Director

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Fax: (720)-981-5643

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Casper, WY 82609
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Fax: (307) 265-2801

LOST CREEK ISR, LLC

June 6, 2012

Mr. John Russell
Bureau of Land Management
Rawlins Field Office
P.O. Box 2407
Rawlins, WY 82301

Re: Submittal of Comments on the Draft EIS for the Lost Creek Project

Dear Mr. Russell,

Please find below Lost Creek ISR, LLC ("LCI") comments on the Draft EIS (DEIS) that was published on April 27, 2012 for the proposed Lost Creek in situ uranium project located in northeastern Sweetwater County, WY. LCI appreciates BLM's frequent use of the U.S. Nuclear Regulatory Commission's Final EIS in their DEIS which served to significantly shorten the still voluminous document.

LCI's comments are broken out into two categories: General Analysis (Attachment I) and Specific Comments (Attachment II). For ease of use, the Specific Comments provide the page number and paragraph to which the comment is directed.

Given the technical nature of many of the comments provided herein, LCI realizes that additional clarification may be required. Therefore, please don't hesitate to contact me if additional information or clarification is needed regarding the matters raised in this letter or other issues encountered by BLM staff as they continue the environmental review.

We look forward to the conclusion of the NEPA review and encourage your office to continue to move through the process as efficiently as possible.

Regards,

Lost Creek ISR, LLC
By its Manager, Ur-Energy USA Inc.

By: */s/ John W. Cash*

John W. Cash, V.P. of Regulatory Affairs, Exploration and Geology
Ur-Energy USA Inc.

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In order to fully capture the basis for the DEIS's alternatives analysis, the statement of BLM's purpose and need would be strengthened if it explicitly noted the Energy Policy Act's mandate that BLM "promote dependable, affordable, and environmentally sound production and distribution of energy for the future", as well as that BLM seeks to act consistent with the call for specific "significant incentives for the continuation and expansion of nuclear power in the United States." DEIS, p. 1-4. Similarly, the standard for development and analysis of alternatives could incorporate BLM's purpose and need at page 2-□□, as follows:

> With the exception of the No Action Alternative, alternatives would need to meet: 1) BLM's purpose and need of implementing the EPACT's mandate to promote dependable, affordable and environmentally sound production and distribution of energy for the future and Congress' direction to support the continuation and expansion of nuclear power in the United States, as well as making federal lands available for the production of locatable minerals consistent with FLPMA's multiple use mandate□and 2) the Project's objective of producing six million pounds of uranium over an operating period of 12 years.

Conforming text edits should be made throughout the DEIS, including at pages ES-6, 1-3 and 1-8.

II□ Consistenc□ of □L□ □Re□uire□ □easures □ith Permit to □ine

The DEIS identifies several "BLM-required measures" that BLM would incorporate into its approval. These "required measures" are described separately from the stipulations and□or mitigation measures previously incorporated into the project approvals issued by the U.S. Nuclear Regulatory Commission (the "NRC") and the Wyoming Department of Environmental □uality □ Land □uality Division (the "WDE□-L□D"). The BLM-required measures are summarized in Table 2.2-2 on page 2-□8. Lost Creek ISR, LLC ("LCI") is concerned that, especially with respect to the BLM-required measures proposed to address potential impacts to the Greater Sage-Grouse (the "GSG"), the DEIS text may introduce ambiguity regarding whether the BLM-required measures are inconsistent with those stipulations imposed by the WDE□-L□D's Permit to Mine. Of most direct concern are stipulations related to (a) time restrictions on pre-production activities and the development of mine units, and (b) the geographic footprint of the lands in which habitat mitigation can occur. While LCI does not believe BLM intended to create inconsistency between its requirements and Wyoming's, LCI does wish to avoid any confusion on this point. The record is sufficient to establish that, by adopting stipulations that are consistent with those imposed on the Permit to Mine, BLM can meet its mandate to manage for "multiple uses" in a manner that reconciles economic development and environmental considerations. Thus, for the reasons set forth below, LCI requests that the Final EIS ("FEIS") clarify that the stipulations on the Plan of Operations will be interpreted and applied to the Project in the same manner as those stipulations contained in the Permit to Mine.

It is worth first discussing BLM's overall management mandate and also discussing the extensive work that BLM, and its sister agency, the Fish and Wildlife Service (the "FWS"), have already undertaken to examine GSG issues and to evaluate Wyoming's overall management approach to the GSG. With that background, we can then turn to discussing the particular issues of concern.

Under the General Mining Laws and the Federal Land Policy and Management Act and their accompanying regulations, BLM regulates surface activities in connection with the mining of locatable minerals such as uranium under a "multiple uses" mandate that includes making minerals available to present-day economic development. Thus, BLM is guided by the fact that:

> Congress declares that it is the policy of the United States that . . . (12) the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1□70 . . . as it pertains to the public lands . . . .

43 U.S.C. Section 1701 (a). BLM is charged with implementing this policy while also preventing undue and unnecessary degradation of federal lands. 43 U.S.C. Section 1701 (a) (8) and 43 C.F.R. Section 380□.411 (d) (2). "Unnecessary and undue degradation" is defined in the regulations as "conditions, activities or practices" that:

> (1) Fail to comply with one or more of the following: the performance standards in □380□.420, the terms and conditions of an approved plan of operations, operations described in a complete notice, and other Federal and state laws related to environmental protection and protection of cultural resources□
>
> (2) Are not "reasonably incident" to prospecting, mining, or processing operations as defined in □371□.0□□ of this chapter.

43 C.F.R. Section 380□.□. In the rulemaking notice for the definition of "unnecessary or undue degradation", the Department of the Interior stated that the definition implicitly incorporates the concept of a "prudent operator":

> In effect, paragraph (1) of the definition of unnecessary or undue degradation sets forth how a prudent operator would conduct operations. Such an operator would comply with the performance standards in this subpart and other environmental protection statutes, which describe a prudent way to conduct operations to prevent surface disturbance greater than necessary. 66 Fed. Reg. □4834-01, □4838.

Thus, both through the general concept of multiple use management and through the specific regulatory acknowledgment that even a prudent operator's activities will result in some necessary surface disturbance, BLM has long-recognized the need, within its management decisions, to consider a project's commercial and operational needs before imposing environmental-related conditions.

In furtherance of achieving this balance in the most efficient manner, BLM and Wyoming have worked cooperatively for several decades on the regulation of mining activities on federal lands, including a Memorandum of Understanding executed between the State Office and the Governor of Wyoming in November 2003 (the "MOU"). The MOU is intended to prevent "duplication of administration and enforcement of reclamation regulations governing the exploration for, or mining of, minerals locatable under the Federal mining laws described in 43 CFR 380□. . . ." MOU Section B.3. The MOU provides that the WDE□-L□D and the BLM will "have lead responsibility" each in different areas, including that WDE□-L□D will take the lead in "analyzing information regarding . . . soils, vegetation, wildlife, and wetlands." MOU Section D.1.c.

The MOU, consistent with BLM's regulations governing memoranda of understanding between State Offices and states, recognizes BLM's duty to comply with the National Environmental Policy Act

("NEPA"). MOU Section D.1.d and 43 C.F.R. Section 380□.200 (b). NEPA mandates that federal agencies "prepare a detailed environmental analysis[1] □an EIS□for major Federal actions significantly affecting the quality of the human environment." An EIS must include consideration of "the environmental impact of the proposed action", "any adverse environmental effects which cannot be avoided should the proposal be implemented" and "alternatives to the proposed action." 43 U.S.C. Section 4332 (2) (C). □owever, NEPA does not mandate that a federal agency disapprove, modify or condition its approval of a proposed action due to the analysis in an EIS. *Mineral Policy Center v. Norton*, 2□2 F.Supp.2d 30, 33 (D.C. Cir. 2003).[2]

Moreover, both BLM and the State of Wyoming have addressed potential impacts to the GSG through participation in the Wyoming Governor's Sage Grouse Implementation Team (the "SGIT"), culminating in the issuance of the Wyoming Governor's Executive Order 2011-□ (the "EO").[3] The EO was developed in coordination with, and with the concurrence of, FWS.[4] The stipulations on the Permit to Mine issued by WDE□-L□D are in compliance with the EO, which includes detailed stipulations to be applied to new development in GSG "Core Population Areas" or "□ey □abitat Areas".□

In addition, BLM responded to FWS's warranted but precluded finding in both national and State Office Instruction Memoranda, both of which specifically recognize the comprehensive and appropriate GSG protections set forth in the EO, and express the intent that BLM approvals for development in Core Population Areas be consistent with the EO.

- National IM No. 2012-043 (the "National IM") sets forth "Interim Management Policies and Procedures" for BLM Field Offices to implement until the applicable Resource Management Plans are updated to address potential impacts to the GSG. □owever, the National IM specifically provides that a BLM State Office can supersede the national guidance regarding interim management policies:

  > The BLM field offices do not need to apply the conservation policies and procedures described in this IM in areas in which (1) a state and□or local regulatory mechanism has been developed for the conservation of the Greater Sage-Grouse in coordination and concurrence with the FWS (*including the Wyoming Governor's Executive Order 2011-5, Greater Sage-Grouse Core Area*

[1] An Environmental Impact Statement, or "EIS".

[2] We note similarly that, while FWS has found that listing of the GSG as threatened or endangered under the Endangered Species Act is warranted, but precluded by other priorities (DEIS, p. 3.8-26.), BLM is not required to engage in formal consultation with FWS in connection with the Plan of Operations. (16 U.S.C. Section 1□36 (a) (2) and □0 C.F.R. Section 402.14 (a)) That is especially so, given that FWS participated in developing, and has reviewed, approvingly, the Wyoming EO. See fn. 4, below.

[3] The EO is the most recent iteration of Wyoming Governor Executive Orders issued as a result of the work of the SGIT from 2008.

[4] Indeed, FWS cited the EO positively in its warranted but precluded finding, for example:

> Wyoming's executive order does allow oil and gas leases on State lands within core areas, provided those developments adhere to required protective stipulations, which are consistent with the published literature (e.g. 1 well pad per section). *The Service believes that the core area strategy proposed by the State of Wyoming in [the EO], if implemented by all landowners via regulatory mechanisms, would provide adequate protection for sage-grouse and their habitat in that State.* 7□ Fed. Reg. 13□10, 13□78 (emphasis supplied).

□ As noted in the DEIS, the State of Wyoming and BLM designate the same areas as, respectively, GSG "Core Population Areas" or "□ey □abitat Areas". (DEIS, p. 3.8-26.)

Protection) and (2) the state sage-grouse plan has subsequently been adopted by the BLM through the issuance of a state-level BLM IM. (emphasis supplied)

- Wyoming State Office IM No. WY-2012-01 (the "State IM") provides guidance to Wyoming Field Offices "in place of direction provided in . . . the National IM. . . . Specifically, this State IM addresses all BLM WY programs and provides all necessary interim program direction consistent with . . . the National IM." The State IM "is consistent with guidelines and recommendations provided for in the Wyoming Governor's Sage-Grouse Implementation Team's Core Population Area Strategy and the most recent Wyoming Governor's Executive Order . . . 2011-."

Thus, the State IM acts on the language in the National IM, adopting the GSG conservation measures in the EO in lieu of implementing the GSG interim management polices set forth in the National IM.[6]

One final point is in order as to the DEIS and its specific findings. The DEIS includes site specific analysis to determine if there are any unusual GSG issues requiring special attention, distinct from those more generally present within the GSG Core Population Area and suitably addressed through the EO-driven conditions in the Wyoming Permit to Mine. The DEIS did not identify any such site-specific project specific concerns that are not adequately addressed through the Permit to Mine conditions.[7]

In sum, as a State of Wyoming approved operator, LCI will be complying with a carefully developed and vetted state EO. That EO and the GSG strategy it embraces have been reviewed by, cooperatively developed with, and endorsed by both BLM and FWS. Thus, there is a sound foundation to conclude that the Wyoming-imposed conditions are sufficient to mitigate potential impacts of concern.[8] Moreover, nothing in the site-specific DEIS leads to a contrary conclusion, especially as to the conditions more fully discussed below. Thus, LCI, if subject to the Wyoming

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[6] We note that the State IM was issued on February 10, 2012 Lost Creek's Plan of Operations was submitted in November 200. The State IM states that a request by BLM to amend a "submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of acceptance of the notice or approval of the plan of operations."

[7] The Project is located on BLM-managed federal lands within the jurisdiction of two Field Offices: the Rawlins Field Office and the Lander Field Office. The Rawlins Field Office has identified regional variations in the appropriate time periods for seasonal restrictions (DEIS, p. 2-8) however, these variations are based upon "bird behavior within the Rawlins Field Office area", not specific characteristics of the area proposed for the Plan of Operations. A portion of the BLM-managed lands proposed for the Plan of Operations, however, is governed by the Lander Resource Management Plan, which does not contemplate such extended seasonal limitations. Moreover, even if the Rawlins Resource Management Plan is relevant to the Project lands not within the Rawlins Field Office's territory, there is no record justification for applying such Rawlins-area extended seasonal restrictions based on "bird behavior within the Rawlins Field Office Area" to Project lands outside that area. In addition, the DEIS does not include Project-specific data and information supporting the extension of the seasonal restrictions based on "bird behavior within the Rawlins Field Office Area" mandated by the State IM provision allowing for the extension of seasonal restrictions. For these reasons, it is not clearly established that the extension of seasonal restrictions is appropriate.

[8] We note that the Wyoming Environmental uality Council rejected an administrative challenge to the Permit to Mine brought by the Wyoming Outdoor Council. In doing so, it found that the Permit to Mine's stipulations regarding protections for the GSG conform to the EO. (State of Wyoming, Department of Environmental uality, Environmental uality Council Finding of Facts, Conclusions of Law and Order filed on October 6, 2011.)

Permit to Mine conditions, will meet BLM's "prudent operator" standard and BLM's associated standard of avoiding "unnecessary and undue degradation."

With this overall background, we turn now to several items identified in the DEIS as possible BLM-required measures for the Plan of Operations, and which are potentially inconsistent with the EO-mandated stipulations on the Permit to Mine. DEIS, pp. 2-□, 2-□8, 4.□-□ and 4-28 □4-31.

- First, the seasonal restrictions apply to the commencement of initial construction activities. □owever, it is important to be clear that such activities may be continued through the period of the seasonal restrictions, provided that they are commenced prior to the annual beginning of the seasonal restrictions, as is explicitly allowed by the Permit to Mine.
- Second, and also with respect to application of the seasonal restrictions to the Project, the EIS and any final agency actions approving the Plan of Operations should be further revised to make clear that "production" and□or "production activities" are defined in the DEIS to include the full range of commercial operations involved in development of mine units, including but not limited to delineation, production, injection, monitoring and observation well drilling activities, exploration drilling within the mine unit area, installation of the header houses including well controls and distribution plumbing, construction of secondary access roads (and associated culverts), and construction of secondary transmission lines. The Permit to Mine is clear on this point, and clearly defines all surface disturbance within the mine unit areas as production activities that are exempt from seasonal restrictions.
- Third, the "Adaptive Management" measures described in the DEIS do not explicitly contemplate the possibility of off-site habitat enhancement, as is allowed under the Permit to Mine. All final agency documents should clarify that such off-site habitat enhancement will be an acceptable adaptive management strategy.

III□ □on□□ □□lication of Seasonal Restrictions to Initial Construction □nce Commence□

As to the application of the seasonal restrictions to the Project, it is important to distinguish between: (1) exploration activities and (2) initial facility construction. Initial facility construction includes, but is not limited to, construction of the processing plant, driller's shed, maintenance building, main and secondary access roads, holding ponds, fencing, power lines, main trunk lines and the drilling and piping associated with the first mine unit. With regard to initial construction, the Permit to Mine provides that such initial construction may not be commenced during the period of seasonal restrictions (sometimes referred to in the Permit to Mine as "timing restrictions"). □owever, initial construction commenced prior to the annual start of the seasonal restrictions period may continue through the seasonal restrictions period. Permit to Mine Table OP-A6-1, Stipulation 6b: "Facility construction will not be initiated from March 1□ to June 30." Per the August □th WGFD email (Addendum OP-A6-A), drilling and construction activities within the monitor well ring will continue year-round but will not be initiated during the timing restriction. The reasoning behind this approach to the seasonal restrictions is simple □ the purpose of the restrictions is to minimize disturbance to GSG nesting□brooding areas. □owever, to the extent that initial construction is commenced prior to the annual beginning of the seasonal restrictions period, GSG will not begin nesting in the nesting□brooding areas sought to be protected. Thus, there would be no GSG benefit to halting initial construction activities already established at the beginning of the seasonal restrictions period.

The WDE□-L□D has determined that this application of the seasonal restrictions is consistent with the EO and the Core Population Area strategy. Therefore, LCI requests that the DEIS be clarified to

provide that construction initiated prior to the annual beginning of the seasonal restrictions may continue through the seasonal restrictions period.

I□□□on□□□□lication of Seasonal Restrictions to Pro□uction □cti□it□ □□ine □nit De□elo□ment□

The application of the seasonal restrictions to development of the mine units is also explained in detail in the Wildlife Plan. The Wildlife Plan subjects Exploration Activities to the seasonal restrictions but does not so limit development of the mine units: "□□he *delineation* and subsequent *installation* of the mine unit□s□. . . will occur year round." Permit to Mine □ Wildlife Plan, pp. 2-3 (emphasis in original). Wyoming has already concluded, consistent with the EO, that such activity accords with the Core Population Area strategy. Development of the mine units includes, but is not limited to, all associated delineation drilling, installation of associated wells, installation of power lines, installation of header houses, and installation of roads associated with a mine unit.

Nor can the development of mine units be subject to seasonal restrictions without fundamentally impacting the Project. As noted in the Permit to Mine, the successive and progressive development of mine units along the length of the uranium deposit is analogous to the progressive removal of topsoil in surface mining operations. Permit to Mine □ Wildlife Plan, pp. 3. In order to maintain this successive development program through an economically viable mining operation, it is necessary to lease sufficient drilling rigs from third parties, as well as their trained crews, and engage other personnel, to insure that progress is regularly occurring on a steady pace, not a "start□stop" pace. The imposition of seasonal restrictions on the development of mine units would render it extremely difficult, if not impossible, to secure the drilling rigs, crews and other personnel needed. Such resources are not likely to be available, or available only at a significantly greater cost, if only sought for a restricted, seasonal production schedule.

Indeed, the DEIS acknowledges this very constraint related to equipment and personnel availability. In discussing the "Portable Drill Pits" alternative (considered but eliminated from further analysis), the DEIS states "□with respect to logistics, rig and driller availability have been at a premium in Wyoming, and the specialized equipment □required for this alternative□would further restrict the equipment and contractor availability and would increase costs." DEIS, p. 2-80. Similarly, the DEIS also rejected, on grounds of economic unviability, the "Phased Development of Mine Units" alternative which proposed that mine unit development be suspended until "groundwater concentrations and□or vegetation reestablishment criteria" were met for prior mine units developed. DEIS, pp. 2-84-2-86. In doing so, it correctly noted that

> this alternative (groundwater concentrations and□or vegetation reestablishment criteria as the basis for the phases) would not be economically efficient and would constrain some of the available technical options for more efficient mining and groundwater restoration. Most mining projects require a relatively high initial outlay of capital. □owever, subsequent operations are a balance of income (mining) and expense (operating, maintenance, and reclamation) throughout the life of the mine until the final removal of the mine facilities. With this groundwater and□or vegetation criteria alternative, the Project would alternate between periods of income and expense (during mining) and just expense (during restoration), which would be contrary to the requirements for other mining operations, e.g., coal, in which contemporaneous reclamation is required, but not complete closure of one mine pit before starting another. In addition, this alternative would result in idling of the Plant for some periods of time, which would require additional expense and resources (e.g., resin replacement) for temporarily □mothballing' and then restarting the Plant.

Moreover, even in the event that rigs, crews and other personnel could be secured for a partial production schedule, in order to maintain economically viable production levels, it would be necessary to develop the mine units at a greater density than currently contemplated. In turn, increasing the density of production activities during a constricted production schedule could increase the risk of production accidents for both workers and the environment. Thus, not surprisingly, the DEIS similarly correctly rejected an alternative that would have resulted in a larger number of smaller mine units operating simultaneously, concluding that (DEIS, p. 2-84):

> Based on the aquifer testing conducted by Lost Creek. . ., the ore distribution in the J Sand . . ., operational feasibility, and WDE-LD regulatory review, three mine units are currently considered the best approach to efficient mining and resource protection. Initially, the Project included six mine units in the same area as the three mine units. owever, as described in Project Development of the Adjudication File of the WDE-LD Permit to Mine . . ., consolidation to three mine units was considered more appropriate.

In summary, imposing seasonal restrictions on Production Activities threatens the Project's economic viability, potentially converts the Project into something other than what LCI has applied to do, and actually threatens to cause greater environmental impact and risk by compressing both chronologically and spatially the Production Activities that will occur. Accommodating such concerns is expressly provided for by BLM's policies, even where GSG are concerned. The GSG has been designated by the Wyoming State Office as a Bureau sensitive species. IM No. WY-2010-027, "Update of the Bureau of Land Management, Wyoming, Sensitive Species List 2010." BLM Manual 6840, which governs "Special Status Species Management", directs BLM to "prioritize Bureau sensitive species and their habitats for conservation action based on considerations such as human and financial resources availability, immediacy of threats, and relationship to other BLM priority programs and activities." The EO, likewise, seeks to balance conservation of the GSG with potential impacts on Wyoming's economy. The balance struck in the EO, endorsed by FWS and imposed by Wyoming as stipulations on the Permit to Mine, does not impose seasonal restrictions on Production Activities, *i.e.*, the development of mine units, and BLM ought not do so either. For clarity, exploration drilling outside the mine unit area, regardless of when initiated, may not continue during the seasonal restrictions.

Therefore, LCI asks that the FEIS clarify that (1) the development of mine units, including delineation, production, injection, monitoring and observation well drilling activities, exploration drilling within the mine unit area, and installation of header houses with well controls and distribution plumbing is included within "production activities," and (2) the seasonal restrictions do not apply to all surface disturbance activities within the identified mine unit areas, for example the development of mine units, including but not limited to delineation, production, injection, monitoring and observation well drilling activities, exploration drilling within the mine unit area, installation of header houses with well controls and distribution plumbing, construction of secondary access roads and associated culverts and construction of secondary transmission lines.[1] Such clarifications are consistent with providing appropriate environmental protection while also allowing the Project to move forward in an economically sound fashion.

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[1] The clarification requested throughout the text of the DEIS, including, but not limited to, at pages ES-4, ES-2-2-8-2-12-2-14-2-1-2-3-2-4-2-46-table 2.1-2-4.1-1-4.3-8-4.7-17-4.8-4.-22-4.10-2 and 4.12-2.

□□ □ff□Site □abitat Enhancement

Regarding the adaptive management plan, the DEIS's discussion of habitat enhancement as a protective measure for the GSG is not clear with respect to whether off-site (*i.e.*, outside the Permit Area) habitat enhancement may be considered. DEIS, p. 4.□-□. As provided for in the Permit to Mine, enhancement of habitat in a buffer region outside the Permit Area is specifically approved. Permit to Mine □ Wildlife Plan, p. 28. LCI believes this degree of flexibility is appropriate and would, in fact, further BLM's conservation goals for Bureau sensitive species, as provided for in BLM Manual 6840. As the Manual explains, BLM's goals include "improv□ing□the condition of the species' habitat on BLM-administered lands." BLM-administered lands extend more broadly than the Permit Area itself. Therefore, LCI requests that the FEIS clarify that habitat enhancement may take place outside the Permit Area as an additional protective measure.

□I□De□elo□ment of the □echnical □□□isor□ Committee

In addition to these areas of potential discrepancy between the Permit to Mine and the stipulations described in the DEIS, LCI notes that the description of the technical advisory committee (the "TAC") could be clarified in the following areas:

- The substantive standards for decision making by the TAC are not clear regarding what constitutes a "downward trend".
- A dispute resolution□appeal process should be incorporated in the event the TAC does not reach consensus, for example over whether an impact threshold has been reached or the necessity of imposing specific additional protective measures.
- The description of the monitoring program is not clear regarding the relationship of the geographic areas to be monitored, the leks to be monitored and the standards by which monitoring programs are to be evaluated by the TAC.

□II□ Disturbance □ear E□hemeral Draina□es

The DEIS states on page 4.6-1, *"The BLM would require that surface disturbing activities be avoided within 100 feet of the inner gorge of ephemeral channels."* LCI is concerned about such a restriction since it will create a 200 foot wide buffer around all ephemeral drainages in which uranium recovery could not occur. Depending on what constitutes an ephemeral drainage, this restriction could prevent the recovery of a significant portion of the mineral resource and presents a significant deviation from the Plan of Operations submitted to the BLM.

The purpose for such a restriction is unclear since there is little precipitation and therefore very little run-off capable of causing erosion. Further, the drainages passing through the project area discharge to Battle Spring Flat which is generally a dry playa with limited vegetation and wildlife. Even if minor sedimentation occurred in the ephemeral drainages there would be little to no impact on any waters of the state or associated plant life and wildlife. The DEIS lists a total of four "Impact Significance Criteria" in Section 4.6.3 that were used to assess the significance of surface water impacts. It is unlikely that drilling near or even within an ephemeral drainage would result in an impact to any of the four criteria listed.

Therefore, LCI requests that the BLM do the following. First, please clarify what constitutes an ephemeral drainage that would fall under any restriction, mindful of the likely limited impact that any sedimentation would have. Second, revise the restriction to allow surface disturbance activities which are further than 20 feet from the inner gorge of ephemeral drainages along with adherence to

the Best Management Practices described in the Storm Water Pollution Prevention Plan. Third, maintain the provision for limited exemptions to the stipulated distance on a case by case basis as is already provided for in the DEIS.

Also, the DEIS, on page 4.6-3, provides a bullet list of actions that will be taken if it is necessary to place a well in or near an ephemeral drainage. The second bullet includes removing the cuttings from the pit upon completion of the drilling. Since these cuttings are not toxic or acid forming it is unclear why it would be necessary to remove them. The pit would be backfilled as per normal procedure and the topsoil reapplied and revegetated. Removing the cuttings would create the problem of waste disposal and potentially greater disturbance. LCI recommends that this requirement be removed.

□□□□C□□E□□ II
S□ecific Comments

1. The BLM uses the terms exploration and delineation drilling throughout the DEIS. These two terms have distinctly different meanings which should be defined early in the document for the lay reader. Exploration drilling generally (but not always) occurs beyond the confines of the defined mine units with the goal of locating previously unknown mineralization or oxidation□reduction boundaries. The spacing of exploration drilling is generally 100 to 3,000 feet. Delineation drilling generally occurs within defined mine units with the goal of increasing knowledge about a known mineralized oxidation□reduction front. The spacing of delineation drilling typically ranges from □0 to 200 feet.

2. Pg. ES-1, Para. 2. The DEIS states the distance to a highway is about 30 miles. State □ighway 73, which terminates in Bairoil, is only about 21 miles to the plant site by road or 17 miles straight line distance. Please revise the distance accordingly.

3. Pg. ES-2, Para. 2. The DEIS states the NRC issued a "Material" license. The license should be referred to as a "Source and Byproduct Material License." The same item needs corrected at Pg. 1-3, Para. 2. The remainder of the document refers to the license in its proper context.

4. Pg. ES-□, Para. 3. The DEIS states *"About 2 acres of the Plant would be fenced…"* The fence around the plant will encompass about ten (10) acres and not 2. The same item needs corrected on Pg. ES-6, Para. 2.

□. Pg. 1-4, Para. 2. The DEIS states there will be no drainage diversion□however, this is incorrect and inconsistent with the remainder of the document. There will be minor drainage diversion in the area of the holding ponds (see Fig. 2.1-3 and Sect. 4.6.1.1 on Pg. 4.6-3 Para. 1). Please revise the language to clarify there will be minor drainage diversion.

6. Pg. 1-10, Sect. 1.4.3. Para. 2. The DEIS states the BLM may request a license amendment or permit revision. While the BLM may make such a request, the WDE□-L□D and the NRC retain their authority and have no requirement to approve such a request. LCI recommends that the language in the DEIS be revised to clarify the NRC and WDE□-L□D retain their individual authority and are not required to act upon a recommendation from the BLM and to clearly indicate that BLM's impact analysis, and any approvals to the Plan of Operation, are not dependent on such further action.

7. Pg. 2-□, Para. 1. The DEIS states the plant would be capable of processing 6,000 □**oun□s** □□□ □**er** □**a**□. We believe the author meant to say the plant would be capable of processing 6,000 □**allons** □**er minute**. Please correct the units to gallons per minute (gpm).

8. Pg. 2-1□, Para. 3 of Sect. 2.1.3.1. The DEIS states, *"…a wellhouse (cumulatively requiring about one acre)."* The well house will require less than 0.2 acres including the pullout drive. Please correct the language to reflect this smaller area.

□. Pg. 2-1□, Para. 2. The DEIS states "Carbon dioxide would be added either at the Plant and□or at the header houses." Carbon dioxide may or may not be used based on the need to adjust p□. □owever, if carbon dioxide is added, it would be added at the Plant and not the header houses. Please revise the DEIS to clarify the carbon dioxide injection point.

10. Pg. 2-20, Para. 2. The DEIS states *"The rinse water would be collected, treated, and the waste discharged to the Storage Ponds and UIC Class I wells."* In fact, the rinse water would be 100□ recycled back into the process. Please revise the text to reflect that the water will be recycled.

11. Pg. 2-22, Para. □. The DEIS states *"Production wells would be open at the surface; however, water levels would typically be low and radon venting would be minimal."* Production well heads will be sealed, especially during operation, so radon gas emission will be non-existent during operations and virtually non-existent during maintenance.

12. Pg. 2-2□, Para. 1. The DEIS states well abandonment will be accomplished with truck mounted rigs. LCI requests that hose reels and pulling units be added as viable options for well abandonment.

13. Pg. 2-47, Table 2.1-2. The table states that the meteorological station will be maintained until the plant is decommissioned. □owever, the meteorological station will be removed as soon as the NRC grants approval to do so. Please clarify that the station will be removed upon NRC approval.

14. Pg. 2-61, Para. 4. The DEIS states that the dryer packaging area will have a dust collection system consisting of a bag filter. □owever, other types of filters may be used to collect dust including □EPA, cyclone, etc. Please revise the DEIS to reflect that other dust collection systems are allowable. Also, air from the area dust collector system won't be routed to the dryer off-gas line and scrubber. Instead, a stand-alone filtration system will be used to remove particulate from the air. Using an independent system will allow for better employee protection and flexibility. Please revise the DEIS to allow for the use of a stand-alone dust collector system.

1□. Pg. 2-7□, Table 2.3-1. The row heading *"Liquid 11(e)(2) Byproduct Materials*" says the *"Disposal of up to 115 gpm in UIC Class I wells permitted on site."* The flow rate of 11□ gpm is anticipated but the actual permitted rate is 2□0 gpm. Please clarify that the rate is an anticipated rate and not a permitted rate.

16. Pg. 2-82, Para. 1. The DEIS states, *"The production bleed would generate approximately 100 gpm."* Please revise the language to reflect that the production bleed would generate between 30 and □0 gpm. Combined with restoration discharge, it would approximate 100 gpm.

17. Pg. 3.2-4 refers to Figures 2.2-1 and 2.2-2. It appears the reference should be to Figures 2.3-2 and 2.3-1 instead.

18. Pg. 3.8-26, Sect. 3.8.3.2, Para. 2. The DEIS states that LCI was a member of the Sage Grouse Implementation Team (SGIT). LCI wishes to clarify that the company wasn't a part of the SGIT. □owever, on approximately two occasions, an LCI employee served as a substitute member when the regular member who represented the uranium industry could not attend.

1□. Pg. 3.8-48, Para. 2. The DEIS states the anticipated disturbance will be approximately 330 acres. □owever, in other locations of the DEIS the acreage total is presented as 34□ acres. While the difference is very minor, please conform all references to the correct disturbance acreage.

20. Pg. 3.14-16, Para. 2. The DEIS refers to Table 3.14-6 in regards to mineral production. This appears to be an incorrect reference. Please clarify which table the reader should turn to.

21. Pg. 4.2-1, Para. 1. The DEIS states that the Project would conform to the land use regulations of Carbon County. □owever, since none of the Project is in Carbon County there will be no need to comply with their land use regulations. Please remove Carbon County from the language.

22. Pg. 4.2-1, Sect. 4.2.1, Para. 3. The DEIS refers to Section 4.3.11 as being about Air □uality. □owever, it appears the correct reference would have been 4.11.

23. Pg. 4.3-1, Sect. 4.3.1.2. The DEIS states that LCI will work with both Carbon and Sweetwater Counties to develop road maintenance agreements. □owever, LCI intends to develop a road maintenance agreement only with Sweetwater County. LCI anticipates that such an agreement will only address snow removal activities. LCI has already received the necessary Access Permit that will allow the connection of the West Access Road to the Wamsutter-Crooks Gap road. Please revise the language to reflect that LCI will only need a road maintenance agreement with Sweetwater County.

24. Pg. 4.3-□, Table 4.3-1. Under the column heading *"To/From Site/Heavier Equipment"* and the row heading *"Equipment, Supplies, and Waste Hauling"* the units on the count should be per day instead of per week.

2□. Pg. 4.3-8, Sect. 4.3.4.1, Para. 1. The DEIS states that some tankage will be brought in by rail road. The facility tankage is small enough to bring in by truck from the manufacturers. Please strike the sentence regarding the use of rail roads or revise it to discuss delivery by trucks.

26. Pg. 4.4-4, Para. 3. The DEIS states the aquifer pressure will be increased during production. For clarification, the pressure will only be increased locally (at injection wells) and decreased locally (near production wells). □owever, overall, the pressure of the aquifer will be decreased because more water is being removed than being injected (bleed).

27. Pg. 4.□-10, Para. 4. The DEIS claims that the wind erosion of roads is the source of *"a significant percentage of silt…"* This seems unlikely given the paucity of roads in the area. Please provide a source for this statement. Did the author intend to convey that the roads are the source of most dust in the area□

28. Pg. 4.6-4, Sect 4.6.1.2, Para. 1. Please clarify that the perimeter and interior berms pertain to the Plant as per the Plan of Operations.

2□. Pg. 4.7-1, Sect 4.7-1, Para. 1. The DEIS states, *"To provide additional monitoring data on Stabilization (Section 4.7.1.1) for on-going reviews of regulatory requirements (EPA, 2011b), at least two additional stability monitoring samples would be collected, once every three months over a six-month period, after the initial stability period."* LCI believes it is inappropriate for the BLM to amend a sampling plan in a DEIS for the purpose of collecting information for another regulatory agency (EPA) on the basis that such additional information may be used to support a future rule making. If the EPA desires such information, they should address this issue through the NRC, which utilizes EPA standards to regulate in situ facilities, or they should promulgate regulations addressing their concerns. The EIS process was neither intended nor designed to serve as a mechanism to change regulations. Therefore, LCI respectfully requests that all language requiring the collection of additional stability samples be removed from the

EIS. LCI proposes to follow the long-standing requirements of the WDE□-L□D Division which are described in the Plan of Operations. It is also noteworthy that the EPA has issued an aquifer exemption for the mining zone at Lost Creek which, as far as EPA regulations mandate, does not require any groundwater restoration or subsequent stability monitoring.

The same issue is brought up again on Pg. 4.7-7, Sect. 4.7.1.1 at the end of the second paragraph and should be removed from the EIS.

30. Pg. 4.7-2, Sect. 4.7.1.1, Para. 3. The language in the second line is unclear when it refers to the *"depth to the in the DE Horizon."* Also, impacts to the DE aquifer would not be high and long-term since regulations would require the immediate and complete restoration of any affected groundwater. LCI requests that the language be revised to make it clear that the impact would be limited and quickly corrected pursuant to regulation. The same issue is presented on Pg. 4.7-20, Sect. 4.7.□.2 and Pg. 4.7-33, Sect. 4.7.7.2, Para. 2 and should be revised.

31. Pg. 4.7-11, Sect.4.7.2.2. The DEIS requires sampling of four regional BLM wells as shown in Figure 3.6-1□. Of these four wells, only two wells, BLM Battle Spring Well 44□1 and BLM Battle Spring Well No 4777, are near enough to the proposed operation and in a generally down-gradient direction that their water quality could be impacted. Two of the four wells, BLM Boundary Well No. 4774 and BLM East Eagle Nest Draw Well are up gradient of the wellfields and greater than a mile away. Given that the groundwater moves only a few feet per year in this area it would take over a hundred years for any undetected contamination to reach either well (and then only if the water can flow against the gradient). Therefore, LCI requests that the EIS require sampling of only two of the wells (BLM Battle Spring Well 44□1 and BLM Battle Spring Well No 4777).

32. Pg. 4.7-21, Sect. 4.7.□.3. The last paragraph describes the final disposition of water generated from the UIC Class I Wells. LCI requests that off-site or on-site disposal of the fluid in another Class I Well be added to the list□especially since recycling the water as drill fluid is unlikely due to water quality concerns. Further, the language should also contemplate the use of other disposal techniques that may not currently be apparent. Please add language allowing for the disposal of fluids using other techniques that are compliant with all applicable regulations.

33. Pg. 4.7-28, Sect. 4.7.6.2, Para. 2. The DEIS states the liner thickness will be 41 mm thick. The units should be in mils which is a thousandth of an inch.

34. Pg. 4.□-2, Sect. 4.□.1.2, Para. 1. The DEIS, as well as the Plan of Operations, states that Type I fencing will be used around the holding ponds. Type I fencing is too short to preclude deer, antelope and elk. Therefore, LCI requests that the fencing type be upgraded to Type II.

3□. Pg. 4.□-3, Sect. 4.□.1.3. The DEIS states the purpose for the burial of tertiary electric lines is for raptor protection. LCI wishes to clarify that the primary reason these lines are buried is for employee safety. Raptor protection is a secondary benefit.

36. Pg. 4.□-14 and 4.□-1□. The bulleted text describing the sage grouse monitoring moves from past tense to future tense. Please clarify the language.

37. Pg. 4.10-4, Para. 3. The DEIS states, *"…spills around wellheads and leaks from pipelines could expose wild horses to toxic chemicals."* This statement could be more accurate by

stating spills may contain **trace** quantities of toxic chemicals. Sect. 4.10.□.2 contains similar language and LCI requests that both statements be clarified.

38. Pg. 4.1□-2, Sect. 4.1□.4.1. The DEIS spends considerable time discussing numbers of employees and contractors during various stage of the project. It is unclear that these numbers are consistent with those presented in the Plan of Operations. Please verify that the FEIS conforms to the numbers presented in the Plan of Operations or provide an explanation of the differences.

3□. Pg. 4.17-4, Para. 4. The DEIS states that the NRC requires monitoring of mud pits. Since the cuttings are not considered source or byproduct material, the NRC does not require monitoring. Please delete the final sentence since it isn't accurate.

40. Pg. 4.18-7, Para. 1. The DEIS states waste will be stored in super-sacs. While this is generally true, NRC and Department of Transportation regulations also allow waste to be stored in other strong, tight containers. Please revise the EIS to allow for waste storage in strong, tight containers.

41. Pg. □-24, Section □.18. This section seems to end mid-sentence.

BOARD OF COUNTY COMMISSIONERS

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Wednesday, June 06, 2012

John Russell, Project Manager-Renewable Energy
DEIS – Lost Creek ISR Uranium Project
BLM – Rawlins Field Office
P.O. Box 2407
Rawlins, WY 82301-2407

RE: Sweetwater County's Comments Regarding the Draft Environmental Impact Statement for the Lost Creek ISR Project

Dear Mr. Russell:

The Sweetwater County Board of County Commissioners (Board) would like to thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Lost Creek Energy ISR Project. Since mineral development provides approximately 75 percent of the County's economic base that supports the high quality of life that is enjoyed by the residents of Sweetwater County, the Board welcomes the Lost Creek ISR Project to the County.

To ensure that the National Environmental Policy Act (NEPA) review of the Lost Creek ISR Uranium Project is completed in a manner that complies with Sweetwater County's goal to "Encourage a balance between resource development and environmental protection", Sweetwater County's offers the following comments for inclusion into the EIS:

Sweetwater County Permits and Authorizing Actions: Sweetwater County greatly appreciates Lost Creek ISR, LLC's efforts in obtaining the necessary Sweetwater County Zone Change and Development Plan approvals, and their commitment to the 15 conditions of approval which included the conditions that: the development plan is approved contingent upon all applicable Local, State and Federal Agency approvals, and that any changes to the Development Plan that occur after Sweetwater County's approval shall be submitted to the Land Use Department for evaluation to as to their significance and need for further review and process by Sweetwater County.

Even though Lost Creek ISR, LLC (Lost Creek) has obtained the required Development Plan and Zone Changes from Sweetwater County, they may have to amend these permits if they are required to move their plant site and other extraction facilities to accommodate existing designated Sage Grouse Core Areas. If amendments are required, Lost Creek should contact Eric Bingham, Land Use Director at 872-3916 to discuss this process.

To assist the BLM and Lost Creek in further identifying the Sweetwater County authorizing action related to this project, Sweetwater County has provided the table found on the next page.

Table of Authorizing Agencies	
Contact	**Action**
Eric Bingham Land Use Director 307-872-3916	Development Plan and Construction/Use Permits. Conditional Use Permits - required for man camps, construction yards, storage of explosives and radioactive materials. All conditions of Resolution 09-12-ZO-01. Zone Change and Development Plan Amendments - May have to amend permits due to sage grouse core areas. County Zoning Requirements.
John P. Radosevich Public Works Director 307-872-3921	County Road Crossings and Access Permits. Road Use and Maintenance Agreements. Grading Permits.
Chuck Sykes Director of Environmental Health 307-872-3933	Small wastewater permits
Dave Johnson Emergency Management Coordinator 307-922-5369	Recordation of Hazardous Material Storage
Jim Zimmerman Code Enforcement Specialist 307-872-3923	International Fire Code Enforcement
Gale Lamb Supervisor, Weed and Pest 307-874-6107	Noxious Weed Control

Sweetwater County Roads: The following county road issues should be addressed:

Road Use and Maintenance Agreement: Prior to the BLM's Authorization of the Lost Creek ISR Project, Sweetwater County requests that the Developer prepare and submit a Road Use Maintenance Agreement for County review and approval. This Road Use Maintenance Agreement must meet the standards and conditions of the Sweetwater County Public Works Director, the Sweetwater County Attorney's Office and the Sweetwater County Board of County Commissioners. Some of the issues that must be addressed by this road use and maintenance agreement include: roadway maintenance, surfacing, dust control, weight limits, traffic, snow removal, migration measures, improvement construction, and others.

County Road Crossing and Access Permits: Any crossing, access to, or utilization of a Sweetwater County Road right-of-way requires an Access Permit or License from the Sweetwater County Department of Engineering. Project developers are required to contact the Sweetwater County Public Works Director to obtain necessary roadway permits prior to development.

Work Camps: The Sweetwater County Comprehensive Plan - 2002 encourages "... the location of associated worker housing within existing communities where services are/can be provided." If a compelling need can be demonstrated, a work camp may be permitted through the Sweetwater County Conditional Use Permit process. This permitting process takes 60 to 90 days to complete and is administered by the Land Use Department.

Intergovernmental Cooperation and Community Impacts: Sweetwater County Comprehensive Plan - 2002 encourages cooperative interaction between local, State and Federal agencies. With this goal in mind, Sweetwater

County encourages the BLM and Lost Creek to continue their efforts in soliciting comments from the Towns of Wamsutter and Bairoil and proactively address their concerns with the Environmental Impact Statement process. Also important to Sweetwater County is consideration of project impacts to our neighbors Carbon County and the City of Rawlins. Community concerns that should be considered include: housing, school capacity, traffic patterns (especially for heavy equipment and supplies being transported through communities), law enforcement, health service and other public services.

Free on Board (FOB): Sweetwater County encourages the BLM, to the greatest extent possible under the BLM's authority, to encourage Lost Creek and its contractors and subcontractors to deliver construction materials "Free on Board" (FOB) to the County in which the materials will be utilized. This will help ensure that the sales tax will be properly allocated and paid to the County where construction and related impacts will occur.

Protection of Natural Features:

Historic and Cultural Sites: The Sweetwater County Comprehensive Plan - 2002 calls for the County to "Identify and protect the County's unique cultural, recreational and environmental resources" and to "Encourage a balance between resource development and environmental protection". With these goals in mind, Sweetwater County appreciates the BLM's efforts in inventorying and planning for impacts that may occur to historical and cultural resources. Sweetwater County supports these planning efforts and the protection of these important resources, but at the same time Sweetwater County strongly encourages the BLM to carefully consider and balance how the protection of Historic and Cultural Sites will affect the ability of Lost Creek to develop and utilize their resources for economic gain. Sweetwater County's economy depends on mineral extraction, which makes it important that the preservation of Historic and Cultural Sites occur in a balanced manner that also protects the viability of this project and the economy of Sweetwater County.

Wildlife: Sweetwater County supports the State of Wyoming Sage Grouse Core Area Program, and appreciates that the BLM and Lost Creek are planning Alternatives that will comply with this program.

Again, Sweetwater County strongly supports the Lost Creek ISR Uranium Project, and if you have any questions regarding Sweetwater County's above comments related to this project's Draft EIS, please contact me at 307-872-3890.

Sincerely,

Wally J. Johnson, Chairman
Sweetwater County Board of County Commissioners

cc Jerimiah Rieman, Governor's Natural Resource Policy Advisor
John Ruhs, BLM High Desert District Manager
Dennis Carpenter, BLM Rawlins Field Office Manager
Sweetwater County Board of County Commissioners
Temple Stoellinger, WCCA Natural Resource Attorney
Kent Connelly, President - Coalition of Local Governments
Mary Thoman, President - Sweetwater County Conservation District
Eric Bingham, Sweetwater County Land Use Director
John Radosevich, Sweetwater County Public Works Director

Wyoming
BUSINESS COUNCIL

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June 6, 2012

Mr. John Russell
Bureau of Land Management, Rawlins Field Office
Lost Creek DEIS Comment
P.O. Box 2407
Rawlins, WY 82301

Dear Mr. Russell:

The Wyoming Business Council would like to offer our support for the Lost Creek ISP proposed uranium *in situ* recovery project in Sweetwater County approximately 40 miles northwest of Rawlins, Wyo. We encourage the BLM to move the process along as promptly as possible to enable the beginning of the hiring, construction and production for the project, bringing additional economic activity to the area.

It is our understanding that the Lost Creek *In Situ* Uranium Recovery Project area contains approximately 4,250 acres within the project boundary, with no more than 345 acres actual surface disturbance when approved by BLM. Most of the surface disturbance would be related to construction of the well fields used to extract the uranium from the site. Ur-Energy is currently advancing the Lost Creek Project through the permitting process. We understand that to date, the U.S. Nuclear Regulatory Commission and the Wyoming Department of Environmental Quality have granted approval for the Project. The U.S. Bureau of Land Management (BLM) is continuing its review with an anticipated completion date in the summer of 2012.

The project will have significant impact on the State's economy through the development of the field and the related job creation. Construction at the Lost Creek Project is scheduled during the summer of 2012 followed by production in the spring of 2013. Ur Energy will employ 60 full time employees with an additional 40 contract employs to support the operation. The Preliminary Economic Assessment for the Lost Creek Project shows that the field will generate net earnings over its life, before income tax, of $283,000,000 from the projected production of 7.38 million pounds of U_3O_8. In addition, the total cost of uranium production including all required capital spending is estimated at $36.52 per pound.

This Project will have a significant positive impact on the region and state economy and will expand the production of one of our important and abundant energy resources for the benefit of Wyoming and the nation. Thank you for the opportunity to comment.

Sincerely,

Robert K. Jensen
Chief Executive Officer

RKJ/PR: lsh

From: Chris P
Sent: Friday, June 08, 2012 9:57 AM
To: BLM_WY_Lost_Crk_Mine
Subject: support for mine proposal

To whom it may concern,

The proposed uranium mining operation will be a positive contribution to Wyoming. I think the project should be approved.

Chris Pedersen

From: Benda, Ron
Sent: Monday, June 11, 2012 9:59 AM
To: BLM_WY_Lost_Crk_Mine
Subject: DEIS Comment

Dear Sirs:

I have read the Executive Summary of the Draft DEIS. It appears to me that Ur-Energy has complied with all rules and regulations and laws for county, state and federal Permits and has obtained all necessary documents to begin producing uranium with the exception of the BLM Plan of Operations. Ur-Energy has collected years of baseline data and provided this information to all state and federal agencies as part of the Permitting process. Additionally, the public has had many opportunities for comment dating back to 2006. The myriad requirements, studies, hearings, etc. boggle the imagination.

The conclusions reached by the BLM state that:

"the Project is unlikely to have adverse effects on public health, welfare, and safety because of the monitoring and protections required by the NRC and other agencies. Adverse socioeconomic impacts, e.g., excessive housing demand, would be minimal because of the relatively small size of the Project. Benefits to the state, counties, and local communities would include tax revenues, employment opportunities, and indirect economic activity.

I strongly agree and urge the BLM to issue the one remaining Permit that will allow this project to go ahead now. There is absolutely no good reason that the United States Nuclear Power industry has to import 95% of its annual uranium fuel requirements when there exists in this country all the uranium that will ever be required.

Yours truly,

Myron N. Benda

Wyoming
DEPARTMENT OF Agriculture

Matthew H. Mead, *Governor*
Jason Fearneyhough, *Director*
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The Wyoming Department of Agriculture is dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources and quality of life.

June 7, 2012

Bureau of Land Management
Lost Creek ISR Project
Attention: Dennis Carpenter, Field Manager
1300 N. Third Street
PO Box 2407
Rawlins, WY 82301

Dear Mr. Carpenter:

The Wyoming Department of Agriculture (WDA) appreciates the opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) for the Lost Creek Uranium In Situ Recovery Project (ISR Project).

Our comments are specific to our mission within state government: dedication to the promotion and enhancement of Wyoming's agriculture, natural resources, and quality of life. As this project has major impacts upon our agriculture industry, our natural resources and the welfare of our citizens, we believe it is important you continue to inform us of proposed actions and decisions and continue to provide us the opportunity to express pertinent issues and concerns.

We believe the DEIS is a vast improvement from the US Nuclear Regulatory Commission's previous use of the Generic Environmental Impact Statement (NRC SEIS) for In Situ Leach Uranium Milling Facilities. While the DEIS is more specific to the ISR Project area, we believe the Bureau of Land Management (BLM) and Lost Creek ISR, LLC (Operators) are lacking the comprehensive impacts the ISR Project will have on livestock grazing permittees. We recommend including a number of additional impacts to be analyzed and potential mitigation measures to the Final EIS.

2.1.2.6 Fences

The WDA supports the use of wildlife friendly fencing to temporarily exclude cattle and wild horses from areas detrimental to the health of these animals. We recommend the BLM clearly specify in the DEIS, section 2.1.2.6 the total number of acres the Operators will fence of the permitted area for the Proposed Action. Section 4.2.4.1 indicates *"If all of the proposed disturbance areas of the Project were fenced at once, 345 acres (eight percent) of the 4,254-acre Permit Area would be removed from livestock grazing."* We recommend bringing this language forward to 2.1.2.6.

3.1.1.1 Livestock Grazing

The section mentions *"The primary land use in the Permit Area is rangeland for cattle; no farms, residences, or population centers are present."* The WDA requests the BLM provide a comprehensive analysis of all impacts to both cattle and sheep. The Permit Area includes Stewart Creek, Cyclone Rim and Green Mountain Allotments. We are aware of sheep grazing in Cyclone Rim, but the BLM neglects to include any impacts or mitigation to grazing permittees with sheep in the DEIS. We recommend revising the map of the Permit and Project Area (3.1-3) overlaid with grazing allotments, to include the type of livestock and season of use. Additionally, due to many permittees trailing livestock to their allotments, we recommend including information and maps of where permittees historically trail their livestock.

4.2.4.1 Livestock Grazing
As mentioned above, the BLM neglects to include a comprehensive analysis of the impacts to all livestock, including sheep and cattle in the DEIS. If sheep are not impacted in the Permitted or Project Area, the WDA requests full disclosure throughout the DEIS, including 4.2.4.1.

The WDA sent previous comments pertaining to the Scoping Notice of the ISR Project, requesting the "*BLM staff and ISR Project operators to work closely and consistently with affected grazing permittees and agriculture producers...*" The BLM and Operator neglected to include any information in the DEIS regarding annual or bi-annual meetings with affected grazing permittees in the Project Area. Due to the Operator developing the ISR Project over a period of time, and impacting three different allotments, we strongly suggest open and transparent communication between the BLM, the Operator and grazing permittees.

The third paragraph, under "Construction" states *"fencing would also create an obstacle to livestock movement."* Further in the paragraph it states, *"Fencing of all the pattern areas at once would create an oblong obstacle with the greatest length of about 2.5 miles."* While the Project Area is relatively small at 345 acres, the fencing pattern proposed could cause an indirect impact for the grazing permittees. We believe the BLM and Operator should meet with the grazing permittees to create fencing alternatives to alleviate trailing livestock 2.5 miles around the Project Area.

The last paragraph under "Construction" on page 4.2-4 relies heavily on the NRC SEIS. As we mentioned above, the use of the NRC SEIS is inadequate to cover the specifics of a project area. The DEIS and SEIS both lack the additional impacts road construction and fugitive dust have on livestock. The DEIS states *"fugitive dust that could settle on plants making them undesirable for grazing purposes."* Fugitive dust not only makes plants less desirable, but also decreases the palatability of the plant and causes health problems. Fugitive dust can increase tooth wear and cause upper respiratory tract infections, diphtheria, pneumonia, and pink eye.[i]

The DEIS impacts focus primarily on the fence exclosures of the development. The WDA recognizes a number of additional direct and indirect impacts the project can have upon grazing permittees, including aforementioned items of trailing, herding and health. An additional concern is vandalism. Vandalism to range improvements such as cut fences, gates left open, damage to stock tanks, solar panels or windmills are costly economic impacts to grazing permittees. Vandalism can increase with newly developed roads by providing more access to the public in addition to ISR Project employees. BLM and the Operator must convey how they will address vandalism in the DEIS.

4.3 Transportation

The WDA recommends the BLM request, review and approve a transportation plan developed by the Operator. The transportation plan should include a method to transport their employees to the field site which would reduce the number of vehicles traveling the dirt roads, reduce fugitive dust and the likelihood of vehicle collisions with livestock or wildlife. We also recommend reducing travel to the Project Area during evening/early morning hours due to the higher potential of vehicle collisions with livestock and wildlife.

Finally, the DEIS indicates in 4.3.1.4 Safety section, *"An internal report would be filed in the case of a near-miss or accident and drivers would be briefed on how to avoid similar future incidents."* While we support accountability to drivers who cause accidents, a key component missing in the DEIS is compensation. The BLM must request the Operator compensate livestock grazing permittees for damages due to vehicle collisions to range improvements such as fences or livestock injured or killed by vehicles en route to or inside the Project Area.

The Section, 4.3.4.3 Reclamation, discusses the reclamation of roads in the project area. The Operator is required to consult with BLM before roads are reclaimed. We believe this is another opportunity for both BLM and the Operator to consult with the livestock grazing permittees before making any final decisions affecting their respective allotments. We believe it's highly likely, the pre-project two-track roads in the Project Area existed because the grazing permittees used the roads to access pastures or gates, maintain stock tanks or drop sites for salt and minerals to livestock. The grazing permittees can also assess the amount of vandalism cases they encountered before and after road enhancement or development.

4.7.1.2 Off-Site Required Measures

The WDA appreciates BLM and the Operator's consideration of water levels on the four BLM stock wells within the one mile radius of the Permit Area boundary. It is important to have baseline data to indicate any impacts from the ISR Project. We strongly support gathering baseline data on water flow, but the DEIS is missing requiring the Operator to also gather the water quality data on these four wells. Water quality is an important component of in situ uranium mining. We request the BLM and Operator treat water quality of the four BLM stock wells as equally as important.

The WDA urges BLM and the Operator meet with grazing permittees to discuss the current conditions of the stock wells, including water flow and chemistry. This meeting would create an opportunity for the Operator to discuss the frequency and schedule of future stock well testing. Once the project is developed, the Operator will continue to test water flow and quality and provide the data analysis results to the grazing permittees and the BLM. The Operator should contact the BLM and grazing permittees immediately if results indicate a reduction of flow or increase in water quality toxic levels. The Wyoming Department of Environmental Quality, Water Quality Division should guide the BLM and Operator utilizing the literature review "Water Quality for Wyoming Livestock & Wildlife[ii] (M. F. Raisbeck DVM).

In conclusion, we appreciate the opportunity to comment on the DEIS. We believe there are a number of concerns regarding the ISR Project impacting agriculture producers, which the BLM should address prior to the Final EIS or project approval and implementation. We encourage continued attention to our concerns and we look forward to continuing cooperation on the ISR Project.

Sincerely,

Jason Fearneyhough
Director

JF/jw

CC: Governor's Policy Office
Wyoming Board of Agriculture
Wyoming Stock Growers Association
Wyoming Wool Growers Association
Wyoming Farm Bureau Federation
Wyoming State Grazing Board
Wyoming Association of Conservation Districts
Wyoming Department of Environmental Quality

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[i] http://extension.usu.edu/files/publications/factsheet/ah_beef_04.pdf

http://pubs.ext.vt.edu/400/400-750/400-750.html

[ii] M. F. Raisbeck DVM, et al. *Water Quality for Wyoming Livestock & Wildlife, A Review of the Literature Pertaining to Health Effects of Inorganic Contaninants.* Laramie, WY: UW Dept Veterinary Sciences & Renewable Resources, Wyoming Department of Game and Fish, Wyomig Department of Environmental Quality.

http://deq.state.wy.us/wqd/wqd_home/announcements/final%20draft_1.pdf

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Working to protect and restore Western Watersheds

June 11, 2012

Dennis Carpenter
Rawlins Field Office
1300 North Third
PO Box 2407
Rawlins, WY 82301

Dear Mr. Carpenter,

WWP has been deeply involved in the Lost Creek area and the Green Mountain Common allotment for a decade. We are, of course, listed as an IP for the Green Mountain Common allotment on which the Lost Creek proposal will take place. We have had litigation ongoing for this area since 2006, with a case at present, with the aims of protecting the ecosystem of the area.

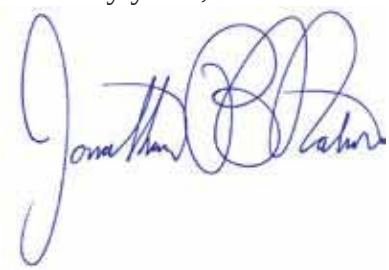
We have conducted extensive FOIA requests on the Lost Creek Insitu proposal over the last 2 years. We have commented on previous BLM NEPA for the Lost Creek proposal. We have had extensive conversations with BLM staff about the Lost Creek proposal.

In spite of this, we were stunned to find out indirectly over the weekend that the DEIS had been released a month and a half ago and the deadline is today.

NEPA Sec.1506.6 requires the BLM to "make diligent efforts to involve the public in preparing and implementing their NEPA procedures." This section under (b)3 vi clearly applies in this case.

In order to not eliminate our ability to take part in this process, we request that you please send us a paper and electronic copy of the EIS and related documents? Also we request that you grant a 45 day extension to us in order to allow us to review the DEIS and provide comments.

Sincerely yours,



Jonathan B Ratner
Director, WWP –Wyoming Office

Biodiversity Conservation Alliance

Working to Protect Native Species and Their Habitats

P.O. Box 1512, Laramie, WY 82073 (307) 742-7978 fax: 742-7989

June 11, 2012

Dennis Carpenter
Rawlins Field Office, BLM
P.O. Box 2407
Rawlins, WY 82301

Comments on the Lost Creek ISR Draft EIS

Dear Mr. Carpenter:

The following are the comments of Biodiversity Conservation Alliance, EarthWorks Action, Californians for Western Wilderness, and Western Watersheds Project on the Lost Creek ISR Project. We have a number of concerns regarding this project, most particularly its impacts to sage grouse habitats within a designated Core Area as well as impacts to the very rare Wyoming pocket gopher.

This is a very large area to commit to industrial use within a Sage Grouse Core Area. The permit area encompasses 4,254 acres "for adequate spacing of facilities and to encompass the ore trend." DEIS at ES-2. Projected surface disturbance totals 345 acres. *Ibid*. Monitoring wells would be placed at a density of one well per four acres. DEIS at 2-4. This level of development clearly is not compatible with maintaining sage grouse populations in the project area and its surroundings.

Range of Alternatives

The range of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA requires BLM to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. *See* 40 C.F.R. §§ 1502.14(a) and 1508.25(c). Formulation of alternatives during the NEPA disclosure and study process is at the heart of Congress' choice of NEPA as the procedural method that guides federal agencies' management of the public lands. *See Natural Resources Defense Council v. Hodel*, 865 F.2d 288, 299 (D.C. Cir. 1988) (citing *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976)). In fact, NEPA requirements state that "no action concerning the proposal should be taken which would: (1) Have an adverse environmental impact; or (2) Limit the choice of reasonable alternatives." 40 C.F.R. § 1506.1(a). *Catron County v. U.S Fish and Wildlife Service*, 75 F.2d 1429 (10th Cir. 1996)(partial NEPA compliance is not enough.) NEPA regulations also require agencies to address appropriate alternatives in Environmental Assessments. 40 C.F.R. § 1508.9, with specific reference to section 102(2)E of NEPA. In addition, the law requires consideration of a range of mitigation measures. *See Kootenai*

Tribe of Idaho v. Veneman, 313 F.3d 1094, 1122-1123 (9th Cir. 2002) (and cases cited therein) (stating that agencies must develop and analyze environmentally protective alternatives in order to comply with NEPA).

Section 102(2)(C) of NEPA requires an agency to present alternatives to the proposed action, and Section 102(2)(E) requires the agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(C) and (E) (1994); *see* 40 C.F.R. § 1501.2(c); *Biodiversity Associates*, IBLA 2001-166 at 6; *Wyoming Outdoor Council*, 151 IBLA 260, 272 (1999); *Howard B. Keck, Jr.*, 124 IBLA 44, 53 (1982); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-29 (9th Cir. 1988), cert. Denied, 489 U.S. 1066 (1989).

The fact that this basic, fundamental requirement that is the touchstone of *every* NEPA document has not gone unnoticed on the federal judiciary in sending back environmental studies that fail to meet this requirement, is noteworthy. *See e.g.*, *Calvert Cliffs Coordinating Comm., Inc. v. United States Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971) (detailed EIS required to ensure that each agency decision maker has before him and takes into account all possible approaches to a particular project . . . which would alter the environmental impact and the cost-benefit balance); *Natural Resource Defense Council v. Callaway*, 524 F.2d 79, 93 (2d Cir. 1975); ("The duty to consider reasonable alternatives is independent from and of wider scope than the duty to file an environmental statement."); *Simmons v. United States Army Corps of Engineers*, 120 F.3d 664, 660 (7th Cir. 1997) ("The highly restricted range of alternatives evaluated and considered violates the very purpose of NEPA's alternative analysis requirement: to foster informed decision making and full public involvement."); *Alaska Wilderness Recreation & Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995) ("The existence of a viable but unexamined alternative renders an environmental impact statement inadequate."); *Dubois v. U.S. Dept. of Agric*., 102 F.3d 1273, 1288 (1st Cir. 1996) (EIS invalid because agency did not consider alternative of using artificial water storage units instead of a natural pond as a source of snowmaking for a ski resort); *Libby Rod & Gun Club v. Poteat*, 457 F. Supp. 1177, 1187-88 (D. Mont. 1978), *rev'd in part on other grounds*, 594 F.2d 742 (9th Cir. 1979) (Army Corps of Engineers violated NEPA in an EIS for a hydroelectric dam by only cursorily addressing the alternatives of meeting the Northwest's energy needs through other sources or conservation.); *Northwest Envt'l Defense Center v. Bonneville Power Admin*., 117 F.3d 1520, 1538 (9th Cir. 1997) ("An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action.")

The failure to look at the full range of reasonable alternatives is related to BLM's duty in any environmental analysis to develop, study, analyze and adopt mitigation measures to protect other resources. This is particularly true given that BLM, pursuant to FLPMA, must manage public lands in a manner that does not cause either "undue" or "unnecessary" degradation. 43 U.S.C. § 1732(b). Put simply, the failure of BLM to study and adopt these types of mitigation measures – especially when feasible and economic –

means that the agency is proposing to allow this project to go forward with unnecessary impacts to public lands, in violation of FLPMA.

The Tenth Circuit examined NEPA's alternatives requirement and agreed with other courts that "have interpreted NEPA to preclude agencies from defining the objectives of their actions in terms so unreasonably narrow that they can be accomplished be only one alternative (i.e. the applicant's proposed project)." *Colorado Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1165 (10th Cir. 1999), at 1174 (*citing Simmons v. United States Corps of Eng'rs*, 120 F.3d 664, 669 (7th Cir. 1997)). At the same time, an agency may not completely ignore an applicant's objectives. *See id*. at 1174-75. Taken together, these directives "instruct agencies to take responsibility for defining the objectives of an action and then provide legitimate consideration to alternatives that fall between the obvious extremes." *Id.* at 1175. *See All Indian Pueblo Council v. United States*, 975 F.2d 1437, 1444 (10th Cir. 1992) (a thorough discussion of alternatives is "imperative"). Accordingly:

> Agency compliance *vel non* with the requirement to consider alternatives is evaluated under the "rule of reason," meaning that "the concept of alternatives must be bounded by some notion of feasibility," and that agencies are required to deal with circumstances "as they exist and are likely to exist," but are not required to consider alternatives that are "remote and speculative." *Natural Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 294095 (D.C. Cir. 1988) (internal citations omitted). However, in examining alternatives to the proposed action, an agency's consideration of environmental concerns must be more than a *pro forma* ritual. Considering environmental costs means seriously considering alternative actions to avoid them.

Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm., 449 F.2d 1109, 1128 (D.C. Cir. 1971); see also *Southern Utah Wilderness Alliance*, 237 F.Supp.2d 48, 51; see also *Mineral Policy Center v. Norton*, 292 F.Supp.2d 30, 51 (D. D.C. 2003) (agency "not entitled to deference" where agency operates under erroneous assumption).

The failure to look at the full range of reasonable alternatives is related to BLM's duty in any environmental analysis to develop, study, analyze and adopt mitigation measures to protect other resources. The ability to adopt post-leasing mitigation measures – see 43 C.F.R. § 3101.1-2 – is quite broad, as all reasonable measures not inconsistent with a given lease may be imposed by BLM. This is particularly true given that BLM, pursuant to FLPMA, must manage public lands in a manner that does not cause either "undue" or "unnecessary" degradation. 43 U.S.C. § 1732(b). Put simply, the failure of BLM to study and adopt these types of mitigation measures – especially when feasible and economic – means that the agency is proposing to allow this project to go forward with unnecessary impacts to public lands, in violation of FLPMA.

NEPA requires agencies to take a 'hard look' at impacts to the human environment
NEPA's purpose is to maintain a national "look before you leap" policy in regard to all major federal actions. Congress' intent in establishing this objective was to avoid uninformed agency decisions that could have serious environmental consequences. Thus, NEPA's mandate is that all federal agencies analyze the likely effects of their actions, as well as address the potential alternatives. "Agencies are to perform this hard look *before* committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values. NEPA § 102(2)(c) requires the agency to consider numerous factors [including] irreversible commitments of resources called for by the proposal." *Sierra Club v. Hodel*, 848 F.2d 1068 (10th Cir. 1988) (rev'd on other grounds)(emphasis added). NEPA provides procedural protections for resources at risk by requiring analysis of impacts *before* substantial decisions are made that set development in motion. *See Conservation Law Foundation v. Watt*, 560 F. Supp. 561, 581 (D. Mass. 1983), *aff'd by Massachusetts v. Watt*, 716 F. 2d 946 (1st Cir. 1983).

Section 102(2)(C) of NEPA requires that the responsible federal agency prepare a detailed statement on the environmental impacts of the proposed action and any adverse environmental effects which cannot be avoided should the proposal be implemented. The regulations implementing NEPA provide that "[t]o determine the scope of environmental impact statements, agencies shall consider . . . (1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. . . . (2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement. . . . [and] (3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." 40 C.F.R. § 1508.25. A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the actions when added to other past, present, and foreseeable future actions regardless of what agency ...or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. Because of the importance of cumulative impacts, "the consistent position of the case law is that … the agency's EA must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum." *Grand Canyon Trust*, 290 F.3d 339, 342 (citations omitted). To satisfy NEPA's hard look requirement, the cumulative impacts assessment must do two things. First, BLM must catalogue the past, present and reasonably foreseeable projects in the area that might impact the environment. *Muckleshoot Indian Tribe v. USFS*, 177 F.3d 800, 809-810 (9th Cir. 1999). Second, BLM must analyze these impacts in light of the proposed action. *Id.* If BLM determines that certain actions are not relevant to the cumulative impacts analysis, it must "demonstrat[e] the scientific basis for this assertion." *Sierra Club v. Bosworth*, 199 F.Supp.2d 971, 983 (N.D. Ca. 2002). In *Wyoming Outdoor Council v. U.S. Army Corps of Engineers*, the court ruled,

> The Court cannot defer to an EA/FONSI which has neglected, by its own terms, to even attempt to assess the extent of cumulative impacts that

> might be attributed to the agency action….The Corps must assess cumulative impacts to such a degree as to assure this Court that its issuance of a FONSI was not arbitrary and capricious.

351 F.Supp.2d 1232, 1243 (D. Wyoming 2005). The standard for an Environmental Impact Statement is even higher.

Importantly, 40 C.F.R. §1502.15 requires agencies to "describe the environment of the areas to be affected or created by the alternatives under consideration." Establishment of baseline conditions is a requirement of NEPA. In *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit states that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." The court further held that, "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." We are concerned that the hard look and baseline information requirements have not been met for this EIS, particularly in regard to impacts to wildlife, resulting in unnecessary impacts to wildlife in violation of FLPMA.

The Draft EIS Fails to Assess the Effectiveness of Proposed Mitigation Measures
Simply listing and not analyzing the effectiveness of these measures also results in violation of NEPA. *See Northwest Indian Cemetery Protective Association v. Peterson*, 764 F.2d 581, 588 (9th Cir. 1985), *rev'd on other grounds*. 485 U.S. 439 (1988) (where the court determined that NEPA requires agencies to "analyze the mitigation measures in detail [and] explain how effective the measure would be. ... A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA."). In a case where the Corps of Engineers attempted to rely on untested mitigation measures, the Wyoming District Court ruled, "the Court holds that the Corps' reliance on mitigation measures that were unsupported by any evidence in the record cannot be given deference under NEPA. The Court remands to the Corps for further findings on cumulative impacts, impacts to ranchlands, and the efficacy of mitigation measures." *Wyoming Outdoor Council v. U.S. Army Corps of Engineers*, 351 F.Supp.2d 1232, 1238. (D. Wyoming 2005).

Second, the mitigation measures relied upon must "'constitute an adequate buffer' …so as to 'render such impacts so minor as to not warrant an EIS.'" *Greater Yellowstone Coalition*, 359 F.3d at 1276 (quoting *Wetlands Action Network*, 222 F.3d 1105, 1121 (9th Cir. 2000)). In other words, "When the adequacy of proposed mitigation measures is supported by substantial evidence, the agency may use those measures as a mechanism to reduce environmental impacts below the level of significance that would require an EIS." *National Audubon Soc. v. Hoffman*, 132 F.3d 7, 17 (2d Cir. 1997). "In practice, mitigation measures have been found to be sufficiently supported when based on studies conducted by the agency,…or when they are likely to be adequately policed." *Id.*

The courts have had little patience with agencies' failure to provide sounds scientific evidence to support the efficacy of their mitigation measures. In *Wyoming Outdoor Council*, the Court ruled

> In short, the mitigation measures relied upon by the Corps, while mandatory, are not supported by a single scientific study, paper, or even a comment. This Court does not expect the Corps to conduct extensive research on the efficacy of wetland replacement. Neither can the Court defer to the Corps' bald assertions that mitigation will be successful. … As such, the Corps was arbitrary and capricious in relying on mitigation to conclude that there would be no significant impact to wetlands. The Court remands to the Corps to support its reliance on mitigation.

351 F.Supp.2d 1232, 1252, footnote omitted. The court concluded, "This Court will not rubberstamp an agency determination that fails to consider cumulative impacts, fails to realistically assess impacts to ranchlands, and relies on unsupported, unmonitored mitigation measures. NEPA and the CWA require more." 351 F.Supp.2d 1232, 1260.

In this case, BLM does not provide an assessment of the adequacy of mitigation measures, particularly mitigation measures to protect sage grouse. As a result it proposes a package of permitted activities and mitigation measures that will not sustain healthy sage grouse populations in this part of the Core Area.

BLM Sensitive Species Obligations

According to the BLM Sensitive Species manual, "BLM special status species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s)." BLM Manual 6840.01. In addition, for special status species, including sensitive species, BLM must:

> Identify strategies and decisions to conserve and recover special status species. Given the legal mandate to conserve threatened or endangered species and BLM's policy to conserve all Special Status Species, land use planning strategies and decisions should result in a reasonable conservation strategy for these species. Land use plan decisions should be clear and sufficiently detailed <u>to enhance habitat or prevent avoidable loss of habitat pending the development and implementation of implementation-level plans</u>. This may include identifying stipulations or criteria that would be applied to implementation actions. Land use plan decisions should be consistent with BLM's mandate to recover listed species and should be consistent with objectives and recommended actions in approved recovery plans, conservation agreements and strategies, MOUs, and applicable biological opinions for threatened and endangered species.

BLM Land Use Planning Handbook H-1601-1, Appendix C at 5, emphasis added. The State Director's responsibilities include the following: "Ensuring that when BLM engages in the planning process, land use plans and subsequent implementation-level plans identify appropriate outcomes, strategies, restoration opportunities, use restrictions, and management actions necessary to conserve and/or recover listed species, as well as provisions for the conservation of Bureau sensitive species." BLM Manual 6840.04(D)(5), emphasis added. In addition to the responsibility to monitor population trends of Sensitive Species, the Field Manager is tasked with "Ensuring that land use and implementation plans fully address appropriate conservation of BLM special status species." BLM manual 6840.04(E)(6). Finally, "Bureau sensitive species will be managed consistent with species and habitat management objectives in land use and implementation plans to promote their conservation and to minimize the likelihood and need for listing under the ESA." BLM Manual 6840.06, emphasis added, *and see* BLM Manual 6840.2. Specifically, "On BLM-administered lands, the BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat, by:

> 1. Determining, to the extent practicable, the distribution, abundance, population condition, current threats, and habitat needs for sensitive species, and evaluating the significance of BLM-administered lands and actions undertaken by the BLM in conserving those species.
>
> 2. Ensuring that BLM activities affecting Bureau sensitive species are carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale.
>
> 3. Monitoring populations and habitats of Bureau sensitive species to determine whether species management objectives are being met.
>
> 4. Working with partners and stakeholders to develop species-specific or ecosystem-based conservation strategies (see .2D Agreements, Assessments and Cooperative Strategies for Conservation).
>
> 5. Prioritizing Bureau sensitive species and their habitats for conservation action based on considerations such as human and financial resource availability, immediacy of threats, and relationship to other BLM priority programs and activities.
>
> 6. Using Land and Water Conservation Funds, as well as other land tenure adjustment tools, to acquire habitats for Bureau sensitive species, as appropriate.
>
> 7. Considering ecosystem management and the conservation of native biodiversity to reduce the likelihood that any native species will require Bureau sensitive species status.

> 8. In the absence of conservation strategies, incorporate best management practices, standard operating procedures, conservation measures, and design criteria to mitigate specific threats to Bureau sensitive species during the planning of activities and projects. Land Health Standards should be used for managing Bureau sensitive species habitats until range-wide or site-specific management plans or conservation strategies are developed. Off-site mitigation may be used to reduce potential effects on Bureau sensitive species."

BLM Manual 6840.2(C). Clearly, the BLM must survey for special status species before allowing any ground disturbance for this project, must develop site-specific management plans for these species, and must monitor special status species populations within and near the proposed wind farm project area to ensure that the agency is promoting their recovery. The BLM must acquire baseline data and analyze the impacts of the alternatives on these species. In cases where special status species obligations are flouted, this safety net becomes less meaningful and increases the need for Endangered Species Act protection.

Roads

Two Occupied-Inactive Leks and one occupied, active lek are located with 0.6 mile of two-tracks slated to be upgraded to improved gravel roads. DEIS at 2-68. In addition, one Occupied-Inactive lek and two occupied, active leks are within 1.9 miles of roads used to transport produced uranium and waste. Id. Under SGIT stipulations, BLM concedes, surface occupancy is not permitted within 0.6 miles of leks in Core Areas. DEIS at 4.9-28. It is notable that this measure is a woefully inadequate level of protection, and has the SGIT based their lek buffers on available science rather than political expediency, the NSO lek buffers would have been at least 1.9 miles (after Holloran 2005). Yet both the East Access Road and West Access Road are within 0.6 mile of occupied leks. *Id*.

BLM argues that the Crooked Well Lek, which is Occupied-Inactive and within 0.6 mile of the East Access Road, has not been used by sage grouse for years. DEIS at 4.9-28. This argument is unavailing because an occupied lek is defined for the purpose of BLM policy as "A lek that has been active during at least one strutting season within the prior ten years." IM 2010-12 Attachment 1 at unnumbered 3. In addition, According to BLM, "Within these cycles, sage-grouse populations decline and some leks become temporarily inactive for a period of years. Once environmental conditions improve, these leks may become active again. These cycles appear to be approximately 10 years." IM 2010-12, Attachment 3 at unnumbered 1. <u>All</u> occupied leks are protected through prescribed management actions during surface disturbing activities.

According to presentations made at the Western Landscape Conservation Initiative in Rock Springs in Spring 2012, lek counts in the vicinity of the Lost Creek access roads have dropped precipitously due to the increasing level of vehicle traffic in the project area as a result of preliminary activity associated with the Lost Creek project. This underscores the importance of relocating access roads well away from sage grouse leks to prevent extirpation of lek populations or displacement to less suitable or already-occupied habitats.

Access roads approaching the project sites from both east and west would be upgraded to crown-and-ditch gravel road standards prior to the project. DEIS at 2-12. These are currently two-track jeep trails. DEIS at 4.9-28. Project roads are supposed to be reclaimed at the project's end. DEIS at 2-31. However, it is possible that these roads will not be decommissioned and reclaimed to their original state at the end of the active life of the operation. DEIS at 2-30.

According to the DEIS, "BLM and the State require that the impacts of roads on wildlife be identified and mitigated. In particular, impacts on Greater sage-grouse and raptors are of concern." DEIS at 2-89. The impacts of roads have not been adequately mitigated under the Proposed Action.

The Southern Alternate Access Road avoids lands within 1.9 miles of sage grouse leks as well as lands within 1 mile of active raptor nests. See Figure 2.2-3. DEIS at 2-93. We would recommending straightening this route while still avoiding the 19.-mile lek buffers and 1-mile raptor nest buffers. It would also be possible to establish a new access route, beginning just east of the Southern Alternate Access Road and traveling southeast for approximately ¾ mile before swinging due east to intersect the Sooner Road and then continuing southeast to avoid 1.9-mile lek buffers to reach Mineral Exploration Road. See Figure 2.2-3 and Attachment 1. For the purposes of these comments, we will call this the Eastern Alternate Access Road. It has not to date been considered by the BLM according to the DEIS.

While we respect the BLM's desire to align new or upgraded access roads on existing primitive routes, the lower-impact option is to route the access roads outside the lek and nest buffers for sensitive wildlife to the greatest extent possible, even if it means adding vehicle route mileage. This would meet Sweetwater County access requirements while minimizing impacts to sage grouse and raptors. Avoiding impacts to sensitive wildlife needs to be the overriding priority in choosing alignments for access roads to this facility, as traffic is likely to be significant. We concur with WGFD that creating new roads has a greater negative impact on sage grouse populations than upgrading existing two-tracks; however, upgrading existing jeep trails inside the more sensitive habitats within sage grouse lek buffers has greater impacts than creating new roads outside those lek buffers. The question of context of the road in terms of sensitive habitat overrides the increase in habitat fragmentation in less-sensitive habitats for both sage grouse and raptors. BLM should require the use of the Southern Alternate Access Road and Eastern Alternate Access Road as lower-impact alternatives to the east and west access roads in the Proposed Action. Because it is physically possible to minimize intrusions into lek and raptor nest buffers, and it is BLM policy to do so, it would be arbitrary and capricious and an abuse of discretion (in violation of the APA), not to mention unnecessary and undue degradation of raptor and sage grouse habitat (pursuant to FLPMA) to choose access road alignments that have higher impacts on wildlife than these.

Viewshed analyses at 1 and 2 meter heights from the Discover, Discover 2, and Crooked Well Leks show that parts of the access roads would be visible from the leks.[1] BLM ultimately concedes,

> "As discussed above, three occupied leks (Discover 2 Lek and Crooked Well Lek) and one occupied, active lek (Discover) are within 0.6 miles of the access roads, which would be upgraded. This surface occupancy could impact the status of Greater sage-grouse occupation of these leks. This is contrary to the stipulations set forth in the SGIT; however the executive order does allow for exceptions to be considered on a case-by-case basis."

DEIS at 4.9-28. BLM goes on to argue that upgrading jeep trails within 0.6 mile of occupied leks would have less impact that creating new roads outside the 0.6-mile buffer. *Id.* Bosh and nonsense; this is an unsupportable statement. Jeep trails have very little impact on sage grouse, less still if they are administratively closed, as they should be in this case. If the Discover lek has active breeding activity on it presently, this demonstrates that the jeep trail is having limited impact, while the anticipated significant impacts from upgrading the jeep trails to high-standard gravel roads suggests that the upgrading would cause major problems for sage grouse. Conversely, if impacts are being seen from increased traffic on this jeep road, the appropriate action would be to close it to vehicle traffic rather than upgrading it to a gravel road. BLM references DEQ proceedings arguing that creating "new" roads would have greater impact. DEIS at 4.9-28. But the DEQ was never presented with the option of re-aligning the roads farther than 2 miles from the occupied leks, as BCA recommends in these comments. Because nesting activity is concentrated within 2 miles of leks (*see* Wallestad and Pyrah 1974, Holloran 2005), shifting roads farther than 2 miles away would reduce the impacts to nesting sage grouse versus upgrading the existing roads, which would place a substantial mileage of the access roads within 2 miles of an occupied lek. Thus, the Proposed Action would demonstrably have a much higher impact on nesting sage grouse than re-siting the roads more than 2 miles away from leks, negating the argument elucidated by the Wyoming DEQ in its permitting hearing, as referenced by BLM in its EIS.

Let's be clear: As jeep trail, particularly when closed, should have a negligible effect on sage grouse (especially if receiving negligible traffic), and since high-standard gravel roads have a significant impact, the "upgrading" of the access roads as envisioned under this project essentially has the same impact as creating a similar mileage of new roads. Relocating the access roads to avoid all lands within 2 miles of an occupied lek would indeed require a greater mileage of road, but the road would be traveling through much less sensitive habitat, with a much smaller percentage of nesting sage grouse occupying that habitat. Thus, the impacts of the alternate access roads as recommended by BCA would be much less than the impact of upgrading existing jeep trails into gravel roads as recommended by BLM in its Proposed Action, in addition to putting this aspect of the Project into compliance with IM 2010-12 and the Governor's Executive Order. These

[1] These analyses are available online at http://deq.state.wy.us/eqc/orders/Land%20Closed%20Cases/11-4803%20Lost%20Creek%20ISR,%20LLC/11-4803%20Lost%20Creek%20ISR,%20LLC.html; site last visited 6/6/12.

facts become even more compelling when one considers that BLM plans to approve overhead powerlines to be sited along the access roads, causing further impacts to sage grouse commensurate with the sensitivity of the sage grouse habitat they traverse.

One additional mitigation measure that should be considered, but which apparently has not been considered to date by BLM, is the option of requiring the project proponent to close and restore previously existing roads in the general vicinity of the Project Area to at least partially compensate for the mileage of new roads constructed and attendant habitat fragmentation and wildlife disturbance due to vehicle traffic. See DEIS at 4.9-2. BLM has considered gating and signing existing two-tracks, but not closing and revegetating them. *Id*. Apparently the Project Proponent would be willing to close and gate such two-tracks. LCI Wildlife Protection Plan, Attachment OP 6 at 5.[2] And BLM has not disclosed to what extent such gating and signing would take place, leaving the reader to guess whether and how much of this compensatory mitigation would occur. NEPA requires full disclosure of this, so that net impacts can be accurately assessed.

BLM argues that the increase of one 18-wheeler truck on main haul roads will have no significant impact on sage grouse. DEIS at 4.9-29. This assertion is unsupported by any scientific finding or even anecdotal guesswork. BLM makes no attempt at all in this section to analyze the impacts of the scores of light-truck trips that will be occurring on these roads on sage grouse. *Id*. Given that the amount of vehicle traffic currently using the jeep trails that are planned for upgrade is essentially nil, even one 18-wheeler makes a major difference, let alone the level of traffic outlined in the DEIS's Table 4.3-1. In failing to analyze the impact of this level of traffic on sage grouse, BLM has failed NEPA's hard look requirement, a deficiency that must be address before the project can legally be approved.

Transmission Lines

Transmission lines and other utilities would be placed in or adjacent to the access road right-of-way where possible to minimize habitat impacts. Unfortunately, the access roads both run within 0.6 mile of sage grouse leks. This puts overhead transmission lines within close proximity of sage grouse leks in violation of the Governor's Executive Order on Core Areas as well as BLM's own guidance. Under the Governor's Executive Order, "New distribution, gathering, and transmission lines sited outside established corridors within Core Population Areas should be authorized or conducted only when it can be demonstrated by the state agency that the activity will not cause declines in Greater Sage-Grouse populations." Exec. Order 2011-5 at 4. Furthermore, the Governor's Executive Order states,

> Overhead Lines: Bury lines when possible, if not; locate overhead lines at least 0.6 miles from the perimeter of occupied sage-grouse leks. New lines should be raptor proofed if not buried.

[2] Online at http://deq.state.wy.us/eqc/orders/Land%20Closed%20Cases/11-4803%20Lost%20Creek%20ISR,%20LLC/AttOP_6_Wildlife_Sep10.pdf; site last checked 6/6/12.

Executive Order at 9. It is not possible for WGFD to determine that siting transmission lines within 0.6 miles of active sage grouse leks will not cause population declines. Furthermore, no one has made any representation that burial of power lines is not possible. Eeven if powerlines are allowed overhead within 5 miles of leks, significant impacts are likely to nesting sage grouse even if the lines are sufficiently distant to avboid impacts to lekking behavior. Raptor perch inhibitors of the type referenced by BLM (DEIS at 4.9-3) are not effective at preventing raptor perching. It is certainly possible for BLM to require burial of powerlines within 0.6 mile of sage grouse leks. But the agency has failed to require this measure. It is also possible for BLM to site powerlines along access roads that have been shifted at least 2 miles away from occupied sage grouse leks. This is a distinct possibility and a reasonable alternative as our comments demonstrate. See Attachment 1. Yet BLM has failed to consider this alternative so far; to ignore it would violate NEPA's range of alternatives requirements.

Even if powerlines are sited at least 0.6 mile from occupied leks (as suggested at page 4.9-30), they will still be crossing occupied nesting habitat that is of increasing importance with closer proximity to the lek. All powerlines within 5 miles of occupied leks should be buried regardless of the alignment chosen, to protect not only breeding but also nesting sage grouse.

Air Quality

The EIS discusses nonradioactive dust and radon gas as the primary airborne pollutants. DEIS at 2-22. We are concerned that dust may become contaminated with radiation, and then be spread by airborne means. What are the potential effects of airborne radioactive pollutants?

Detention Ponds

The proposal includes two large storage ponds. DEIS at 2-6. The ponds would be fenced to exclude big game. DEIS at 2-14. However, small mammals and birds would potentially be exposed to storage pond water, potentially leading to chronic exposures of toxicity concern. DEIS at 2-69, *and see* DEIS at 4.9-40, 4.9-43. In the "On-Site Required Measures," there is no reference to any measures to keep waterfowl, shorebirds, and other wildlife out of storage ponds; all of the mitigation measures focus on preventing or ameliorating the negative results of a rupture in the liner system. See DEIS at 4.7-2, 4.7-9. Indeed, waterfowl and shorebirds would appear to have full access. *Sensu* DEIS at 4.9-40. Based on the consequences of a release of this water from the storage ponds, it appears to be quite toxic. See DEIS at 4.7-20, "If a release does occur and if the 11(e)(2) byproduct material does migrate to the groundwater in the DE Horizon the impact would be high and long-term." Assertions that storage ponds pose little or no risk to birds seem inconsistent with the previous description. DEIS at 4.9-4. Please explain why the storage pond water is a major threat to groundwater in the event of a breached liner, yet is of no concern with regard to birds and other wildlife. For sage grouse, BLM states, "If Greater sage-grouse use the ponds as a regular water source there is an exposure potential." DEIS at 4.9-39. This appears to be a problem that remains unresolved by current mitigation measures.

Given the number of waterfowl and shorebirds that use the nearby Chain Lakes Wildlife Habitat Management Area, some of them rare and sensitive species, it is likely that some birds would be attracted by the availability of open water at storage ponds and become exposed to radiation and other toxic compounds. The ponds are expected to contain Radium 226. LCI Wildlife Protection Plan, Attachment OP 6 at 7.[3] Concentration of selenium in waterfowl feeding on plankton or algae is also a concern. *Id.* BLM has not undertaken an adequate analysis of the impacts of potential poisoning of waterfowl, grouse, passerine birds, and smaller mammals, nor have adequate mitigation measures been required that would prevent significant problems with wildlife poisoning from the project. Those measures outlined at DEIS page 4.9-41 are inadequate inasmuch as they rely on the hope that wildlife will be deterred from using these ponds as water sources rather than requiring netting of ponds and other measures to actively preclude access. Hope is not a strategy, nor does it constitute adequate stewardship in the context of a project with the potential for extreme levels of toxicity.

Fencing

On a related note, fences restricting livestock and wild horses from project facilities would be wildlife-friendly to be permeable to pronghorns and smaller wildlife. DEIS at 4.9.2. What are the impacts to the wildlife that would be able to access project facilities in terms of radiation exposure and potential to drink from contaminated water sources? It appears that while larger ungulates may be excluded from the detention ponds by fences, smaller wildlife will not. This raises potential problems, since surface water is a rare commodity in the Red Desert and would be expected to attract birds and mammals.

Groundwater and Springs

We are concerned that contamination of groundwater as a result of project operations will result in contaminated springs outside the Permit Area. The ore deposits are 300 to 700 feet belowground. DEIS at ES-3. The wells will be completed between 350 and 500 feet belowground. DEIS at 2-4. Groundwater quality in the Battle Springs aquifer is relatively high, with less than 500 mg/l Total Dissolved Solids (TDS) in the Project Area, with "some of the best overall quality of those studied in Sweetwater County." DEIS at 3.6 - 49. The same is true for the ore-bearing sands. DEIS at 3.6-50. However, this aquifer does test relatively high for radioactive elements. DEIS at 3.6 -49. BLM has yet to take the legally required hard look at this type of impact.

The lixiviant injection process mobilizes not only uranium, but also heavy metals such as selenium and arsenic. DEIS at 2-19. There is a protocol for documenting radioactive releases from the site, and notifying the Wyoming DEQ and the NRC. DEIS at 2-21. But there does not seems to be a reliable method for retrieving "excursions" once they got outside the monitoring well perimeter. Thus there appears to be nothing preventing an excusion from contaminating Battle Spring or other spring features.

Tests for the injection strata indicate that water quality between 6,100 and 10,000 feet of depth is Class IV and exceeds groundwater quality standards for a number of

[3] Online at http://deq.state.wy.us/eqc/orders/Land%20Closed%20Cases/11-4803%20Lost%20Creek%20ISR,%20LLC/AttOP_6_Wildlife_Sep10.pdf; site last checked 6/6/12.

constituents. DEIS at 2-11. So injection of chemicals does not seem to be a principal issue. But contamination of the aquifer in the target zone could result in groundwater contact with surface springs in addition to livestock watering wells.

We are also concerned about long-term impacts of spills and leaks, and contamination on-site that may exist after reclamation is complete. Spills and leaks could impact the quality of surface water runoff under the Proposed Action. DEIS at 2-65. According to BLM, decontamination of the project site and facilities materials will be a fairly complex and difficult process. See DEIS at 2-30. What will happen if leaks permeate the soil and get into shallow aquifers?

Faults and drill holes could allow leakage of lixiviant and/or uranium into neighboring strata. The EIS notes the presence of the Lost Creek Fault in the project area, with a vertical displacement of up to 80 feet. DEIS at 3.3-10, 3.3-11, 3.3-14. The North Fault also occurs within the project area, with a displacement of 70 feet. EIS at 3.3-15. The South Fault also occurs here, with a displacement of approximately 40 feet. Id. There are also a great many historic drill holes in the area that might allow communication of pregnant lixiviant and other hazardous substances among rock layers and aquifers. DEIS at 3.4-31, 3.6-33. The potential for excursions is elevated by the presence of faults and/or abandoned exploratory wells, among other factors. DEIS at 4.7-29. What measures will be required to stabilize or seal faults or known abandoned wellbores prior to the project to prevent them from becoming avenues for excursion of pregnant lixiviant from the target zone?

The northeast portion of the project area intersects Battle Springs Draw. DEIS at 3.5-3. Springs are located near the terminus of this drainage at Battle Springs Flat which is located 9 miles southwest of the Project Area. Importantly, groundwater flow is west-southwest from the Project Area (DEIS at 3.6-17), toward these springs. BLM states that the proposed mine units are in confined aquifers several hundred feet underground, and there is no know hydrological connection between the surface <u>of the Permit Area</u> and this aquifer. DEIS at 4.6-1, emphasis added. However, there is every likelihood that these "confined aquifers" communicate with and supply water to springs in places where the Battle Springs formation crops out at the surface. We are concerned about groundwater contamination becoming surface water contamination outside the Project Area, i.e. approximately 9 miles to the southwest where springs occur that originate in this formation. But the Surface Water impacts analysis makes no mention of potential contamination of surface water emerging outside the Project Area that results from project operations.

The upper Battle Spring formation contains the uranium mineralization in the Project Area. DEIS at 3.3-1. According to potentiometry, groundwater flow moves from the Project Area toward the center of the Basin. DEIS at 3.6-4. According to BLM, "The main discharge area for the Battle Spring/Wasatch aquifer system is to a series of lakes, springs, and playa lake beds near the center of the Basin." DEIS at 3.6-1. BLM has baseline water quality data for Battle Spring available to the agency at the time the DEIS

was written.[4] The BLM analysis does not include estimates of flow rates from the Project Area to the springs, playas, and lakes at the center of the Basin. Therefore it remains unknown how long radiation-contaminated water resulting from project-related problems would take to emerge at the surface, nine miles away.

BLM describes in brief the procedures that would be undertaken in the event of an excursion, in which uranium impregnated water is documented by monitoring wells to have left the project perimeter. DEIS at 4.7-4. However, there is no description concerning what the groundwater impacts would be, both short- and long-term, what consequences that might have for groundwater in the surrounding area, and what potential that has to contaminate down-gradient springs. This is also not addressed in the Cumulative Impacts section. DEIS at 5-14. What is the effectiveness of generating a "net process bleed" to attempt to attract the escaped contaminates back toward the project site? What are the consequences if the net process bleed fails or is incompletely effective? NEPA's hard look analysis is supposed to answer these questions, yet in this case the BLM has apparently made no attempt to undertake the necessary research and/or analysis.

BLM discusses in the context of restoration the horizontal and vertical "flare" of the lixiviant during mining. DEIS at 4.7-5. How is this flare monitored by the monitoring wells? These wells are designed to detect lateral movement, but not necessarily vertical movement. DEIS at 4.7-10. Are the monitoring wells open holes, capable of registering contaminant presence throughout the stratigraphic column? Or are they cased and then perforated only into the zones that are being actively mined? If there is vertical flare of lixiviant, which then leaks upward and/or downward from the target formation, then groundwater will carry the plume downgradient and potentially out of the Project Area. If the monitoring wells are cased and perforated only in the target formation or a narrow subset of formations adjoining it, then excursions due to vertical flare could be missed. The DEIS mentions casing in the context of monitoring wells (DEIS at 4.7-10), indicating that this scenario is a distinct possibility.

BLM discusses water being removed during sweep operations and treated down to baseline quality. 4.7-4. The water would then be reinjected back into the target formation. DEIS at 2-28. But clearly the sweep will not be able to get all of the contaminated water out of the target formation to be purified to baseline conditions, so the post-mine groundwater will begin with a mix of injected water of baseline quality mixed with degraded water that was left behind. What is the projected net decrease in water quality for operations such as these. There must have been other in situ recovery operations using the same methodology as is proposed for Lost Creek that have been reclaimed. What was the net groundwater degradation (or lack thereof) for these operations? A hard look demands that the agency do its homework and bring to bear all of the information available concerning the net change in groundwater quality. Yet in the Draft EIS, BLM provides no estimate as to the magnitude of groundwater quality change.

[4] http://deq.state.wy.us/eqc/orders/Land%20Closed%20Cases/11-4803%20Lost%20Creek%20ISR,%20LLC/TabD6_3_Historic_Battle_Spring_WQ.pdf, site last visited 6/6/12.

While there appear to be projected impacts on groundwater quality at all stages during the operation up to and including reclamation, there does not appear to be a section dedicated to assessing groundwater impacts post-reclamation, after project activities are completed. See DEIS at Section 4.7, and see page 4.7-34. In many respects, this is the most important groundwater issue that the EIS should be addressing, given that uranium has a half-life of thousands of years, and remaining impacts to groundwater after completion of reclamation activities will be correspondingly long-term.

Range of Alternatives

Phased development of mine units was eliminated from detailed consideration as an alternative. DEIS at 2-60. Mine units would be constructed in a progressive manner. DEIS at 2-46. According to the DEIS, each mine unit would require two years for groundwater restoration. DEIS at 2-38. BLM considers this a 'schedule-based approach' which "is effective and is economically practicable." DEIS at 2-86. The project would proceed unit-by-unit, with each unit ringed by a series of monitoring wells to prevent excursions from the unit. DEIS at 2-83. BLM states that six mine units were inintially proposed, but this was consolidated to three as this was deemed "more appropriate." DEIS at 2-84. No explanation for this consolidation is provided; initially the Proponent clearly believed six units to be more appropriate. However, it appears that phased development, unit by unit, will be taking place in any case. Why not limit the project to operating only one mine unit at a time, and opening the next unit when the previous unit has completed final reclamation activities?

BLM states, "Regardless of the number of mine units in the Permit Area, the total disturbance area does not change because the footprint of the mine unit follows the ore trend. Therefore, this alternative was not evaluated in detail." DEIS at 2-84. BLM points to a "relatively short timeframe of the project" as a related factor. Id. However, the timeframe does not have to be relatively short. The BLM could require that six mine units be undertaken, as originally proposed, and that the first mine unit be fully reclaimed before construction on the second mine unit could begin. This would result in one-sixth the area under industrial use at any one time verses the Proposed Action, with a concomitant reduction in wildlife displacement by project facilities and wildlife disturbance as a result of project activities. The BLM has full authority under its FLPMA multiple-use mandate to require such concessions of the project proponent in order to mitigate the impacts on wildlife. This approach would necessarily stretch out the timeframe of the project.

The project would entail "occasional light use at night for safety and security." DEIS at 2-71. There would be 119 to 148 employee positions created as a result of the project. DEIS at 2-72. Even if all of these workers are not present at the project site at any one time, this is a lot of human activity. It will magnify disturbance to wildlife in surrounding habitats. The responsible option would be to limit the disturbance level by phasing the mine units so that only one is in operation at any one time.

Reclamation
Past uranium mining and exploration in the Gas Hills area, in the Lander Field Office approximately 50 miles north of the Project Area has never been fully reclaimed. There are a great number of open pits, diggings, and water bodies in this area that have become contaminated with radiation. Radiation contamination can remain for tens of thousands of years, both aboveground and in belowground aquifers. For these reasons, we are concerned that the Lost Creek project may, through spills, failures in safety systems, or shoddy reclamation, result in long-term contamination issues in and near the project site.

Pygmy Rabbits
A literature review of pygmy rabbit habitat requirements and potential impacts, which BLM should have undertaken in fulfillment of its NEPA baseline information requirements, would have revealed some very salient information. Pygmy rabbits are obligate residents of sagebrush stands that are tall with dense canopy cover (Green and Flinders 1980, Katzner 1994). Fragmentation of tall sage habitats can reduce the size, stability and success of pygmy rabbit populations because these animals are reluctant to cross open habitats (Katzner 1994).

Pygmy rabbits are limited to lowland big sagebrush in the Project Area. DEIS at 4.9-20. This habitat type is typically confined to draw and drainage bottoms. Pygmy rabbit signs were recorded in a handful of draw bottoms;[5] the extent of search effort is not known. Where roads can represent impassable barriers to pygmy rabbit dispersal, we recommend the emplacement of oversized culverts (perhaps 6 feet in diameter) that could serve as pygmy rabbit underpasses to maintain habitat connectivity along draws in prime pygmy rabbit habitat. We also recommend avoiding the siting of facilities in these habitats, which tend to be fairly narrowly constricted. If 85 percent of the disturbance I projected for upland big sagebrush habitat types and 15% is projected for lowland big sagebrush, this seems like a fairly random distribution that does not particularly indicate avoidance of lowland big sagebrush, especially given the 85% of land cover represented in upland big sagebrush in the habitat transects for the Project Area. DEIS at 3.7-7. It does not appear that BLM has taken a hard look at impacts to pygmy rabbits, nor has the agency taken pains to ensure that facilities are located outside the draw bottoms that are occupied pygmy rabbit habitat according to site-specific surveys.

Wyoming pocket gopher
We are concerned that the Lost Creek ISR Project will have major impacts on this BLM Sensitive Species, which is extremely rare. BLM's Draft EIS lists the Wyoming pocket gopher as "confirmed on site." DEIS at 3.8-17. Based on trapping effort, Wyoming pocket gophers were found throughout the project area. DEIS at 3.8-48, and see Figure at 3.8-50. Impacts would likely be heavy. According to BLM, "Project Construction would result in long-term direct impacts to the Wyoming pocket gophers in the Permit Area. DEIS at 4.9-36. Conditions would remain unfavorable for Wyoming pocket gophers in the Project Area throughout the Operational phase. DEIS at 4.9-43. "Wyoming pocket

[5] http://deq.state.wy.us/eqc/orders/Land%20Closed%20Cases/11-4803%20Lost%20Creek%20ISR,%20LLC/FigD9_8_Pygmy_Rabbit_Signs.pdf; site last visited 6/6/12.

gopher burrow complexes can be expected to disappear in the dispturbed areas for the life of the Project." DEIS at 4.9-37.

Wyoming pocket gophers are one of the rarest mammals in North America, if not the rarest. The Wyoming pocket gopher (*Thomomys clusius*) is the only known vertebrate species endemic to Wyoming—apparently only in south-central Wyoming and in specifically Sweetwater and Carbon counties.[6] One of our petitions primary rationales for the species' listing under the Endangered Species Act is the potential negative effects of energy development taking place within their known range.[7] Energy development is also named as a "more likely" threat than even agriculture to the Wyoming pocket gopher in the Wyoming Natural Diversity Database Wyoming pocket gopher Conservation Assessments.[8]

This naturally uncommon species is extremely vulnerable to habitat loss due to mining and energy development and associated roads, and to habitat fragmentation due to roads and well fields. Oil and gas development poses perhaps the greatest threat to Wyoming pocket gopher viability. Both breeding and foraging activities of Wyoming pocket gopher populations are impacted by above- and below-ground disturbances associated with energy exploration, drilling and associated activities. Impacts of uranium development to Wyoming pocket gopher include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing generally known and unknown behavioral changes, (3) direct mortality associated with reserve pits, crushing due to vehicular movements and construction activities, and (4) lowered water tables resulting in herbaceous vegetation loss. These impacts have not been thoroughly evaluated with full NEPA analysis.

More information is needed about Wyoming pocket gophers to confidently assess the spatial dynamics of populations. Factors such as low dispersal ability, high inbreeding, and high variation over small geographic areas suggest that Wyoming pocket gopher meta-population structures could easily be disrupted when local populations are isolated over relatively short distances.[9] The continuity of suitable habitat thus becomes an important component in the conservation of Wyoming pocket gopher populations. Very little is known regarding survivorship and mortality in Wyoming pocket gophers.[10] Most

[6] Clark, T.W. and M.R. Stromberg. 1987. Mammals in Wyoming. University Press of Kansas, Lawrence, Kansas.

[7] Biodiversity Conservation Alliance. Petition to List Wyoming Pocket Gopher as Threatened or Endangered under the Endangered Species Act. Submitted to U.S. Fish & Wildlife Service: August 7, 2007.

[8] Wyoming Pocket Gopher (*Thomomys clusius*): *A Technical Conservation Assessment. Prepared for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project August 31, 2006 Douglas A. Keinath and Gary P. Beauvais, Ph.D. Wyoming Natural Diversity Database, University of Wyoming, 1000 E. University Ave. — Dept. 3381, Laramie, Wyoming 82071. *Peer Review Administered by Society for Conservation Biology

[9] Patton, J.L. and R.E. Dingman. 1968. Chromosome studies of pocket gophers, genus *Thomomys*. I. The specific status of *Thomomys umbrinus* (Richardson) in Arizona. Journal of Mammalogy 49:1-13.

[10] Keinath, D.A. and G.P. Beauvais. 2006. Wyoming pocket gopher (*Thomomys clusius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region, available online at http://www.fs.fed.us/r2/projects/scp/assessments/wyomingpocketgopher.pdf.

do not live more than two breeding season, but they are capable of living longer under favorable circumstances.[11] Climate may be a factor in *T. clusius* survival and recruitment.[12] Researchers also stated that sub-adult pocket gophers appeared to experience unusually heavy mortality when forced to live in marginal habitats.[13]

Mammologists and other wildlife and soil scientists recognize pocket gophers for their positive impacts on the ecosystems they inhabit. These effects primarily result from extensive tunneling activity, which can affect soil formation, hydrology, and nutrient flows. In addition, pocket gophers' consumption of below-ground plant biomass can alter the competitive interactions of plants and thereby influence above-ground vegetation.[14] Like other "ecosystem engineers" (e.g., ants, beavers, prairie dogs), pocket gopher activities can drive ecosystem function, making them important to native ecosystems. The extensive burrow systems provide habitat for numerous other burrowing and opportunistic species. Abandoned pocket gopher burrow systems provide habitat for salamanders, snakes, insects, and other rodents.[15]

In addition, pocket gophers serve as prey for a number of birds and mammals, but it is suspected that natural predation is not a factor limiting pocket gopher distribution and abundance.[16] Since gophers evolved with natural predators, it is unlikely such predation would play a role in population declines unless accompanied by other extenuating circumstances.[17] Such extenuating circumstances might include increased predation from generalist predators whose distributional expansion has been facilitated by human alteration of the landscape (e.g., feral cats, coyotes, raccoons).[18] Three-dimensional structures associated with oil and gas development, like power lines and buildings, create raptor perches.[19] Such development has transformed pocket gopher habitat from a

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[11] Reid 1973. "Population biology of the northern pocket gopher." In Pocket Gophers and Colorado Mountain Rangeland. Experiment Station Bulletin. Fort Collins, CO:Colorado State University. Pp. 21-41.
Clark, T.W. and M.R. Stromberg. 1987. Mammals in Wyoming. University Press of Kansas, Lawrence, KS.

[12] Vaughan, T.A. 1967. Food habits of the northern pocket gopher on shortgrass prairie. The American Midland Naturalist 77:176-189.

[13] Howard, W.E. and H.E. Childs. 1959. Ecology of pocket gophers with emphasis on *Thomomys bottae mewa*. Hilgardia 29:277-358.

[14] Keinath, D.A. and G.P. Beauvais. 2006. Wyoming pocket gopher (*Thomomys clusius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region, available online at http://www.fs.fed.us/r2/projects/scp/assessments/wyomingpocketgopher.pdf.

[15] Center for Native Ecosystems, Forest Guardians, Michael C. McGowan, and Jacob Smith. 2003. Petition for a Rule to List *Thomomys talpoides macrotis* (Northern Pocket Gopher, subspecies macrotis) as Threatened or Endangered under the Endangered Species Act, 16 U.S.C. § 1531 et seq. (1973 as amended) and for the Designation of Critical Habitat. March 20, 2003; Armstrong, D.M. 1987. Rocky Mountain Mammals. Colorado Associated University Press.

[16] Chase, J.D., W.E. Howard, and J.T. Roseberry. 1982. Pocket Gophers. *In*: Wild Mammals of North America. Johns Hopkins University Press, Baltimore, MD.

[17] Keinath, D.A. and G.P. Beauvais. 2006. Wyoming pocket gopher (*Thomomys clusius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region, available online at http://www.fs.fed.us/r2/projects/scp/assessments/wyomingpocketgopher.pdf.

[18] *Id.*

[19] Bureau of Land Management. 2006. Scoping Notice, Continental Divide - Creston, Carbon County, Wyoming..

largely flat plane to a world with increased opportunities for raptor predation. In the event that Wyoming pocket gopher populations become small and/or isolated, even natural predation events could cause a marked population decline.[20]

Pocket gophers are strongly fossorial, living most of their lives in burrow systems and underground tunnels.[21] Based on the very limited information base, the Wyoming pocket gopher appears to segregate from northern pocket gophers by preferentially occupying dry, gravelly, shallow-soil ridge tops rather than deeper soiled swales and valley bottoms,[22] but this information is tenuous and useful mainly to inform further investigation. The long distance movement and dispersal capabilities of Wyoming pocket gophers are limited since they stay underground most of the time, foraging above-ground only at night or on overcast days.[23] Plus, the energetic costs of burrowing are high enough to be a physiological limitation to movement.[24]

Other species of pocket gophers may have longer-distance dispersals beneath snow, but this is unlikely for Wyoming pocket gophers because the species' preferred habitat is presumed to be dry ridges with low snow accumulation and wind scouring that tends to deposit existing snow in depressions.

A suitable landscape for Wyoming pocket gophers may be loosely defined as a dry upland with gravelly, yet still tractable, soils and relatively high productivity of grasses and forbs (high food availability). Given the species' small home ranges, the continuous area of such habitat capable of supporting a local population of Wyoming pocket gophers may be relatively small. However, long-term persistence of the gophers would likely depend on larger areas of such habitat arranged in patches of sufficient proximity to allow dispersal between patches. Other than coarse scale habitat availability, it is unclear what limits the structure and growth of populations. The extremely varied diets of various pocket gopher species have led to the conclusion that food is seldom a limiting factor in pocket gopher distribution, but the nature and amount of vegetation may affect local population densities.[25]

The Wyoming pocket gopher is known to occur only in Sweetwater and Carbon Counties in Wyoming. As its range is currently defined, the Wyoming pocket gopher appears to occur primarily on multiple-use lands managed by the BLM. These lands are extensively intermixed with parcels of private land. A variety of biological factors can make animals

[20]Wilcove, D.S. 1985. Nest predation in forest tracts and the decline of migratory songbirds. Ecology 66:1211-1214; Sinclair, A.R.E., R.P. Pech, C.R. Dickman, D. Hik, P. Mahon, and A.E. Newsome. 1998. Predicting Effects of Predation on Conservation of Endangered Prey. Conservation Biology 12:564.
[21] Keinath, D.A. and G.P. Beauvais. 2006. Wyoming pocket gopher (*Thomomys clusius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region, available online at http://www.fs.fed.us/r2/projects/scp/assessments/wyomingpocketgopher.pdf.
[22] Clark, T.W. and M.R. Stromberg. 1987. Mammals in Wyoming. University Press of Kansas, Lawrence, KS.
[23]Verts, B.J. and L.N. Carraway. 1999. *Thomomys talpoides*. Mammalian Species 618:1-11.
[24]Vleck, D. 1979. The energy cost of burrowing by the pocket gopher *Thomomys bottae*. Physiological Zoology 52:122-136.
[25] Miller, R.S. and R.A. Ward. 1964. Ectoparasites of pocket gophers from Colorado. The American Midland Naturalist 64:382-391.

intrinsically susceptible to disturbance, including narrow distribution, habitat specificity, restrictive territoriality and area requirements, susceptibility to disease, low dispersal capability, high site fidelity, and low reproductive capability. After reviewing available information, researchers considered the intrinsic vulnerability of Wyoming pocket gophers to be moderate due to highly limited distribution, limited dispersal ability, and the uncertainty surrounding many aspects of their biology.[26]

Small mammals with restricted distributions and/or narrow habitat requirements are more vulnerable than others to habitat loss.[27] The paucity of information regarding Wyoming pocket gophers requires extreme caution when proposing to disturb potential habitat. Habitat destruction is the primary threat to *T. clusius*. Habitat fragmentation and isolation also threaten *T. clusius.* Continued oil and gas development creates increasingly dense road networks, diminishes corridors for dispersal, and further separates populations. Roads act as barriers to finding mates, leading to inbreeding and loss of gene flow within individual populations. Habitat fragmentation results in shrinking islands of intact habitat with increased exposure to edge effects. The impacts of disturbances associated with oil and gas development will only increase under the February sale of parcels containing Wyoming pocket gophers and habitat.

Development is not just destroying and fragmenting habitat, it is also degrading it. Soil disturbances typical of oil and gas development projects, motorized vehicle impacts, and other activities are known to exacerbate the introduction and subsequent spread of noxious weeds. Noxious weeds limit population density in fossorial mammals.[28] In addition, herbicide use that invariably precedes and follows most forms of development also degrades pocket gopher habitat.[29] Finally, individual pocket gophers are killed in the pursuit of commercial and industrial development.

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[26] Keinath, D.A. and G.P. Beauvais. 2006. Wyoming pocket gopher (*Thomomys clusius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region.
Available online: http://www.fs.fed.us/r2/projects/scp/assessments/wyomingpocketgopher.pdf

[27] Hafner, D.J. 1998. Rodents of Southwestern North America. *In*: D.J. Hafner, E. Yensen, and G.L. Kirkland, Jr., editors. North American rodents: status survey and conservation action plan. IUCN/SSC Rodent Specialist Group, IUCN, Gland, Switzerland and Cambridge, U.K.

Hafner, David J., Eric Yensen, Gordon L. Kirkland, Jr., Joseph G. Hall, Joseph A. Cook, and David W. Nagorsen. 1998. "Executive Summary." In North American rodents: status survey and conservation action plan. D. J. Hafner, E. Yensen, and G. L. Kirkland, Jr., eds. IUCN/SSC Rodent Specialist Group, IUCN, Gland, Switzerland and Cambridge, U.K., x + 171 pp. Pp. 66-67. Pp.vii.

Hafner, David J. 1998. "Rodents of Southwestern North America." Ch. 3. In North American rodents: status survey and conservation action plan. D. J. Hafner, E. Yensen, and G. L. Kirkland, Jr., eds. IUCN/SSC Rodent Specialist Group, IUCN, Gland, Switzerland and Cambridge, U.K., x + 171 pp. Pp. 66-67. Pp. 10-17.

Hafner, David J. 2001. New Mexico Natural Heritage Program, pers. comm., 5 December 2001.

[28] Slobodchikoff, C.N., A. Robinson, and C. Schaack. 1988. Habitat use by Gunnison's prairie dogs. Pp. 403-408 in R.C. Szaro, K.E. Severson, and D.R. Patton, technical coordinators. Management of amphibians, reptiles, and small mammals in North America. Proceedings of the symposium. 19-21 July 1988, Flagstaff, Arizona. USDA Forest Service General Technical Report RM-166. November 1988. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins. 458.

[29] Reid 1973. "Population biology of the northern pocket gopher." In Pocket Gophers and Colorado Mountain Rangeland. Experiment Station Bulletin. Fort Collins, CO:Colorado State University. Pp. 21-41;

The Wyoming BLM assigned the Wyoming pocket gopher to its sensitive species list. The BLM developed the list to "ensure that any actions on public lands consider the overall welfare of these sensitive species and do not contribute to their decline". In addition, the Wyoming Game and Fish Department includes the Wyoming pocket gopher on a long list of species of concern under Wyoming's Comprehensive Wildlife Conservation Strategy.[30] The BLM's sensitive species management includes "developing conservation strategies" and "prioritizing what conservation work is needed." BLM's proposed approval of the Lost Creek ISR project in what has come to be identified through agency surveys as prime habitat does not indicate the agency is adhering to its own management standards.

The Wyoming Natural Diversity Database has assigned the Wyoming pocket gopher a rank of G2/S2.[31] The G2 refers to a relatively high probability of global extinction, based primarily on the species' extremely small global range. The S2 refers to a relatively high probability of extinction from Wyoming, based largely on range restriction, but also considering apparently low range occupation, uncertain abundance trends, and moderate biological vulnerability. Further, the Database assigned a Wyoming Significance Rank of Very High to the Wyoming pocket gopher, which reflects the extremely high contribution of Wyoming population segments to continental persistence of the species.[32]

To date, there are no management plans or conservation strategies pertaining explicitly to the Wyoming pocket gopher, although one status assessment has been drafted with support of the Wyoming BLM State Office and the Wyoming Natural Diversity Database.[33] There appear to be insufficiently described mechanisms by which conservation of Wyoming pocket gophers could be achieved should oil and gas development occur within their known and potential range. However, the primary

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Hansen, R.M. and A.L. Ward. 1966. Some relations of pocket gophers to rangelands on Grand Mesa, Colorado. Colorado Agricultural Experiment Station Technical Bulletin 88:1-22; Tietjen, H.P. 1973 Control of pocket gophers. Pp. 73-81 in Pocket Gophers and Colorado Mountain Rangeland; Chase, J.D., W.E. Howard, and J.T. Roseberry. 1982. Pocket Gophers. *In*: Wild Mammals of North America. Johns Hopkins University Press, Baltimore, MD; Miller, R.S. 1964. Ecology and distribution of pocket gophers (Geomyidae) in Colorado. Ecology 45:256-272; Tietjen, H.P., C.H. Halvoran, P.L. Hegdal, and A.M. Johnson. 1967. 2,4-D herbicide, vegetation, and pocket gopher relationships: Black Mesa, Colorado. Ecology 48(4):634-643.

[30] Wyoming Game and Fish Department. 2005. A Comprehensive Wildlife Conservation Strategy for Wyoming. Wyoming Game and Fish Department, Cheyenne, WY. Approved July 12, 2005.32
S.P. 1958. The bobcat of North America: its history, life habitats, economic status and control, with lists of currently recognized subspecies. The Stackpole Company Harrisburg, Pennsylvania and The Wildlife Management Institute, Washington, D.C., 193 pp.

[31] http://uwadmnweb.uwyo.edu/wyndd/; Keinath et al. 2003.

[32] Keinath, D.A. and G.P. Beauvais. 2003[a]. Wyoming Animal Element Ranking Guidelines. The Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.

Keinath, D.A., B.H. Heidel, and G.P. Beauvais. 2003[b]. Wyoming Plant and Animal Species of Concern: November 2003. The Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.

[33] Beauvais, G.P. and D. Dark-Smiley. 2005. Species assessment for Wyoming Pocket Gopher (*Thomomys clusius*) in Wyoming. Report prepared for the Wyoming State Bureau of Land Management, Cheyenne, Wyoming by the Wyoming Natural Diversity Database, Laramie, WY.

concern stated by most studies of the species is the lack of information on its biology and ecology. Without gathering the needed information, conservation mechanisms' efficacy cannot be determined.

Negative impacts of energy extraction operations on Wyoming pocket gopher and their implications for the species are named in virtually every scientific Wyoming pocket gopher (*Thomomys clusius*) conservation assessment and survey. Wyoming pocket gopher mitigation measures are essentially non-existent due to their extremely limited range and a paucity of scientific knowledge concerning its ability or inability to adapt to changing habitat conditions. BLM has failed to provide any analysis, whether field experiments or literature reviews, that describes if and how disturbance to *T. clusius* habitat would be "avoided." There is substantial new information in recent studies to warrant supplemental NEPA analysis of the impacts of oil and gas development to Wyoming pocket gopher. It is incumbent upon BLM to consider the most recent scientific evidence regarding the status of this species and to develop mitigation measures, if possible, which will ensure the species is not moved toward listing under the Endangered Species Act. It is clear from the scientific evidence and a total absence of meaningful BLM (state and federal levels), Wyoming Game and Fish, and U.S. Fish and Wildlife Service conservation measures for the Wyoming pocket gopher that current protections are non-existent, thereby allowing if not encouraging habitat degradation and destruction. New and continuing Wyoming pocket gopher survey information constitutes significant new information that requires amendment of the Resource Management Plans before additional oil and gas leasing can move forward.[34]

The Wyoming pocket gopher is at risk of extinction, and deserves protection under the Endangered Species Act. It may well be that the concentration of Wyoming pocket gophers documented in the Lost Creek project area is the greatest concentration of this species remaining in the world. Under the Lost Creek project, "Wyoming pocket gopher burrow complexes cane be expected to disappear in the disturbed areas for the life of the project." DEIS at 4.9-37. This is an unacceptable outcome because this will contribute to the need to list this BLM Sensitive Species under the ESA. BLM should identify all lands occupied by the Wyoming pocket gopher, buffer them by at least ¼ mile, and place them off-limits to surface disturbing or disruptive activities. This would fulfill BLM's obligations under its Sensitive Species policy.

Sage grouse

It is important to bear in mind that the present depressed population numbers for sage-grouse have led to the bird to its current predicament, teetering on the edge of Endangered Species listing. It is not sufficient merely to maintain sage grouse

[34] Keinath, D.A. and G.P. Beauvais. 2006. Wyoming pocket gopher (*Thomomys clusius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region, available online at http://www.fs.fed.us/r2/projects/scp/assessments/wyomingpocketgopher.pdf.

Keinath, D.A., H. Griscom, and A. Redder. 2008. Survey for Wyoming pocket gopher (*Thomomys clusius*) in central Wyoming. Report prepared for The Nature Conservancy - Wyoming Field Office by the Wyoming Natural Diversity Database - University of Wyoming, Laramie, Wyoming, available online at ftp://ftp.wygisc.uwyo.edu/pub/gis/wyndd/THCLReport07_15Feb07.pdf.

populations at their present low levels, or (worse yet) to allow additional population decreases resulting from agency-permitted projects or activities. Instead, the goal should be to recover sage-grouse populations to levels where populations are secure throughout Wyoming, and expanding populations and suitable habitats in regions of the nation where current populations are at risk.

All stakeholders throughout the West, whether their goal is sage-grouse recovery or merely avoidance of additional regulations, should be able to agree that sage-grouse recovery is an outcome that best provides certainty for both sage-grouse persistence and for industries that do business and communities who live within its range. At the same time, a strong sage-grouse conservation plan, founded in establishing core habitats where land uses are made compatible with maintaining healthy habitat, is the cornerstone for protecting not only the grouse itself but also a broad diversity of other sagebrush-dependent wildlife. Many of these species are also declining and may soon become candidates for ESA listing in the absence of a comprehensive conservation strategy.

Wyoming is the last remaining stronghold for the greater sage grouse, and clearly the Wyoming population, having become the core of the rangewide sage grouse population, offers the last best hope of preventing sage grouse extinction. GIS analysis shows that Wyoming has the largest expanse of least fragmented sagebrush habitat remaining in North America (Knick et al. 2003). According to Rowland et al. (2006:*v*), "Concomitant with the amount of sagebrush habitat, the Wyoming Basins area harbors some of the largest extant populations of sagebrush-obligate species, such as greater sagegrouse and pronghorn. Future persistence of these sagebrush-obligate species therefore is closely linked to effective management of sagebrush habitats in the Wyoming Basins." These researchers mapped sagebrush habitats versus fragmentation in relation to sage grouse in the Wyoming Basins Ecoregion (*see* p. 5-31), and found that the Red Desert is one of the remaining major hotspots. But sage grouse populations in the state have been on a long-term downward trend, still cycling upward and downward but both the peaks and the troughs in population are steadily being reduced over the past 50 years.

Sound science should drive conservation measures

When the State of Wyoming embarked upon its groundbreaking sage-grouse Core Area policy, it started with the right idea, identifying core habitats that supported the most abundant populations of sage grouse, and prioritizing these areas for protection. However, because a consensus-based collaborative group (the Sage-Grouse Implementation Team or "SGIT") was appointed by Governor Freudenthal to identify Core Areas and prescribe the conservation measures that applied there, representatives from the oil industry appointed to the SGIT were able to extract inappropriate concessions, both in terms of removing key habitats from Core Areas and in creating loopholes and lowering protection levels that apply both within and outside the Core Areas.

As a result, the Core Areas designated in the Powder River Basin likely are inadequate to prevent the extirpation of the species in this key linkage between populations in Montana and the Dakotas and the heart of the sage-grouse range. Populations elsewhere within

Core Areas are likely to decline or even disappear if industrial development proceeds there under current guidelines. These crippling weaknesses in the Wyoming plan render it unlikely to survive judicial scrutiny as an adequate conservation measure. The federal government can and must do better for federal lands. At present, the Lost Creek project represents a glaring example of the failures of the Core area policy as it is currently being implemented, and provides evidence that this policy, and related BLM sage grouse conservation efforts, do not constitute "adequate regulatory mechanisms" in the context of Endangered Species consideration. BLM must shore up the level of sage grouse protection for the Lost Creek project lest this project speed the sage grouse toward the Endangered Species list.

In his original 2008 Executive Order, Governor Freudenthal got it right: "New development or land uses within Core Population Areas should be authorized or conducted only when it can be demonstrated by the state agency that the activity will not cause declines in Greater Sage-Grouse populations."[35] This provision essentially required that the best available science be consulted, and if levels of proposed development exceeded science-based thresholds at which sage-grouse declines begin to occur, the development would not be allowable. This provision was removed in Governor Freudenthal's 2010 Executive Order, and was reinstated by Governor Mead in his own 2011 Sage Grouse Executive Order only in the context of defining a series of loophole-filled mitigation measures as not causing declines by definition (regardless of the actual population trend of the affected grouse). The BLM has the opportunity to redress this weakness of policy by ensuring that protections reflecting the biological needs of the species (rather than the interests of developers) will apply in Core Areas on BLM lands.

Science-based standards for energy development

Energy development poses perhaps the greatest single threat to sage-grouse persistence across the eastern half of its range. To date, most of the science developed has focused on oil and gas drilling and production. But in situ uranium production has similar, if not identical, impacts. In each case, wells are drilled to pump fluids into and out of the ground. Each well has a wellsite, unless directional drilling and well clustering is employed, for both uranium ISR and oil and gas development. A network of roads and pipelines connects the wellsites in the case of both energy sources, fragmenting habitats. Construction-phase disturbance provides elevated levels of impacts and noise in both cases. Throughout the production life of the operation, vehicle traffic and human presence throughout the wellfield are required for both gas fields and uranium ISL projects, driving grouse and other wildlife away from developed areas and access roads. The chief differences between a gas field and an ISR field is that the ISR field has a much greater density of well sites, and the well sites are smaller in area with less associated equipment. Given the well density of ISR being greater and more intense, it is reasonable to project that impacts from ISR operations will be at least as great or greater than those of conventional gas production, and that the distances of disturbance and avoidance from roads and facilities will be at least as great if not greater for uranium ISR fields.

[35] State of Wyoming Executive Order 2008-2, ¶ 3.

Walker et al. (2007) found that sage-grouse habitat within 4 miles of a lek site was important to the persistence of the lek. Conversely, Walker et al. (2007) concluded that leks heavily impacted by oil and gas development "typically became inactive within 3-4 years." Harju et al. (2008) found a time lag of 2-10 years post-development, at which point negative effects became evident. The same is true for winter habitats. Indeed, Naugle et al. (2006) found that a model using habitat variables and coalbed methane development provided a near perfect fit for grouse distribution data. In the Powder River Basin, CBM well density within a 4 km^2 area provided the best fit for modeling sage-grouse habitat use (Doherty et al. 2008). Holloran (2005) found that well densities greater than one well per 699 acres were correlated with lek declines. Doherty et al. (2010) did a statewide analysis in Wyoming and found that well densities greater than 1 well per square mile were correlated with sage-grouse declines.

Walker et al. (2007) found that coalbed methane development within 2 miles of a sage-grouse lek had a negative effect on lek attendance. Holloran (2005) found that active drilling within 3.1 miles of a lek reduced breeding populations, while wells already constructed and drilled within 1.9 miles of the lek reduced breeding populations. In Canada, Carpenter et al. (2010) found that sage-grouse strongly avoided oil and gas infrastructure to a distance of 1.9 km, and avoided two-track vehicle trails more weakly to a distance of 1.5 km; the closest that a grouse was located to a coalbed methane well in this study was 1,293m. Harju et al (2008) found that negative impacts of development on lek populations extended 4.8 km (3 miles) from the development. Both Holloran (2005) and Walker et al. (2007) documented the extirpation of breeding populations at active leks as a result of oil and gas development in the Upper Green River Valley and Powder River Basin, respectively. Rowland et al. (2006: A4-3 through A4-7) provide a useful literature review of the distance that impacts spread beyond the edge of disturbed areas into adjacent habitats. Males use shrubs <1 km (0.6 mi) from a lek for foraging, loafing, and shelter (Rothenmaier 1979, Emmons and Braun 1984, Autenrieth 1981). In Wyoming, State and BLM policies erroneously use this as a basis for an 0.6-mile No Surface Occupancy buffer around leks. However, there is no science to indicate that preventing wells within 0.6 mile of a lek will eliminate negative population impacts on sage grouse. In fact, the 1.9-mile buffer is the minimum amount found to be needed to avoid negative impacts to breeding grouse by Holloran (2005), and indeed, to protect the nesting hens that site their nests within 5 miles of a lek, an even larger buffer is needed.

The area closest to a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. One scientist described the lek site as "the hub from which nesting occurs" (Autenreith 1985). Grouse exhibit strong fidelity to individual lek sites from year to year (Dunn and Braun 1986). During the spring period, male habitat use is concentrated within 2 km of lek site (Benson et al. 1991). A Montana study found that no male sage grouse traveled farther than 1.8 km from a lek during the breeding season (Wallestad and Schladweiler 1974). Other researchers found that 10 of 13 hens nested within 1.9 miles of the lek site during the first year of their southern Idaho study, with an average distance of 1.7 miles from the lek site; 100% of hens nested within 2 miles of the lek site during the second year of this study, with an average distance from lek of 0.5 mile (Hulet et al. 1986). In Montana, Wallestad and Pyrah (1974) found that

73% of nests were built within 2 miles of the lek, but only one nest occurred within 0.5 mile of the lek site. Holloran (2005) found that 64% of sage grouse nested within 3.1 miles of a lek in western Wyoming, and Walker et al. (2007) found that sage grouse habitat within 4 miles of a lek site was important to the persistence of the lek. Doherty (2008) found that 97% of sage grouse nests were within 10 km (6.21 miles) of a lek. Aldridge and Boyce (2007) found a curvilinear relationship in which 90% of nests were predicted within 10 km of a lek. This is significant because Dzialek et al. (2011) found that nests closer to wells were at greater risk of nest failure, likely due to increased predation associated with anthropomorphic disturbance, and recommended that new oil and gas well be sited at least 1.6 km from the nearest nesting habitat.

According to Doherty (2008:51-52),

> "Impacts of energy development to sage-grouse populations are well documented (Naugle et al. *in press*) but nesting response to full development could not be thoroughly investigated here because severity of CBNG development to leks in the PRB (Walker et al. 2007:52) left too few birds to monitor inside gas fields. The best energy development predictor for birds that nested on the edge or within low levels of CBNG development increased model fit (-16.72 units) of my AIC best habitat model (Table 4). This finding is equivocal because an independent test of this model did not support inclusion of distance to road to the AIC best habitat model. My inability to validate findings or capture large samples of sage-grouse in fully developed fields is not surprising because Holloran et al. (2007) reported high female nest site fidelity, but lower survival of nesting adult sage-grouse in gas fields combined with avoidance of infrastructure by yearlings resulted in a time lag of 3-4 years between the onset of development activities and lek loss (Holloran 2005). The time lag observed by Holloran (2005) in the Pinedale Anticline in southwest Wyoming matched that for leks that became inactive 3-4 years following CBNG development in the PRB (Walker et al. 2007)."

It is therefore critical to protect not just the lek itself, but a substantial amount of the nesting habitat surrounding the lek, through No Surface Occupancy buffers. We recommend, based on the findings of Holloran, NSO buffers of 2 miles around the lek with additional Timing Limitation Stipulations extending 3 miles from the lek during the breeding and nesting season.

Nesting activities can also be impacted. In a study near Pinedale, sage grouse from disturbed leks where gas development occurred within 3 km of the lek site showed lower nesting rates (and hence lower reproduction), traveled farther to nest, and selected greater shrub cover than grouse from undisturbed leks (Lyon 2000). According to this study, impacts of oil and gas development to sage grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. Pump and

compressor noise from oil and gas development may reduce the effective range of grouse vocalizations; low-frequency noise from wind turbines could have a similar effect. A consortium of eminent sage grouse biologists recommended, "Energy-related facilities should be located >3.2 km from active leks" (Connelly et al. 2000). And Dr. Clait Braun, one of the world's most eminent experts on sage grouse, has recommended even larger NSO buffers of 3 miles from lek sites, based on the uncertainty of protecting sage grouse nesting habitat with smaller buffers.

Holloran (2005) found that active drilling of a well within 3.1 miles of a lek had a negative impact on lek attendance, while the presence of a producing well (absent construction/drilling activity) within 1.9 miles of a lek had a significant negative effect on lek attendance. Walker et al. (2007) found that sage grouse habitat within 4 miles of a lek site was important to the persistence of the lek. Conversely, Walker et al. (2007) concluded that leks heavily impacted by oil and gas development "typically became inactive within 3-4 years." Harju et al. (2010) examined effect of distance from well(s) on lek attendance and found variable results in different study areas. According to Harju et al. (2010), in the Moxa area, significant negative impacts extended out to ¼ mile from leks; in the Wamsutter area, negative impacts of wells extended out to ¾ mile from leks; in the Pinedale area, negative impacts extended out to 1 mile; in the Bighorn Basin and Powder River areas, significant effects extended all the way out to 2¾ miles, which was the maximum distance studied. Meanwhile, in the Sage Hen (Wind River Basin) and Shirley (Basin) sites, no significant effects were found, with no leks within ¼ mile of development for Sage Hen or within ¾ mile of leks for Shirley. Holloran et al. (2010) found that yearling females avoided nesting within 950m of wells, while yearling males avoided leks near energy infrastructure, and those that did lek near oil and gas wells had a higher mortality rate and lower probability of establishing a breeding territory.

Road construction related to energy development is a primary impact on sage-grouse habitat from habitat fragmentation and direct disturbance perspectives. Rowland et al. (2006) modeled sage-grouse distribution, and reached the following conclusions:

> "The secondary road network is a highly significant factor influencing processes in this landscape and is being developed and expanded rapidly across much of the WBEA (Thomson et al. 2005). Secondary roads are being built as part of the infrastructure to support non-renewable energy extraction (Chapters 2, 4). For example, within the Jonah Field in the Upper Green River Valley, >95% of the area had road densities >2 mi/mi^2 (Thomson et al. 2005)."

p. 5-10. Furthermore,

> "The dominant feature affecting output of the sage-grouse disturbance model was secondary roads, which occupy nearly 8% of the study area (Table 5.2) and are presumed to negatively influence an even larger extent."

Pp. 6-15 through 16. Holloran (2005) found significant impacts of road traffic on sage-grouse habitat use, concluding that habitat effectiveness declined in areas adjacent to roads with increasing vehicle traffic, documenting the secondary effect referenced by Rowland et al.

In winter, sage grouse select large expanses of sagebrush with gentle topography and avoided conifer, riparian, and energy development (Doherty 2008). Well density had an additional effect in this study (id.). Sage grouse were 30% more likely to use winter habitat if CBM development was not present (id.). There was a landscape-scale effect of habitat selection, with areas with greater sagebrush at a 4 km^2 scale receiving greater winter use (id.). Carpenter et al. (2010) found a similar relationship in Alberta, and found that grouse avoided oil and gas wells by 1.9 km. Bruce et al. (2011) found that sage grouse moved widely across winter habitats, using an area of 1,480 km^2, and recommended setting aside large reserves for winter habitats.

A number of researchers have noted a time lag between initiation of mineral development and sage-grouse population declines. Holloran et al. (2010) noted that yearling males avoided lekking near oil and gas infrastructure, and that yearling females avoided nesting within 950m of oil and gas infrastructure. Thus, the time lag in populations appears to be driven by the exodus of yearlings from affected areas, while older birds persist close to development until they die off. These researchers stated, “Our results…suggest to land managers that current stipulations on development may not provide management solutions.”

As a rule, breeding and nesting activity are concentrated in the habitats surrounding the lek site. In a Montana study, Wallestad and Schladweiler (1974) found that no male sage grouse traveled farther than 1.8 km from a lek during the breeding season. But following breeding, males may make long migrations to distant summer ranges (Connelly et al. 1988). Hulet et al. (1986) found that 10 of 13 hens nested within 1.9 miles of the lek site during the first year of their southern Idaho study, with an average distance of 1.7 miles from the lek site; 100% of hens nested within 2 miles of the lek site during the second year of this study, with an average distance from lek of 0.5 mile. In Montana, Wallestad and Pyrah (1974) found that 73% of nests were built within 2 miles of the lek, but only one nest occurred within 0.5 mile of the lek site. But in Bates Hole, Wyoming, Holloran (1999) found that average nesting distance from lek site was 3.25 km for adults and 5.27 km for yearlings. Wakkinen et al. (1992) cautioned that leks were poor predictors of sage-grouse nest sites; although 92% of sage-grouse nested within 3.2 km of a lek in this study, sage-grouse did not necessarily nest near the same lek where breeding took place.

Lyon (2000) pointed out that quarter-mile lek buffers were insufficient to maintain the viability of grouse populations. Several years ago, a multi-state group of fish and game biologists evaluated the standard BLM mitigation measures for grouse, and found them wholly inadequate (Christiansen and Bohne 2007). Connelly et al. (2000) recommended that sage-grouse habitat should be protected within 3.2 km of lek sites under ideal habitat conditions, within 5 km when habitat conditions are not ideal, and within 18 km where sage grouse populations are migratory. Furthermore, these researchers stated that in areas

where 40% or more of the original breeding habitat has been lost, all remaining habitat should be protected. Holloran (2005) provided a critical test of BLM's lek buffers' effectiveness in the Jonah and Pinedale Anticline fields, and found that in the face of full-field gas development, finding that extirpation was expected for sage-grouse in both fields within 19 years if conditions remained the same (and, of course, conditions have become much worse for grouse under the continued intensification of drilling and road construction in these two fields).

Wellsite Densities

Holloran (2005) found that when wellfields reached densities greater than one well per 699 acres reduced the breeding populations of males at lek sites. Doherty (2008) determined that there was a significant decline in lek populations statewide once wells exceeded 1 well per square mile, but was unable to detect a statistically significant difference at well densities below 1 per square mile. Specifically, the analysis showed a 17% increase in lek inactivity at the 4-year time lag state, but this increase was statistically insignificant when the data from Zones I and II were pooled. Notably, when the analysis was restricted to Zone II (southwestern Wyoming), a statistically significant 14% increase in lek inactivity with the 4-year time lag was detected at low densities of wells (1-12 wells per 32 km^2). It is notable that when leks that switched from low-well density (1-12/30 ha) to medium or higher (13+), there was no longer a statistically significant difference. Doherty acknowledged (at p. 77) that low sample sizes in all categories other than control lead to a higher likelihood of a Type II error, in which differences exist but are not identified as statistically significant. This analysis did not test the impact of distance to wells or distance to roads at all, and thus no conclusions can be inferred about the impacts of wells and roads sited close to leks at low densities of wells. These findings were later published as Doherty et al. (2010). Harju et al. (2010) found that lek population declines ranged from 13% to 79% at 4 to 8 wellpads per square mile, depending on locale.

Holloran (2005) found that well densities greater than one well per 699 acres were correlated with lek declines. Doherty et al. (2010) did a statewide analysis in Wyoming and found that well densities greater than 1 well per square mile were correlated with sage grouse declines. Modeling by Taylor et al. (2012) determined that drilling a previously undeveloped landscape to a density of 4 to 8 wells per square mile would be predicted to cut sage grouse populations in half. Well densities can also interact with West Nile virus to accelerate sage grouse declines. Taylor et al. (2010) modeled sage grouse population dynamics and determined that increasing well densities from current levels (almost none) to 160-acre spacing in the Carter unit could result in a 97% decline of sage grouse populations and the loss of all leks with more than 10 males in the face of a West Nile virus outbreak. Notably, the increase of well density to 640 acre spacing in this area would be predicted to decrease populations by 11 percent in the absence of West Nile virus, so allowing well densities at 640-acre spacing is not harmless to sage grous populations (id.). Similarly Taylor et al. (2012) found that as well densities increase to 8 wells per square mile in the Powder River Basin of Wyoming, a single West Nile virus outbreak is likely to reduce active sage grouse leks from 360 to 6. Importantly, Schrag et

al. (2011) examined climate models and predicted increased risk of major West Nile outbreaks over current risk levels.

Under current state and BLM Core Area standards in Wyoming, disturbance thresholds are set at five percent of the land area within a DDCT zone, beyond which additional surface disturbance is not permitted. However, the five percent disturbance threshold corresponds with oil and gas well densities that are far beyond the point where sage-grouse declines occur. For example, under the Continental Divide-Wamsutter Project, 3,000 wells were initially proposed with 22,400 acres of new surface disturbance, representing 2.1 percent of the planning area with an average well density of 4 wellsites per square mile (BLM 2000); today, sage-grouse are virtually extirpated in this field, although more than 50 leks existed prior to the project. In the Atlantic Rim coalbed methane field, 2,000 wells were permitted at a density of eight wells per square mile, far above the threshold known to cause sage grouse declines. The projected surface disturbance for this project is 15,800 acres, or 5.85% of the project area (BLM 2005). Clearly, a threshold of five percent is too high to sustain sage-grouse. Assuming a 10-acre multi-well wellpad and 0.75 miles of road per square mile – a generous figure (at 9.85 acres per mile of road), the estimated surface disturbance for a wellfield at one well per square mile would be 2.7 percent. Thus, a one- to three-percent disturbance threshold is more reasonable. Thus, even if the percentage of surface disturbance, watered down through the use of the DDCT, is below the 5 percent threshold in the Governor's Executive Order and IM 2010-12, impacts to sage grouse populations remain likely.

The Lost Creek Project and sage grouse

BLM points to lek and raptor surveys being conducted in 2006, 2007, 2008, 2009, and 2010. DEIS at 3.8-21. The EIS also references baseline data collected from 2007-2011 "providing a reference to compare future population trends and habitat use." DEIS at 4.9-7. The results of these lek counts do not appear in the Draft EIS. Yet IM 2010-12 clearly spells out that BLM must gather these data:

> BLM and WGFD will meet at least annually to coordinate and review the accuracy of data and incorporate the most up-to-date information. For data to be included in the database, it must be collected using techniques and accuracy standards agreed upon by WGFD and BLM. Annual lek surveys and lek counts will be coordinated between WGFD and the BLM to reduce duplicated efforts and minimize disturbance in accordance with the Umbrella MOU.

IM 2010-12 at 10. Data should have been available to BLM, as it was posted online as part of the project file for the mine permit.[36] This is critically important baseline information that is needed to adequately satisfy NEPA's 'hard look requirements. It is our understanding that due to elevated traffic levels associated with the preliminary stages of this project, sage grouse lek counts have already declined precipitously in the vicinity of the Project Area. BLM needs to disclose this important information in the EIS.

[36] http://deq.state.wy.us/eqc/orders/Land%20Closed%20Cases/11-4803%20Lost%20Creek%20ISR,%20LLC/AttD9_4_CrkdWellLek_Oct09.pdf, site last visited 6/6/12.

BLM has also failed to identify the wintering habitat used by sage grouse inhabiting the project area. According to BLM, "Locations from 30 individual radio-equipped females were documented during the winter of 2010; however, no detailed on-the-ground surveys for winter Greater sage-grouse use have been completed in the Permit Area." DEIS at 4.9-39. Nevermind the surrounding lands that will be affected by disturbances originating inside the Permit Area or resulting from traffic along the access roads. BLM has not determined whether this is a migratory or non-migratory population, and whether the Project Area contains wintering habitats crucial to the survival of either grouse on resident leks within 2 miles of the permit area or migratory grouse that move in from other parts of the red desert to winter here. This failure to survey for wintering habitat violates NEPA's baseline information requirements and prevents BLM from making informed decisions on whether, where, or how to site the project and what mitigation measures are needed to minimize impacts.

The truck traffic associated with this project is substantial. BLM forecasts 339 to 349 light trucks or SUVs per week and 6 to 15 tractor-trailer rigs driving to and from the site each week, in addition to the 124 vehicles to be stationed at the site for more than a week at a time. Table 4.3-1, Draft EIS at 4.3-4.

Reliance on adaptive management (DEIS at 4.9-7) offers cold comfort. Once statistically significant declines are finally recorded (watered down as they are with a three-year weighted average), the available options for correcting the problem are limited to relatively toothless and minor adjustments to traffic and noise that will likely not address the root of the problem: the industrialization of sage grouse habitats. And at that stage, removing roads, wells, and pipeline infrastructure will not be considered. And off-site "compensation mitigation" proposed in the EIS has no demonstrable positive effect. The BLM has overseen the expenditure of tens of millions of dollars of offsite mitigation monies tied to the Jonah and Pinedale Anticline Fields. The agency's reliance on this mitigation measure demands that its effectiveness be evaluated based on past performance. There is a track record to be mined from oil and gas development in the Upper Green River Valley. Please disclose in the Final EIS the off-site mitigation projects involving sage grouse habitat, the sage grouse population changes resulting from such projects, and the relative success rate based on number and degree of instrances where sage grouse populations increased in a statistically significant manner as a result of an off-site mitigation project.

The three-year weighted average is also potentially problematic. Sage grouse population responses to negative impacts can take 4 years to manifest themselves. By the time a three-year weighted average records a change (because the first two years of data in which there is no change may swamp the one year of decline, causing a year in which a decline is recognizable but as a pooled average is statistically insignificant) paired with the delay in seeing a numerical response, the tipping point where remedial action will do much good may long be past.

We do not support the use of wing barrels as an index to population (DEIS at 4.9-18), as these are too sensitive to hunter effort, which readily skews the data. A handful of hunters who hunt aggressively in either the treatment or control area would give the appearance of a population change where none existed, or mask the existence of an actual population change. Also, the expected hunter avoidance of the project facilities (just as sage grouse do) may be problematic.

The project will contain a number of components that generate noise pollution, including equipment on site and trucks using the access roads. *See* DEIS at 4.12-4. The impacts of noise-generating equipment have not been analyzed either at the level of lek sites or nesting habitat for sage grouse. This analysis needs to be completed.

BLM argues that project activity, including initial exploration and construction, would occur outside the breeding and nesting season. DEIS at 4.9-28. Yet "Production and maintenance activity (Project operation) would be exempted from this timing restriction." *Id.* Referencing the earlier NRC EIS, BLM itself admits that "the Operation phase could disrupt the reproductive stage of Greater sage-grouse nesting near the Project infrastructure" DEIS at 4.9-39. This would result in "localized significant impacts." *Id*. It is all very well to have a moratorium on construction and exploration activity within the breeding and nesting season, but experience with oil and gas development, which is directly comparable to ISR uranium mining (beyond the obvious comparison that intensity of road and wellsite development is even greater for ISR uranium than for oil and gas) has proven definitively that these timing limitations that affect construction/exploration but not production are <u>essentially useless</u> for the conservation of sage grouse. If the sage grouse are going to return to breeding and nesting habitat in the spring to find high-density industrial development replete with human activity and vehicle traffic, the habitat effectiveness for breeding and nesting is destroyed and breeding and nesting populations disappear, as predicted in BLM's DEIS. It insults the intelligence of the reader for BLM to continue to cling to the outright falsehood that timing limitations that bind initial construction, but not production operations throughout the life of the project, will preserve habitat effectiveness for sage grouse. BLM undermines its credibility by trotting out this scientifically disproven and completely discredited assertion in the context of the Lost Creek ISR Project.

Failure to comply with IM 2010-12

BLM takes pains to assert that this project is in compliance with the Governor's Executive Order 2011-5 governing sage grouse Core Areas. DEIS at 4.9-7.

The Governor's sage grouse Executive Order grants a loophole for mining operations in some cases; the BLM instruction Memorandum does not. This policy clearly includes uranium in situ mining: "The policy applies to <u>all programs and activities occurring on public lands and Federal mineral estate in Wyoming</u>, except for livestock grazing management within the range management program, because recommendations and policy regarding grazing patterns will be issued separately." IM 2010-12 at 1, emphasis added. Under this policy,

> **Sage-grouse leks inside Core Areas:** Surface disturbing activity or surface occupancy is prohibited or restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied or undetermined sage-grouse leks.

IM 2010-12 at 2; *and see* Surface Activity Restrictions for the Protection of Wildlife, DEIS at 4.9-6. The construction or upgrading of access roads certainly counts as "surface occupancy" under this IM, and thus the siting of access roads within 0.6 miles of access leks is not permitted. BLM argues on the one hand that main hauling roads would not be located within 1.9 miles of active sage grouse leks, but then makes the case that reconstructing haul roads that existed prior to the 2008 Executive Order is allowable as such roads would be "grandfathered." DEIS at 4.9-7. Upgrading two-track jeep trails to high-standard gravel roads suitable for heavy hauling use does not meet this definition of "grandfathering."

Furthermore the project does not comply with federal restrictions on the density of energy faciluities:

> Inside Core Areas, the density goal includes:
>
> • maintenance of sagebrush communities by maintaining or reducing the existing level of density of energy production and/or transmission structures on the landscape, or
>
> • to not exceed one energy production location and/or transmission structure per 640 acres. The one location and cumulative value of existing disturbances in the area will not exceed 5 percent of sagebrush habitat within those same 640 acres.

IM 2010-12 at 4. Clearly, this project entails far more than one energy production location per square mile; the density of production wells will exceed one every 200 feet. For example, injection wells will be spaced 75 to 150 feet apart. DEIS at ES-5. The NRC EIS shows an example Mine Unit with 43 wells in less than a half a square mile; there will be 9 mine units planned for the project. Figure 1.2-3 appears to show 59 production well sites in a single mine unit, covering a similar land area. DEIS at 1-7. Under Conservation Objectives, the policy notes, "In Core Areas, the goal is to maintain or enhance sage-grouse populations." IM 2010-12 at 7. The Lost Creek project cannot meet this objective. In fact, BLM concedes, "Based on available information, it can be conservatively anticipated that at least some Project activities within the Permit Area would negatively influence populations [of sage grouse]." DEIS at 4.9-9. The IM also includes the following direction: "Field Offices will work with project proponents (including those within BLM) to site their projects in locations that meet the purpose and need for their project, but have been determined to contain the least sensitive habitats whether inside or outside of Core Areas." IM 2010-12 at 8. With regard to access roads, the BLM has clearly missed the mark in choosing the location, while BCA's proposed routes in these comments actually conform to the policy direction therein.

BLM attempts to circumvent the one location per 640 acres limit with several "Specific Stipulations" that rationalize the high density of locations by delineating the "area of

disturbance" collectively, and reclassifying multiple energy production locations as a single one "delineated by the external limits of the development area." DEIS at 4.9-31. This is not a valid methodology, is dishonest, and attempts to circumvent the very purpose of the site density limit, which is to ensure that sage grouse habitat in the area being developed continues to remain fully functional. Thus, BLM's Stipulation that these clusters of energy production locations will count as a single one for the purpose of meeting requirements in IM 2010-12 and the Governor's Executive Order (*see* DEIS at 4.9-31) fails.

Variances to this policy are provided for in the IM, but only in circumstances where locally available science justifies them:

> Because Wyoming is such a diverse State, there may be occasional, special circumstances which could justify deviation from the policies stated herein. Field Offices may vary from this policy **where locally collected scientific data supported by comprehensive, objective NEPA analysis of a proposed action presents compelling justification for variance.**

IM 2010-12 at 11, emphasis in original. No such special circumstances or compelling scientific justification have been presented in the EIS to justify a deviation from BLM policy in this case.

Fences associated with the project are likely to be an additional source of mortality for sage grouse throughout the life of the project. DEIS at 4.9-39. And while these fences are not likely to be constructed within the 0.6-mile lek buffer that is the loafing habitat for male grouse using the lek for breeding purposes, they are likely to be constructed inside the 2-mile buffer of most intense nesting activity and the 5-mile buffer of nesting habitat use that surround each occupied lek. Thus, this adds to the severity of impact of a project already to high-impact to be sited within a sage grouse Core Area.

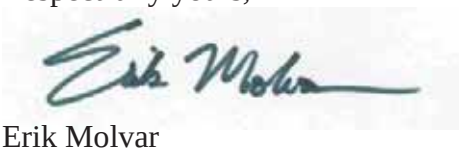
BLM asserts that although the Proposed Action "may impact Greater sage-grouse leks near the Permit Area, the currently proposed approach is considered to cause the least impact." DEIS at 4.9-31. This conclusion is false on several counts. First of all, the No Action alternative does not allow the upgrading of jeep trails to roads within 0.6 or 1.9 miles of leks, does not place overhead powerlines in proximity to leks and nesting habitat, and does not permit the construction of energy production locations at a density far greater than one per 640 acres not only within sage grouse Core Areas, but also within 2 miles of occupied leks within Core Areas. This alternative clearly is of lower impact. Secondarily, BLM has the option to relocate the access roads to alignments that remain 2 miles or more from all occupied leks, as recommended by BCA, which would be a lower-impact alternative to constructing roads that not only run within 0.6 mile of occupied leks but are located within 2 miles of occupied leks along practically their entire lengths. See Figure 2.2-3. Finally, requiring underground burial of powerlines within 5 miles of leks to protect not only the lek but also associated nesting habitat from raptors that perch on powerline poles, even in the presence of perch inhibitors, would have a lower impact than

allowing overhead powerlines in these areas, particularly if they follow access rods which currently (as mentioned above) are located almost entirely in the key nesting habitat within 2 miles of the occupied leks.

Conclusion

Based on the characteristics of this in-situ uranium project, in terms of wellsite density, proximity of roads to the 0.6-mile lek buffer and proximity of primary haul roads to the 1.9-mile lek buffer, and failure to bury powerlines absent a finding that this action would not be possible, the Proposed Action cannot be approved because it conflicts with the Governor's Executive Order 2011-5 and Wyoming BLM IM 2010-12, both of which purport to guide Core Area habitat protections for sage grouse. It is important for BLM to bear in mind that by violating the principles and absolute terms of these policies, it would show that the state and federal agencies have no intention to actually apply the prescribed protections for Core Areas, thereby undermining the assertion that these selfsame protections constitute adequate conservation measures than can be relied upon to avert Endangered Species listing for the grouse. Additional measures are also necessary to protect pygmy rabbits and Wyoming pocket gophers, which have not been envisaged to this point. For these reasons, BLM must at this point approve the No Action Alternative in order to remain legally compliant.

Respectfully yours,



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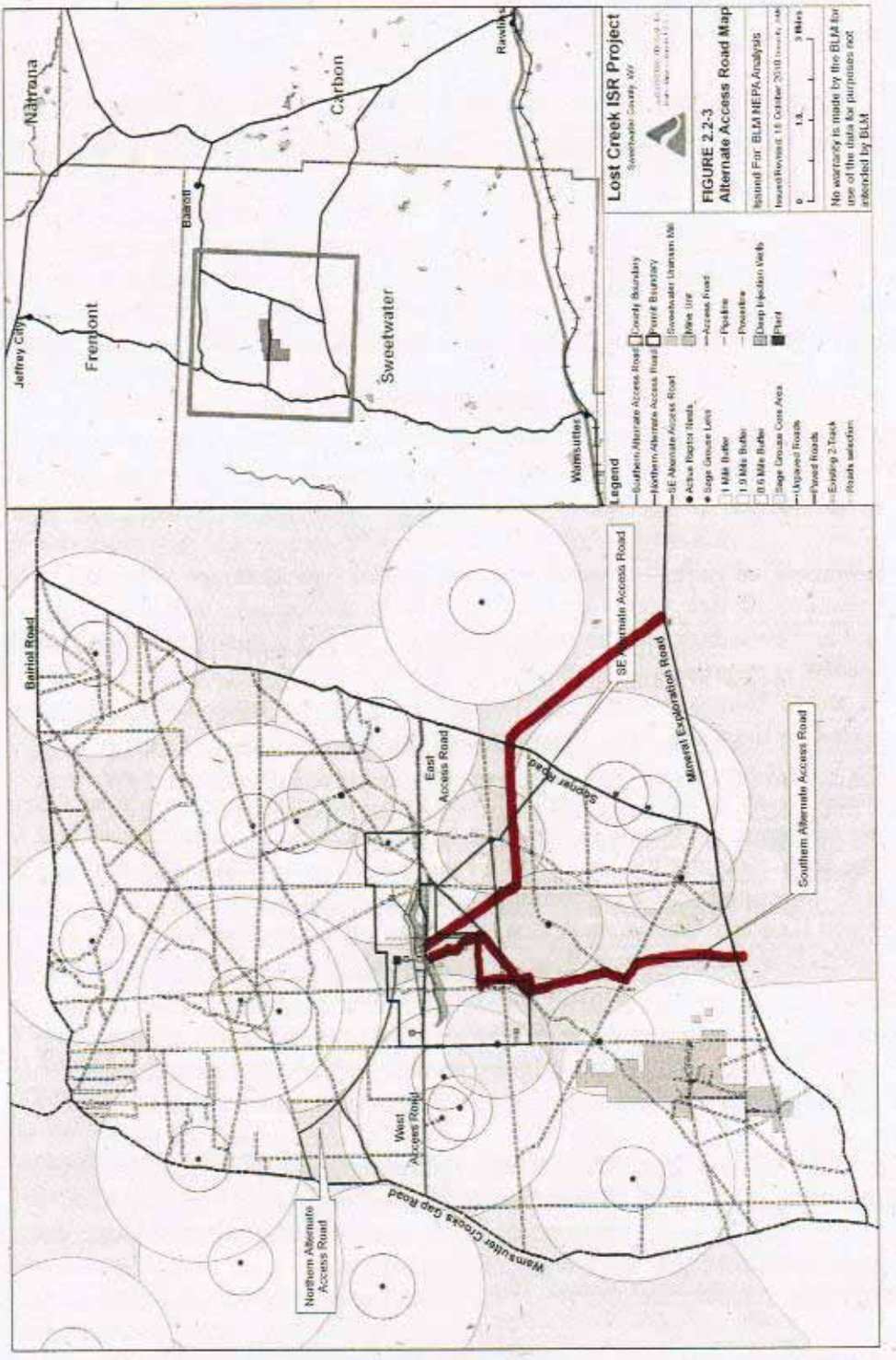

Attachment 1
BIA Comments

SWEETWATER COUNTY CONSERVATION DISTRICT

Mary Thoman, Chairman Tom Burris, Vice Chairman Jean Dickinson, Secretary Henry Bliss, Treasurer Bob Slagowski, Member

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June 11, 2012

VIA E-MAIL Lost_Crk_Mine_WY@blm.gov

Dennis J. Carpenter
Lost Creek ISR Project Field Manager
Bureau of Land Management, Rawlins Field Office
1300 North Third Street
P.O. Box 2407
Rawlins, Wyoming 82301

Re: Comments on Lost Creek In Situ Recovery Project's Draft Environmental Impact Statement by the Sweetwater County Conservation District

Dear Mr. Carpenter,

These comments are submitted on behalf of the Sweetwater County Conservation District (SWCCD or the District). The District appreciates the opportunity to comment. It is the goal of SWCCD to encourage mineral and energy resource exploration and development in the County. SWCCD LRUPP at p.32, Goal 1 (Feb. 2011). Since mineral development does provide for approximately 75 percent of Sweetwater County's economic base, the District supports the Lost Creek In Situ Recovery (ISR) Project. *See* SWCCD LRUPP at p.33, Goal 6 ("Support the beneficial mining efforts and their economic impacts or effects and encourage mining and milling efforts on private and public lands."). These comments identify the significant issues and points of disagreement or concern with the Draft Environmental Impact Statement (DEIS).

Lost Creek ISR, LLC is proposing the construction, commercial operation and reclamation of facilities for ISR operations within the Lost Creek Permit Area (4,254 acres), which is in the northeast portion of Sweetwater County. Under the proposed action, about six million pounds of uranium would be produced over seven years. The total project would extend over a 12-year period, including about seven months for initial construction, seven years for production, and the remaining time for reclamation. The project surface disturbance is about 345 acres, with the majority of which will be on federal land.

1. Potential Impacts on Water Resources

The SWCCD land plan supports protection and use of water rights and water resources. SWCCD LRUPP at p.37, Goal 1 and 2. The plan adopts equally strong support for protection of water quality and protection of water resource development. *Id.* at p.39, Objective 2A ("Ensure that land use inventory, planning or management activities affecting point or nonpoint sources

and water quality in Sweetwater County, either directly or indirectly, are coordinated through the District and are consistent with the Plan.").

a. *Potential Impacts on Existing Ephemeral Channels*

The permit area provides rangeland for several county ranches and includes portions of the Stewart Creek, Cyclone Rim and Green Mountain allotments. The ranches depend on water for their livestock. The area is very much a high desert, where water sources may be relatively small in the form of ephemeral drainage but are nevertheless very important for livestock.

BLM policy manages riparian areas under the same policies as for floodplain and wetland protection. *See e.g.* Rawlins RMP at 2-42, 2-50 ("Surface disturbing activities will avoid identified 100-year floodplains, 500 feet from perennial surface water and/or wetland and riparian areas. . . ."). Thus potential impacts on springs, seeps, and water resources should be treated the same. The DEIS indicates that BLM would apply a 100-foot instead of a 500-foot buffer from the core of ephemeral channels. DEIS at 2-58, 4.6-1. The District questions this stipulation, because ephemeral channels are managed as riparian areas for purposes of rangeland health and are ephemeral due largely to the lack of precipitation in the region, rather than the lack of hydrologic connection. *See e.g.* Rawlins RMP, Glossary-6 Definition of Ephemeral Channels ("A defined channel formed in response to ephemeral surface flow conditions. Defined channels typically can be defined by an abrupt bank along a water flow path with evidence of scouring, sorting, and/or vegetation removal during flood events."). Riparian areas are also defined by vegetation. *Id.* If riparian areas are subject to a 500-foot buffer then similar vegetation in an ephemeral area should be subject to the same buffer.

b. *Nonpotable Water Impacts*

The permit area should be subject to stipulation that will protect other nonpotable water, which may be used for other mineral and energy development such as for oil and gas, from adverse impacts. While current stipulations put in protections for the BLM stock wells outside the permit area, DEIS at 4.7-8, the DEIS does not adequately address the potential impacts on nonpotable water from drilling and pumping. In situ uranium mining depends on access to water and the drilling and pumping may adversely affect wells and/or aquifers providing nonpotable water for other mineral and energy development surrounding the permit area. The permit area should be subject to provisions that ensure that drilling and pumping does not adversely affect existing water supplies. Careful planning and testing of the hydro-geology can avoid these adverse impacts.

2. **Reclamation and Control of Invasive Plants**

With respect to the proposed parcels for sale, the District supports effective reclamation and aggressive control of invasive plants. By way of example, the SWCCD land plan provides as its first vegetation goal: "Goal 1: Encourage and facilitate restoration of the forage resource that comes as a result of surface disturbance from oil and gas, utilities, and recreation." SWCCD LRUPP at p.55. Under the plan, vegetation is to be managed by identifying desired plant communities, conducting Level III soil surveys to determine capacity of site, and managing soils "to maintain productivity, minimize erosion, protect private and public water reserves, water quality, limit severe and critical erosion by restricting or mitigating surface disturbance so as to minimize soil erosion, and to restore degraded areas." *Id.* Control and eradication of invasive species and noxious weeds are equally important. *Id.* at p.57 ("Support eradication, to the extent possible, of noxious weeds within Sweetwater County. [*See* Appendix Tab J, 2003 Declared List of Weeds and Pests, Wyoming Weed and Pest Control Board, as amended.]"). This policy extends to undesirable species, such as halogeton and cheatgrass and similar invasive plants. *Id*.

Weeds and other non-native invasive species are carried by a number of vectors, including wind, wildlife, and birds. The project area is not heavily vegetated and native vegetation continues to reflect the impacts of an extended drought. Thus, even minor surface disturbance will create opportunities for expansion of non-native invasive species and noxious weeds. There is already a serious problem of halogeton expansion in Sweetwater County. Its ingestion kills both sheep and cattle. Halogeton and cheat grass spread aggressively, crowding out desirable vegetation needed for both wildlife and livestock.

While the DEIS requires that seed mixing for reclamation be adequate to support the post-operational land uses, DEIS at 2-29, the District recommends modifying the mitigation plan for mine unit reclamation to require site preparation and allow for a sterile mix of non-native and native seeds to facilitate plant establishment, and then require monitoring of reclamation success and reseeding if needed. Much of the soils in the project area are alkaline and reclamation can be very difficult. Native plants found in alkaline soils grow very slowly and there is no assurance that seeding one time will be sufficient for successful reclamation.

Thank you for the consideration of these comments.

Sincerely,

/s/ Mary Thoman
Mary Thoman, Chairman
Sweetwater County Conservation District

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June 11, 2012

Re: Lost Creek In Situ Uranium Project Draft Environmental Impact Statement

Dear Mr. Carpenter:

Please accept the following comments from the Wyoming Outdoor Council for consideration during the environmental review for the Lost Creek In Situ Uranium Project (hereafter Lost Creek) Draft Environmental Impact Statement (DEIS). The Wyoming Outdoor Council has worked since 1967 to protect Wyoming's public lands and wildlife. We have expressed significant and ongoing concerns about the Lost Creek project over the last several years, particularly with regard to its potential impact on the area's Greater Sage-Grouse populations. We provided comments (along with the Powder River Basin Resource Council) on the U.S. Nuclear Regulatory Commission's Supplemental Environmental Impact Statement (SEIS) to the Generic Environmental Impact Statement for *in situ recovery* (ISR) uranium mining, NUREG-1910, Supplement 3, for the proposed Lost Creek ISR project on March 3, 2010. And we formally protested the issuance of a permit to mine to Lost Creek ISR , LLC (LCI) by Wyoming's Environmental Quality Council – Land Quality Division (EQC-LQD) on August 3-4, 2011. We incorporate both our SEIS comments and the transcript of the EQC-LQD Lost Creek hearing in these comments by these references.

Regrettably, the BLM has not incorporated changes to the proposed project that would alleviate our concerns about potential impacts to Greater Sage-Grouse. LCI has been unwilling to materially change its project design to reduce threats to area sage-grouse and, in our view, the project is still in clear violation of the Governor's Executive Order (EO 2011-5) and the BLM's own sage-grouse conservation policies (IM WY-2010-12). Despite concerns over some of its

limitations, the Wyoming Outdoor Council has been a strong supporter of the sage-grouse core area conservation strategy. Like many others, we would like to see this strategy succeed so that listing Greater Sage-Grouse under the Endangered Species Act (ESA) becomes unnecessary. However, as the U. S. Fish and Wildlife (USFWS) has stressed, the strategy's success depends on its careful *implementation* and on its adherence to science-based stipulations. As currently proposed, the Lost Creek project would violate key core area stipulations, place area sage-grouse populations at risk, set a dangerous precedent for other development projects, and undermine the very conservation strategy that Wyoming has worked so commendably to develop.

The BLM's NEPA analysis of potential sage-grouse and other wildlife impacts appears scarcely to go beyond the analysis conducted by the NRC in its SEIS and, as we indicated in our earlier (March 3, 2010) comments to the NRC, we found this analysis and associated proposed mitigation measures to be inadequate. We also are concerned about the lack of transparency inherent in BLM's DEIS analysis. For example, BLM repeatedly references a wildlife document [LWR Consultants, Inc. and Wyoming Wildlife Consultants, Inc. (in association with AATA International, Inc). 2011. Lost Creek Project. 2010 Wildlife Monitoring Report. April 2011] that cannot be easily accessed by the public. I requested this document by phone and then e-mail (May 31, 2012) from the lead consulting firm/author of the document – LWR consultants – who said they would contact the BLM to see if they had permission to disseminate the document. I wrote back to them a week later (on June 7, 2012), after not receiving a response. The consultant, Eric Berg, said he had forwarded my request to the BLM and had not received a response. I requested the document directly from BLM on June 7. On June 11, I was informed by the BLM that it was working to put the document on their website to allow public access, yet I was still not provided a copy of the document. As a result, I was unable to view the information contained in this report before the June 2011 Lost Creek public comment deadline, despite having asked for this document nearly two weeks ahead of that deadline.

The BLM Must Consider a One-Access-Road Alternative to Comply with NEPA'S Reasonable Range of Alternatives Requirement

BLM fails to consider a reasonable range of alternatives as is required by the National Environmental Policy Analysis (NEPA). Council on Environmental Quality regulations and court decisions make clear that the discussion of alternatives is "the heart" of the NEPA process. Environmental analysis must "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). Although the BLM states that the Wyoming Outdoor Council offered an alternative to the east access road that would include a newly developed road that accesses the project from the southeast and does not pass as closely to active sage-grouse leks (EIS at 2.94), the agency fails to address another alternative offered by the Outdoor Council: that of having only one access road. Having only one access road and reclaiming the additional

access "road" (two track) if necessary would reduce (though not eliminate) the project's potential impact on active sage-grouse leks, while still allowing the proponent to meet its stated objective of producing six million pounds of uranium over an operating period of 12 years. EIS at ES-6. Such an alternative also would bolster the currently inadequate range of alternatives, one of which necessitates an unspecified increase in development and infrastructure (no dimensions or details are provided) that may result in an unspecified reduction in traffic, and the other of which is unrealistic since the proponent is unlikely to place its operations at risk by allowing cattle and horses to move through the project area at will. The BLM should consider the one-access road alternative as a means of preventing the "unnecessary or undue degradation" (per 43 CFR 3809.411(d)) that is projected to occur because of the known impacts of energy development on sage-grouse. As the BLM has clearly outlined, the proposed project access roads violate EO 2011-5 and BLM IM WY-2010-12 because of their proximity to occupied sage-grouse leks.

During meetings with LCI and the hearing of our protest of LCI's permit to mine from the EQC, LCI stated repeatedly that it wanted two access roads as a convenience to allow workers to travel more easily from both Casper and Rawlins. When the Outdoor Council argued for one access road as a compromise to allow development to proceed while offering more protection for sage-grouse, the company claimed that the county required two access roads for safety purposes. The BLM reiterates this claim, stating that "For emergency purposes, Sweetwater County requires two access roads for ingress and egress (LCI, 2011a)". The LCI reference is from LCI's closing argument before the EQC. Thus far we have seen no county statutes to this effect, nor any letter from the county claiming that this must be so. We encourage BLM to discuss this issue more extensively with representatives from Sweetwater County. Perhaps county commissioners would consider allowing the project to proceed with only one access road if they understood that approving development projects in core sage-grouse habitat that run counter to EO-2011-5 and the BLM's sage-grouse conservation directives (WY-IM-2010-12) could precipitate a listing of the species under the ESA that ultimately would result in far greater restrictions on other development projects statewide. We do not believe the BLM has fully explored this option with the county and encourage the agency to do so prior to approving the current project. If two access roads for all development projects is indeed a safety requirement of Sweetwater County, we believe that the BLM should provide the relevant statutes or letters from County Commissioners to that effect. We believe the one-access road alternative should be thoroughly discussed, reviewed, and evaluated, particularly if the BLM decides to proceed with undermining the critical regulatory mechanisms that Wyoming has established to protect its Greater Sage-Grouse populations by approving the Lost Creek project.

Greater Sage-Grouse Concerns

The Lost Creek DEIS states that "LCI would follow the stipulations and management principles provided by the Wyoming Governor's SGIT [Sage-Grouse Implementation Team] while conducting the Proposed Action." DEIS at 3.8-26. It further states that the "Project [is] in line with state-wide stipulations for Greater sage-grouse taking topography and proximity to leks into account." DEIS at ES-11 to 12. In actuality, the proposed action violates the No Surface Occupancy (NSO) within 0.6 miles of leks stipulation, the no major haul/access roads within 1.9 miles of leks stipulation, and the stipulation that power lines should be buried if possible. In addition, LCI has failed to show that its activities will *not* have an adverse impact on grouse. This is the core principle of EO 2011-5, which states unequivocally that "New development or land uses within Core Population Areas should be authorized or conducted *only when it can be demonstrated that the activity will not cause declines in Greater Sage-Grouse populations*". (Emphasis added). In fact, scientific research suggests the opposite: that the planned infrastructure will cause declines to sage-grouse populations. The BLM itself admits that "[b]ased on available information, it can be conservatively anticipated that at least some Project activities within the Permit Area would negatively influence [sage-grouse] populations." DEIS at 4.9-9. Furthermore, the BLM has provided inadequate mitigation measures to address the expected declines in sage-grouse populations.

East and West Access Roads Are Likely to Cause Unacceptable Impacts to Sage-Grouse

LCI has shown an unwillingness to reduce its proposed impacts by having only one access road rather than two, and has offered no mitigation to compensate for the likely declines in the area's sage-grouse populations as a result of having two major access roads in close proximity to leks. LCI has argued repeatedly that impacts to sage-grouse from the proposed east and west access roads would be minimal because these are already existing roads. And although the BLM appears to concur with this assessment, it also states repeatedly that these roads are "two-track" roads, which have not been shown to adversely affect sage-grouse. For example the BLM states that the "road network in the Permit Area is comprised of unmaintained two-track roads, passable year-round by four-wheel-drive vehicles. The East and West Access Roads, ... are existing two-track roads that would be upgraded by LCI for the Project." DEIS at 1-4. Upgraded roads, on the other hand, would be all-season, gravel-surfaced, crowned-and-ditched roads with a 6-m (20-ft) wide driving surface that clearly would support a great deal more traffic than is currently experienced by the existing two-tracks. The access roads will be located within 0.6 mi of three leks, only one of which LCI considers occupied but inactive. Based on a significant body of scientific research on the impacts of roads on Greater Sage-Grouse, the Governor in EO 2011-5, the Wyoming Game and Fish Department (WGFD) in its recommendations for

developing oil and gas resources in sensitive wildlife habitats,[1] and the BLM in its IM WY-2010-12 universally recommend no surface occupancy within 0.6 mi of sage-grouse leks and no major haul/access roads within 1.9 miles of sage-grouse leks. Indeed, given the documented impact of roads and vehicular activity on sage-grouse, the WGFD's specifically recommends "[l]ocat[ing] main haul roads used to transport production and/or wastes to a centralized facility or market point ≥1.9 miles from the perimeter of occupied sage-grouse leks" and "[l]ocat[ing] other roads used to provide facility site access and maintenance ≥ 0.6 miles from the perimeter of occupied sage-grouse leks" in core sage-grouse areas subjected to in-situ uranium development.[2]

The BLM further errs in trying to make the argument that the proposed access roads are exempted from stipulations in EO 2011-5 because "existing roads are exempt through the [EO's] grandfather clause." DEIS at 4.9-7. The EO's grandfather clause applies to existing land uses within Core Population Areas prior to August 1, 2008. The existing roads are two-track roads that received little use until exploration activities by LCI. These two-track "roads" are hardly equivalent to the major upgraded haul roads that LCI is proposing. Furthermore, since the BLM's IM WY-2010-12 prohibits surface disturbing activity or surface occupancy within 0.6 mi of occupied or undetermined leks, the proposed haul roads violate BLM policy, regardless of any loopholes that may exist in EO 2011-5.

Research has shown that traffic during the sage-grouse strutting period results in declining lek attendance by breeding males when road-related disturbances are within 0.8 miles of a lek.[3] Five occupied leks occur within 0.8 miles of proposed roads in the Lost Creek area. Vehicular activity also has been shown to negatively affect female grouse. In a study in Pinedale, Wyoming, only 65 percent of sage-grouse hens from leks disturbed by roads and oil and gas development initiated nests, whereas 89 percent of hens from leks in undisturbed areas did so.[4] Lyons and Anderson's (2003) study further suggest that light traffic disturbance (1-12 vehicles/day) during the breeding season might reduce female nest-initiation rates and increase the distances that females move from leks when selecting their nest sites. An upgrade of haul roads associated with surface coal mining in Colorado, resulted in a lek that was 50 meters (164 feet) from a road becoming inactive and led to an 83 percent reduction in strutting males on another lek located 500 meters (1,640 feet) from a road within three years of the upgrade.[5]

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[1] Wyoming Game and Fish Department. 2009a. Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats. Revised September 2009. Wyoming Game and Fish Department. Cheyenne, WY.

[2] Wyoming Game and Fish Department. 2009a. Page 114, Appendix C.

[3] Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. Ph. D. Dissertation. University of Wyoming, Laramie, Wyoming.

[4] Lyon, A. G. and S. H. Anderson. 2003. Potential gas development impacts on sage grouse initiation and movement. Wildlife Society Bulletin 31:486-491.

[5] Braun, C. E. 1986. Changes in sage-grouse lek counts with advent of surface coal mining. Proceedings of Issues and Technology in the Management of Impacted Western Wildlife 2:227-231.

LCI has consistently claimed that the light traffic volume necessary to construct and operate an in situ uranium facility will result in minimal impacts to sage-grouse. The BLM echoes the tenor of these claims by stating in its DEIS (at 2-64) that "[a]t most, during construction, traffic going to and from the site could increase by approximately 50 SUVs per day and 2-5 tractor/trailers per week." However, the NRC SEIS states that:

> "LCI estimates that vehicle traffic would commence at 30-35 light trucks and 2 to 5 heavy trucks *per day* entering and leaving the site during the construction phase. During operation, light truck traffic would diminish slightly to about 20 light trucks with heavy truck traffic remaining constant (and including 1 to 2 trucks per week carrying yellowcake slurry offsite). Within the Project area, there would be about 15 light trucks traveling to and from the mine units for monitoring and maintenance, and 10 drill rigs operating for well installation and ore delineation." NRC DEIS at 2-28. (Emphasis added).

The BLM also fails to address additional traffic, such as the twelve 80-100-barrel water trucks that will be operating on site, presumably to minimize dust on project area roads. We highly recommend that the BLM resolve the discrepancies between the NRC and the BLM's assessments of vehicle traffic associated with the proposed project, given the detrimental impact that even light traffic of 1-12 vehicles per day has been shown to have on sage-grouse. Furthermore, BLM should evaluate the predicted impacts of increased vehicle traffic on the project area's sage-grouse, rather than simply minimizing projected traffic estimates presumably to avoid alarming the public about likely impacts to sage-grouse.

The BLM also should seriously reconsider the WGFD's flawed assessment that the proposed access roads are in compliance with EO 2011-5. While the WGFD and the BLM are correct that the EO 2011-5 states that "exceptions to these general or specific stipulations will be considered on a case by case basis," they ignore the attached caveat that proponents "must show that the exception *will not cause declines in sage-grouse populations*. EO 2011-5 at12. (Emphasis added.) The WGFD has repeatedly stated that the proposed access roads will be less detrimental to sage-grouse than building a new access road would be. However, the WGFD should be evaluating the impacts of the proposed roads to see if they will adversely impact the area's grouse population, rather than supporting Lost Creek's infrastructure plans because perceived worse alternatives exist, such as building a new road through pristine sagebrush habitat. Development projects should not be permitted simply because a different project layout would be even more detrimental when research suggests that the proposed development will adversely affect sage-grouse populations. Wind energy development projects have (rightfully) not been able to proceed in sage-grouse core areas because of their anticipated adverse impacts on sage-grouse. There is no reason why in situ uranium projects should not be held to the same standards.

The WFGD has also erred in determining that based on a "topographical visual assessments of the West Access Road, the topography creates a barrier between the West Access Road and the nearby leks, reducing the impact this road could have on neighboring leks." DEIS at 2-94. The BLM should not support this disingenuous analysis that presumes that sage-grouse will not be adversely impacted by roads if they cannot see them. We know of no science that supports such a hypothesis. The analysis looked only at the viewshed from the viewpoint of sage-grouse standing on the lek. It did not address the fact that birds fly to and from the lek, nor did it address the concern that 74-80 percent of female sage-grouse nest within four miles of the lek on which they breed.[6] The proposed roads would intersect breeding habitat, placing female grouse and their broods at greater risk of collisions with vehicles, depredation by synanthropic predators, anthropogenic disturbance, and other factors that negatively impact sage-grouse survival.

The WGFD also ignores the potential adverse impact of traffic noise on sage-grouse. Recent research on energy impacts on sage-grouse in Wyoming showed a 73 percent decline in peak male attendance at leks that were experimentally treated with road noise. Researchers further showed that *intermittent* anthropogenic noise, such as traffic, had a greater adverse effect on lek attendance than continuous noise.[7] As a result, it is quite likely that the 50 SUVs that are projected to use the access roads daily during project construction and the 30-35 SUVs (including those that will transport workers to the facility during project operation for early morning shifts while sage-grouse are lekking) are likely to adversely impact project area sage-grouse, despite the WGFD's assurances that these vehicles will not disturb grouse because they will be hidden by hills.

Although abundant scientific research has documented the adverse impacts that roads and their associated traffic have on Greater Sage-Grouse, BLM has not made a meaningful attempt to evaluate the potential impact of this additional traffic on area sage-grouse and has thereby failed to accord this project the "hard look" required by NEPA. Nor has BLM proposed any measures to mitigate these impacts or to compensate for likely declines in the area's sage-grouse population. BLM states that in the event of sage-grouse declines it would institute "protective practices" such as "setting vehicle speed limits, traffic timing, reducing traffic, or sound reduction techniques." DEIS at 4.9-8. Considering these measures are supposed to have been instituted throughout construction and operation of the project, particularly given that this project is in a sage-grouse core area, and considering that these sorts of measures were surely in place in

[6] Moynahan, B. 2004. Landscape-scale factors affecting population dynamics of Greater Sage-Grouse (*Centrocercus urophasianus*) in north-central Montana, 2001-2004. Ph. D. Dissertation. University of Montana. Missoula, MT. Holloran, M. J. and S. H. Anderson. 2005. Spatial distribution of greater sage grouse nests in relatively contiguous sagebrush habitats. Condor 107:742-752.

[7] Blickley, J. L., D. Blackwood, and G. L. Patricelli. 2012. Experimental evidence for the effects of chronic anthropogenic noise on abundance of Greater Sage-Grouse at leks. Conservation Biology 26(3):461–471.

the coalbed natural gas and oil and gas project areas where research documented sage-grouse declines following anthropogenic disturbances and energy infrastructure, BLM's plan to implement "protective practices" in the event of Lost Creek sage-grouse population declines is hardly reassuring. BLM's plan to implement "protective practices" once an impact threshold has been reached, monitor their effectiveness, and apply additional "protective practices" "until all possible protection measures have been applied or the impacted leks show a positive effect from the applied measures," essentially comprises a plan to make a plan when no known mitigation measures for reducing impacts of roads on grouse are in fact known.

Increased Traffic on Sooner Road is Likely to Adversely Affect Sage-Grouse

Although the Sooner lek is located approximately 300 feet from the existing Sooner Road, the NRC SEIS readily and rightfully concedes that "[t]he increased traffic adjacent to the Sooner lek ... could result in lower lek attendance." NRC SEIS at 4-47 – 4-48. This is likely to be particularly true during the construction phase since "[m]ost construction workers are expected to travel to the project area from Casper and Rawlins. They would travel US 287 to Lamont, then west to Bairoil approximately 10 km (6 mi) on WY 73, then about 20 km (12 mi) west on CR 22 to Sooner Road (BLM #3215) to the project area access road." NRC SEIS at 4-6. As a result, the Sooner Lek, which historically has been one of the area's most successful sage-grouse leks, would be at increased risk if the East Access Road was upgraded and used as a main access road as LCI has proposed. Placing the most successful leks in a core area at risk either as a convenience to a company that wants to facilitate employee travel or because of undocumented county safety requirements is unlikely to help the core area conservation strategy achieve its goal of maintaining the state's grouse populations, nor is it likely to adhere to the cautions offered by the USFWS that the core area strategy will succeed only if implemented by all landholders, based on the best available science.

Discrepancies Regarding Crooked Well Lek

We are concerned about the classification of the Crooked Well lek and believe that concerns about its persistence have been undermined by its classification as an "Occupied-Inactive" lek. Our concerns are based in part on the discrepancies regarding male sage-grouse activity on this lek. The NRC SEIS states that the lek was inactive during three site visits in April 2006. However, it goes on to say that "[f]our males were observed *on the lek* on April 4, 2007, but no sage-grouse were present in two additional lek surveys; therefore it is considered inactive."NRC SEIS at 3-36-37. (Emphasis added). The Wyoming Outdoor Council raised concerns about this classification in its March 3, 2010 comments to the NRC, based on the WGFD definition of an active lek as "any lek that has been attended by male sage-grouse during the strutting season. Acceptable documentation of grouse presence includes observation of birds using the site or

signs of strutting activity."[8] The WGFD concurs with the NRC and lists the peak number of males on the Crooked Well lek as four for 2007. However, the BLM states in its DEIS that male sage-grouse were "observed *in the vicinity* of the Crooked Well lek, no displaying was observed." DEIS at 3.8-33. (Emphasis added). This information appears to come from the WGFD database, but given that LWR Consultants, who did the lek surveys for LCI, did not include times for their surveys, it is difficult to know if the male sage-grouse had been displaying on the lek or not. These sorts of discrepancies and incomplete information reduce the public's trust in the data that are being evaluated to determine impacts to sensitive resources. (The public should not have to spend time, as we did, trying to resolve these discrepancies and determine which information was correct). Neither the BLM nor LCI provided any survey methodologies for lek surveys and counts, so the public is unable to determine whether surveys were conducted appropriately and whether leks have been appropriately classified. LWR Consultants apparently took over from the WGFD (Greg Hiatt) and conducted lek surveys at the Crooked Well lek for LCI between 2006 and 2010. With the exception of one survey time provided in 2010, none of their survey times are included in the WGFD database. We also have no idea about the weather conditions during the surveys. LWR Consultants only checked for signs of activity (feathers/droppings) twice in its five years of checking the Crooked Well lek: once after a snow in 2009 and once on the only occasion on which this lek was checked in 2010. The lek does not appear to have been checked in 2011. Regardless of the discrepancies and the incompleteness of the data for the Crooked Well lek, based on WGFD definitions and requirements for leks "occupied leks are protected through prescribed management actions during surface disturbing activities." Therefore, the BLM should not dismiss potential impacts to this particular lek, nor should stipulations that might afford it continued protection be ignored.

In general, the BLM appears to be unnecessarily vague in its depictions of the Lost Creek area's leks. The agency states that there are four occupied and active leks within two-miles of the main Permit Area. In addition, it states that three additional occupied and active leks "were located *not far north* of the two-mile buffer." DEIS at 3.8-27. (Emphasis added). In this age of precise GPS measurements, a description of "not far north" as a distance between sensitive resources and a proposed development project is inadequate for a NEPA analysis and does not allow the public to properly evaluate potential impacts to sage-grouse. The BLM describes eight additional "nearby" leks as being between two and five miles of the Permit Area boundary. The BLM should provide specific distances between lek perimeters and the Permit Area boundary, distances between leks and proposed infrastructure such as roads, and provide maps of all of the leks discussed in the analysis. BLM's vagueness in describing lek locations and lek status is not reassuring, particularly given that this information should be readily available if appropriate analyses had been conducted on the potential impacts of the proposed project on sage-grouse.

[8] Wyoming Game and Fish Department. 2009. Wyoming Sage-Grouse Definitions (Revised 12/16/09). Wyoming Game and Fish Department, Cheyenne, WY.

Finally, we also are unclear why BLM does not present sage-grouse lek survey and count data for 2010 and 2011, despite assurances that baseline wildlife surveys were conducted during these years.

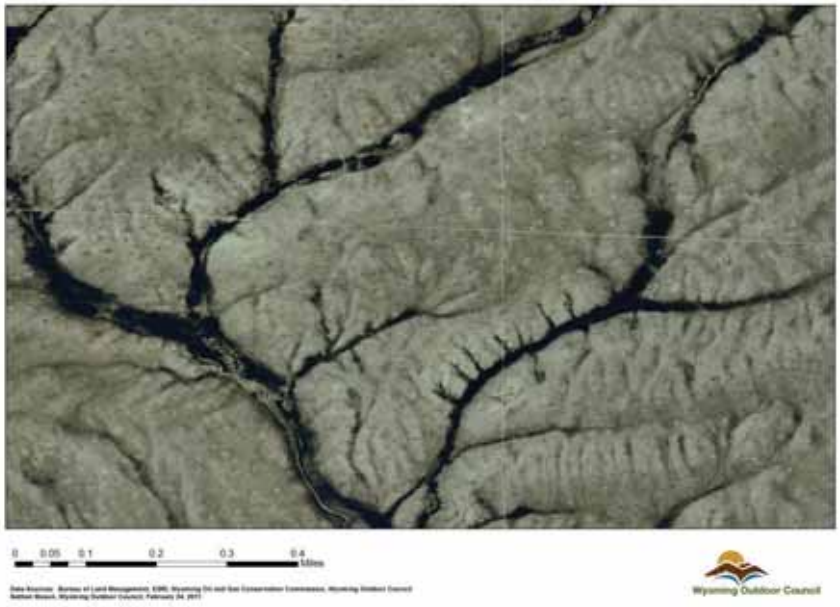
We are concerned that LCI's exploratory activities (which may or may not have been permitted activities), including associated increases in levels of traffic and human activity over the last few years already have caused significant disturbance to the area's grouse, particularly given some of the population declines seen in the Lost Creek area (see photos of the project area pre- and post-exploration activities below). Such potential disturbances should be taken into consideration before dismissing potential future impacts to leks that currently are considered occupied but inactive, such as the Crooked Well Lek. In addition, the level of disturbance that the Lost Creek area already has experienced as a result of initiation of the Lost Creek project merit further investigation and disclosure in the DEIS.

Power Lines and Project Infrastructure

EO 2011-5 states that "[n]ew distribution, gathering, and transmission lines sited outside established corridors within Core Population Areas should be authorized or conducted only when it can be demonstrated by the state agency that the activity will not cause declines in Greater Sage-Grouse populations.' EO 2011-5 at 4. BLM has made no attempt to evaluate the potential impact of proposed power lines on area sage-grouse leks. We appreciate the BLM's commitment to place perch deterrents on all power poles associated with the project. However, raptor deterrents may not be entirely effective, particularly given the proximity of the proposed power lines to sage-grouse leks, since some perch deterrents reduce but do not eliminate raptor perching. Raptors that perch for only brief periods because power poles are outfitted with perch deterrents still will have easy access to lekking grouse given the proximity of the proposed power lines to sage-grouse leks. Proposed power lines also will intersect habitat used by nesting females, making sage-grouse nests more vulnerable to depredation by ravens, and females and broods more vulnerable to depredation by raptors. We urge the BLM to require that power lines within five miles of sage-grouse leks be buried to protect both lekking and nesting grouse.

Although research on power line impacts to grouse is currently inconclusive, we are concerned that the power line that was built along the west side of the Lost Creek Permit Area may have caused grouse population declines (including the possible extirpation of the Discover 2 lek). We recommend that the WGFD and the BLM examine grouse numbers at area leks before this power line was constructed and use those data to help inform power line construction in the Lost Creek project. At a minimum we recommend that LCI work with the company that is responsible for this power line to place perch deterrents on the existing power poles as a sage-grouse mitigation measure for LCI's development activities.

Lost Creek In-Situ Uranium Project- Before Exploration



Lost Creek In-Situ Uranium Project- 2009

We also urge the BLM to work with LCI to ensure that perch and nesting deterrents are placed on *all* existing structures (such as water wells that have already become substrates for nesting ravens in the project area) and *all* planned infrastructure to prevent ravens from nesting in the project area.

Fencing

The adverse impact of rangeland fences on Greater Sage-Grouse is well-documented.[9] We appreciate that the BLM has improved on the NRC's lack of commitment to implementing protective measures for Greater Sage-Grouse by stating that fence markers will be placed on new fence lines to reduce potential sage-grouse collisions with fences. DEIS at 4.9-39. However, the BLM should provide more details about this commitment. Will fence markers be placed on all new fences? At what densities? Despite claiming that fence markers would be installed on new fence lines, the BLM also states that "fences would not be within a quarter mile of the leks nor would they be adjacent to riparian areas" implying that the fences therefore would pose a low risk to sage-grouse and would not need fence markers. DEIS at 4.9-39. We urge the BLM to ensure that LCI places fence markers at recommended densities to protect grouse and other birds on *all* new fences constructed in the project area. These types of bird diverters are relatively inexpensive and the company should implement this measure to minimize collisions with fences by federally protected birds. We also urge the BLM to ensure that LCI equip existing fences with markers as a compensation measure for the inevitable adverse impacts its project will have on sage-grouse and other birds.

Critical Seasonal Sage-Grouse Habitats

Aside from ignoring standard mitigation measures to protect core area sage-grouse, the BLM and LCI do not appear to have acquired the necessary biological information to protect the project area's sage-grouse. As a result, LCI cannot adhere to recommended mitigation measures and BLM fails to even mention them. For example, LCI gives no indication of having mapped any nesting and brood-rearing habitat in the project area and the BLM does not mention these critical seasonal grouse habitats in its DEIS. Furthermore, the BLM does not mention whether it expects LCI to adhere to the WGFD's recommendation regarding avoiding surface-disturbing activities and/or disruptive activities in nesting and early brood-rearing habitat within **three** miles of the perimeter of occupied leks and in mapped nesting and early brood-rearing habitat outside the three-mile perimeter from March 15 – June 30.[10] Indeed, maps in the DEIS do not even depict the project area's sage-grouse leks with three-mile buffers. Given that research has shown that 74-80 percent of females nest within four miles of leks, such stipulations are critical to protecting nesting females and their young, and ensuring successful future juvenile recruitment into local sage-grouse populations.[11]

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[9] E.g., Christiansen, T. 2009. Fence marking to reduce Greater Sage-Grouse (*Centrocercus urophasianus*) collisions and mortality near Farson, Wyoming – Summary of interim results. Wyoming Game and Fish Department, Cheyenne, WY. Danvir, R. E. 2002. Sage grouse ecology and management in Northern Utah sagebrush-steppe. Deseret Land and Livestock Ranch and the Foundation for Quality Research Management, Woodruff, UT.

[10] Wyoming Game and Fish Department. 2009a. Page 110, Appendix B.

[11] Moynahan, B. 2004. Holloran, M. J. and S. H. Anderson. 2005.

Similarly, BLM makes no mention of LCI's intent to adhere to any stipulations involving sage-grouse winter concentration areas. These areas do not appear to have been surveyed and mapped in the LCI project area (unless this information is included in the consultant's wildlife report, which has been unavailable to the public). The WGFD recommends avoiding the placement of roads … and other structures that may require human presence in winter concentration areas in both sage-grouse core and non-core areas.[12] In addition the WGFD recommends avoiding human and equipment activity within winter concentration areas from 15 November through 14 March in core and non-core areas. Given the number of leks in the vicinity of the proposed project area, the likelihood of disturbing grouse winter concentrations areas could be a significant concern. These areas should be identified and mapped and adequate mitigation measures instituted to protect key seasonal habitats. As the U.S. Fish and Wildlife Service stated in its November 12, 2008 letter to the project proponent, "No project activities that may exacerbate habitat loss or degradation should be permitted in important habitats." NRC SEIS at A-12. LCI must first identify these important habitats and then institute the requisite mitigation measures to ensure that these habitats are not threatened by the projected development. Until it does so, the project's potential impact on this core area sage-grouse population cannot be comprehensively evaluated.

Raptor Concerns

LCI has stated that it would survey for new raptor nests every five years as part of its proposed monitoring program. DEIS at 2-51 (Table 2.1-2). This survey schedule is inadequate to document changes in raptor nesting locations and could place raptors at risk by subjecting them to anthropogenic disturbance during construction and operation of the proposed project. Raptors frequently change nest locations from one year to the next, particularly if they have been subject to disturbance during a nesting cycle. In addition, new nests often are not found in the first year, especially if they failed early. To ensure that all active nests are found, surveys should be conducted for known and new nests both within the project area and within the 1.6 km (1 mi) buffer around the project area on a *yearly* basis. Yearly surveys would ensure that necessary avoidance and disturbance buffers are applied to limit the project's impacts on the area's raptors. Failure to provide adequate protections to project area raptors during the breeding season could result in violations to the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712).

[12] Wyoming Game and Fish Department. 2009a. Page 109, Appendix B.

Other Avian Concerns

Storage Ponds

The BLM does not adequately address the potential impacts that the proposed project poses to migratory birds, which are protected under the MBTA. Nor does it provide suitable mitigation measures to ensure that the project's impact on these birds is minimized and that unnecessary fatalities are avoided. We are concerned about the potential negative impact on migratory birds from exposure to constituents in the proposed evaporation ponds. The BLM states that "the water quality in the Storage Ponds is not expected to pose a risk to birds. However, if mortalities or frequent habitation of the Storage Ponds are noted, LCI will work with WGFD to develop additional protective measures to ensure the protection of birds." DEIS at 4.9-4. The BLM does not state how LCI has determined that the storage pond contents are not expected to pose a risk to birds and it contradicts itself by stating that "[c]hronic exposure may be of toxicity concern" to small mammals and birds. DEIS at 2-69. Statements regarding the risk (or lack thereof) posed by storage pond water to birds should be supported by data on the contents of the storage ponds and the known level of each constituent's toxicity to birds. The BLM also fails to state *how* a determination that the fluids in the storage ponds are harmful to birds might be made even though it states that such an assessment would trigger additional protective measures. Would ponds be tested regularly for contaminants? Would systematic surveys be conducted to document bird fatalities (or the lack of fatalities). And what if birds ingested harmful fluids and died off site, providing no indication that the storage fluids were harmful? How many birds would have to be found dead before LCI implemented "additional protective measures to ensure the protection of birds"? Knowing that these waste fluids can contain high selenium concentrations[13] that are harmful to birds[14] and because of the difficulty of documenting the threat that these fluids may pose to wildlife, the project proponents should *proactively* place netting and/or other appropriate deterrents over the ponds as a matter of course. Given that the vast majority of bird species in the project area are protected under the MBTA, LCI should take every precaution necessary to ensure that its development activities do not cause preventable bird fatalities and that the company remains in compliance with the MBTA. The use of netting and deterrents on the proposed evaporation ponds also would have the added benefit of preventing the ingestion of toxic water by sage-grouse, big game, and other animals. The efficacy of the

[13] Boon, D. Y. 1989. Potential selenium problems in Great Plains soils. Pages 107-121 *in* L. W. Jacobs, ed. Selenium in agriculture and the environment. American Society of Agronomy, Inc., and Soil Science Society of America. SSSA Special Publication No. 23. Madison, WI.

[14] Skorupa, J. P. and H. M. Ohlendorf. 1991. Contaminants in drainage water and avian risk thresholds. Pages 345-368 *in* A. Dinar and D. Zilberman, eds. The economics and management of water and drainage in agriculture. Kluwer Academic Publishers, Boston, MA. See, R. B., D. L. Naftz, D. A. Peterson, J. G. Crock, J. A. Erdman, R. C. Severson, P. Ramirez, Jr., and J. A. Armstrong. 1992. Detailed study of selenium in soil, representative plants, water, bottom sediment, and biota in the Kendrick Reclamation Project Area, Wyoming, 1988-90, U.S. Geological Survey Water Resources Investigations Report 91-4131. Ohlendorf, H. M. 2002. Ecotoxicology of selenium. Pages 465-500 *in* D. J. Hoffman, B. A. Rattner, G. A. Burton Jr., and J. Cairns, Jr. eds. Handbook of ecotoxicology, Second edition. Lewis Publishers, Boca Raton, FL.

netting and deterrents should be monitored on a regular basis and upgraded as needed to ensure that they are achieving their intended purpose.

Sagebrush Obligate Passerines

The BLM provides no analysis of the project's potential impact on sagebrush obligate passerines, several of which are considered Migratory Birds of High Federal Interest (MBHFI) and BLM Sensitive Species (e.g., Brewer's Sparrow and Sage Sparrow). The BLM states that "breeding Brewer's Sparrow and Sage Sparrow were found throughout the Big Sagebrush Shrubland habitats of the Permit Area," but then instead of discussing impacts to this type of habitat, offers reassurances that "Lowland Big Sagebrush Shrubland vegetation provided the greatest species diversity for MBHFI species use [and o]nly a small portion of this habitat would be disturbed." DEIS 4.9-34. It then concludes that "[t]herefore, population level effects due to habitat loss for MBHFI species are not expected" during construction, despite making no further mention of impacts to big sagebrush shrubland habitat. DEIS at4.9-34. With no additional "analysis" BLM also concludes that "population level effects due to habitat loss or increased competition are not expected for MBHFI species" during project operation since there would "little, if any, new habitat disturbance." DEIS 4.9-42. BLM's complete dismissal of potential impacts from the Lost Creek project to MBHFI and BLM Sensitive Species like the Brewer's Sparrow and Sage Sparrow is unacceptable, given that the agency is tasked with conserving these species. The BLM makes no mention whatsoever of scientific research on the impacts of roads, fragmentation, and anthropogenic disturbance on sagebrush obligate passerines. Nor does it offer any mitigation for potential impacts incurred on sagebrush obligate passerines by the Lost Creek project.

The American Bird Conservancy (ABC) has listed sagebrush as the most threatened bird habitat in the continental United States, claiming that "there is no system as vast as this one in such free fall."[15] Approximately 45 percent of the West's potential sagebrush habitat has been converted to other habitat types, including agriculture and urban areas.[16] The remaining portion is threatened by habitat destruction, fragmentation, invasive species, altered fire regimes, livestock grazing, energy development, and other stressors that may reduce its effectiveness for the more than 350 species of flora and fauna that depend on sagebrush habitats for all or part of their existence.

Populations of all sagebrush obligate songbirds are in decline and face an uncertain future even though numbers of some species are still fairly robust.[17] For example, Brewer's Sparrow, Sage Sparrow, and Sage Thrasher – all of which are considered sagebrush obligate passerines during

[15] American Bird Conservancy. 2007. Twenty most threatened bird habitats. American Bird Conservancy: The Plains, VA. 48 pp.
[16] North American Bird Conservation Initiative, U.S. Committee, 2009. The State of the Birds, United States of America, 2009. U.S. Department of Interior: Washington, DC. 36 pages.
[17] ABC 2007.

the breeding season – showed average *annual* population declines nationwide of 1.5 percent, 0.2 percent, and 1.1 percent respectively between 1980 and 2007.[18] Given the declining national and regional population trends of sagebrush obligate birds, with Brewer's Sparrow populations in particular showing declines of over 50 percent during the last 25 years based on the Breeding Bird Survey,[19] the adverse impact that the proposed project might have on sagebrush passerine distribution and productivity merits more serious consideration and analysis by the BLM. Energy development across the Intermountain West has occurred primarily within sagebrush-dominated landscapes.[20] As a result, the BLM must view the potential impacts of the proposed project within the context of region-wide energy development when evaluating cumulative impacts on the area's sagebrush habitats and their attendant species. Statements by the NRC and the BLM to the effect that there is plenty of available surrounding habitat so project area birds can go elsewhere are indefensible. Such statements fail to acknowledge such fundamental ecological concepts as territoriality, intra- and inter-specific competition, and micro-habitat selection. Furthermore, the BLM cannot assume that sagebrush obligate songbird populations will recover once project area drilling is complete. Research in the Upper Green River Basin suggests that affected species may not acclimate or recover after initial disturbances. Instead, adverse effects of energy development on these species may compound over time.[21]

Research suggests that energy development may exacerbate regional declines of some sagebrush obligate passerine species.[22] For example, increased well density was associated with a decreased abundance of Brewer's Sparrows and Sage Sparrows in three oil and gas fields in western Wyoming's Upper Green River Basin during 2008 and 2009.[23] In addition, the probability of daily nest survival for Brewer's Sparrow and Sage Sparrow decreased with greater well densities and increased proximity to well pads.[24] Avian nest predator (Common Raven) abundance increased slightly across energy development gradients and shrub vigor decreased (suggesting concomitant decreases in insect prey availability) with increasing energy development, so both an increased susceptibility to nest predation and changes in the availability of food resources may have played a role in the adverse impacts of intensive energy

[18] Sauer, J. R., J. E. Hines, and J. Fallon. 2008. The North American Breeding Bird Survey, results and analysis 1966 - 2007. Version 5.15.2008. USGS Patuxent Wildlife Research Center, Laurel, Maryland, USA.
[19] Holmes, J. A and M. J. Johnson. 2005. Brewer's Sparrow (*Spizella breweri*): A technical conservation assessment. US Department of Agriculture, Forest Service, Rocky Mountain Region.
[20] Knick, S. T., D. S. Dobkin, J. T. Rotenberry, M. A. Schroeder, W. M. Vander Haegen, and C. van Riper. 2003. Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats. Condor 105:611-634.
[21] Gilbert M. 2010. Demographic responses of sagebrush-obligate songbirds to oil and natural gas development in western Wyoming. Master's thesis. University of Wyoming, Laramie, Wyoming.
[22] Ingelfinger, F. and S. Anderson. 2004. Passerine response to roads associated with natural gas extraction in a sagebrush steppe habitat. Western North American Naturalist 64:385-395. Gilbert, M. 2011. Demographic responses of sagebrush-obligate songbirds to oil and natural gas development in western Wyoming. Journal of Wildlife Management 75:816–824.
[23] Gilbert 2011.
[24] Gilbert 2011.

development on sagebrush obligate passerines.[25] Both of these types of impacts could be expected with in situ uranium development.

In addition to experiencing lower productivity as a result of increased nest predation and limited food resources associated with energy development, sagebrush obligate songbirds, such as the Brewer's Sparrow, also may be particularly sensitive to the anthropogenic disturbances and habitat fragmentation that accompany energy development.[26] Researchers examining the impact of roads associated with natural gas extraction on sagebrush obligate passerines found that the density of Brewer's Sparrows and Sage Sparrows was reduced by 39 to 60 percent within a 100-m buffer around dirt roads with low traffic volumes (10-700 vehicles per day).[27] The tendency of sagebrush obligate songbirds to avoid roads and habitat edges is likely to have a profound influence on the distribution of the project area's sagebrush passerines. Given the vulnerability of BLM Sensitive Species such as Brewer's Sparrow and Sage Sparrow to edge effects, roads, and traffic levels on those roads, the BLM should provide a more substantive analysis of the possible impact of the project's roads on sagebrush obligate songbirds as well as offering mitigation or compensation measures if sagebrush obligate passerine population declines are detected following project development.

Even if project mitigation measures include timing stipulations to ensure that construction occurs outside of the songbird nesting season, the Lost Creek project may adversely affect sagebrush obligates by intensifying edge effects,[28] fragmenting habitat, and increasing populations of other passerine species (such as Horned Lark) that may compete with or displace sagebrush obligates.[29] Increased numbers of corvids and raptors associated with power lines and other anthropogenic structures also may increase the potential impact of predation on sagebrush obligate songbirds.[30]

When addressing the Lost Creek project's potential impact on migratory birds and sagebrush obligate passerines such as Brewer's Sparrow, the BLM focuses only on direct habitat loss and fails entirely to address indirect impacts that may reduce habitat effectiveness such as increased road densities, the construction of other anthropogenic structures, increased traffic and disturbance, increased predation, and reduced resource availability. By failing to address these concerns, neither the BLM nor the public can adequately evaluate the project's potential costs to valued resources.

[25] Gilbert 2010. Gilbert 2011.
[26] Ingelfinger and Anderson 2004.
[27] Ingelfinger and Anderson 2004.
[28] Fletcher, R. J. 2005. Multiple edge effects and their implications in fragmented landscapes. Journal of Animal Ecology 74:342-352. Ingelfinger and Anderson 2004.
[29] Ingelfinger and Anderson 2004. Gilbert 2011.
[30] Holmes and Johsnson 2005.Gilbert 2011.

Finally, the BLM states that it will monitor for MBHFIs using techniques recommended by the WDEQ-LQD's 1994 guidelines. We recommend basing surveys on best available, peer-reviewed methodologies, such as avian point counts.

Other Wildlife Concerns

Wyoming Pocket Gopher

The USFWS concluded that listing the Wyoming pocket gopher under the Endangered Species Act was not warranted when it completed its status review in 2008. Nevertheless, given this species' extremely limited distribution, its small population size, the intensive energy development that is occurring throughout its range, and the limited regulatory mechanisms currently in place to protect the species in the face of such development, it is likely that either the USFWS's decision will be contested or that the USFWS will be asked to reconsider its listing decision in the future. As a result, it would behoove LCI to be particularly careful about siting its infrastructure so that it avoids Wyoming pocket gopher burrows. Astonishingly, the BLM makes no attempt whatsoever to provide any protection for this highly vulnerable BLM Sensitive Species, stating unequivocally that "Wyoming pocket gopher burrow complexes *can be expected to disappear* in the disturbed areas for the life of the Project." DEIS at 4.9-37. (Emphasis added). The Wyoming pocket gopher is unlikely to persist if energy development results in losses of its burrow complexes given its already limited and fragmented population. The BLM's assurances that Wyoming pocket gophers can move into similar surrounding habitat is disingenuous given the species' narrow ecological niche, its limited dispersal capabilities, and the likelihood that appropriate habitat is already colonized given the numbers and distribution of Wyoming pocket gopher found during trapping efforts in the Lost Creek area.

The Wyoming pocket gopher is a BLM Sensitive Species. BLM Manual MS-6840.06.E requires that "protection provided by the policy for candidate species shall be used as the minimum level of protection for BLM sensitive species"—that is: "Consistent with existing laws, the BLM shall implement management plans that *conserve candidate species and their habitats* and shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for the species to become listed." BLM Manual MS-6840.06.C & .06.E. (Emphasis added). BLM Manual MS-6840.06.C.2 also directs the BLM to ensure that "activities affecting the habitat of candidate [and sensitive] species are carried out in a manner that is consistent with the objectives for managing those species." Furthermore, based on the directives of the BLM Manual, the agency must seek to conserve BLM Sensitive Species in a manner that contributes to their removal from BLM's sensitive species list.

The WGFD considers the Wyoming pocket gopher a state Species of Greatest Conservation Need. Keinath et al. (2012)[31] developed an exposure index that examined the vulnerability to development of each of these species. The Wyoming pocket gopher was ranked fifth of 156 species, primarily because of projected oil and gas development in its limited range. Given the vulnerability of this endemic Wyoming species and the existing threats to its persistence, the BLM's dismissal of the impacts to Wyoming pocket gophers that would result from development of the Lost Creek project are extremely troubling. BLM has provided no evaluation of potential impacts to Wyoming pocket gophers, no recommendations for avoidance of its burrow complexes, and no mitigation measures to compensate for potential losses. Such disregard for a species that was so recently considered as a candidate for listing under the ESA is concerning.

At a minimum, the BLM should ensure that LCI strives for a no-net-loss of Wyoming pocket gophers or their burrow complexes in the proposed project area, even if doing so necessitates shifting project infrastructure. The BLM should provide a protective buffer around Wyoming pocket gopher colonies and prohibit surface disturbing activities within these buffers. Despite much recent searching by biologists, only a few Wyoming pocket gopher locations have been confirmed. The number of pocket gophers found in the Lost Creek area could make this among the densest known concentrations of Wyoming pocket gophers in the species' range. As a result, the extent to which the BLM protects these little known Wyoming endemics in the Lost Creek area is likely to inform conservationists and the USFWS about the extent to which the BLM's "regulatory mechanisms" can legitimately protect this imperiled species in the face of intensive energy development. Failure to do so likely would be an important consideration for the USFWS the next time it considers whether the beleaguered Wyoming pocket gopher merits listing under the ESA.

Cumulative Impacts

Projected energy development (including the Whirlwind I wind project which is not included in BLM's list of foreseeable future development projects) does not bode well for Great Divide Basin wildlife, particularly those that are dependent on sagebrush habitats. And yet BLM largely dismisses cumulative impacts with the claim that "[t]he proposed Lost Creek ISR Project would not contribute perceptibly to cumulative impacts, due to: the dispersed locations of the actions in the north-central portion of the Great Divide Basin." DEIS at ES-14. The dispersed nature of the actions is precisely why additional actions in this area are such a concern. As the WGFD and others continually emphasize, co-locating disturbances minimizes impacts to wildlife. Indeed, EO 2011-5 explicitly states that although "it should be recognized that adjustments to the

[31] Keinath, D., M. Kauffman, D. Doak, H. Copeland, and A. Pocewicz. 2012. Assessing the relative exposure to development for Wyoming's Species of Greatest Conservation need. Presentation given by D. Keinath at the Wyoming Landscape Conservation Initiative 2012 Science Workshop.

stipulations may be necessary based upon local conditions and limitations[, t]he goal is to minimize future disturbance by co-locating proposed disturbances within areas already disturbed or naturally unsuitable." EO 2011-5 at 4. The dispersed nature of a large number of development projects scattered throughout what was formerly intact, high-quality sagebrush habitat is likely to result in widespread habitat fragmentation, which is deemed one of the principle threats to sage-grouse. It is precisely this type of fragmentation of formerly intact sagebrush landscapes that has led to serious declines in sagebrush obligate species and will necessitate increasingly rigorous conservation efforts in the future if we are to maintain the integrity of sagebrush ecosystems and the organisms they sustain. The BLM's reliance on "planned revegetation" (DEIS at 5-18) to minimize long-term cumulative effects may be overly optimistic given the decades it can take sagebrush to regenerate and the unknown effects of climate change on sagebrush ecosystems. And again, we take issue with the BLM's disingenuous statement that "due to the mobility of wildlife, impacts are still expected to be small." DEIS at 5-18. The ability of wildlife to move certainly has not resulted in robust remnant sage-grouse populations in the Powder River Basin or abundant mule deer in the Pinedale Anticline post intensive energy development. BLM's reliance on such antiquated and unsupported reassurances, particularly given the extensive body of scientific literature documenting the adverse impacts of energy development and habitat loss and fragmentation on a wide range of wildlife taxa, wholly undermines its cumulative effects "analysis".

With the intensity of LCI's exploratory activities, which may already have led to declines in the area's sage-grouse populations, and the almost certain declines of remaining grouse populations given Lost Creek's planned roads, disturbance, and infrastructure, it seems quite possible that sage-grouse will not long be an impediment to the three additional mine sites (and 5,000 wells) that Lost Creek plans to develop in the next 20 years. Given the company's future development plans, which certainly would overlap with current sage-grouse lek locations, there appears to be little incentive for LCI to protect the area's sage-grouse once the company is given the go-ahead to proceed with its initial development plans. It would be far easier to ensure future development of its mine units if no sage-grouse were present to inconvenience expansion plans. Given LCI's lack of incentive to protect sage-grouse, it is therefore incumbent on the BLM to consider factors like the potential listing of sage-grouse as an endangered species if Wyoming's core area sage-grouse conservation plan fails to protect the state's remaining grouse. Allowing a project to proceed in core sage-grouse habitat that inevitably will have adverse impacts on the area's sage-grouse populations undermines the statewide strategy to maintain existing grouse numbers and threatens all other development projects that would legitimately be developed in ways that were compatible with Greater Sage-Grouse conservation.

CONCLUSION

EO 2011-5 clearly states that "[n]ew development or land uses within Core Population Areas should be authorized or conducted *only when it can be demonstrated that the activity will not cause declines in Greater Sage-Grouse populations*." EO 2011-5 at 3 (emphasis added). If accommodations to the LCI project (such as eliminating one of the proposed access roads or constructing an access road that will have a less adverse impact on sage-grouse) cannot be implemented to reduce predicted impacts to the area's sage grouse, then the BLM should not permit this project. We believe that the BLM (and the WGFD)'s excessive reliance on the exceptions provided for by EO 2011-5 (e.g., Provision 18 on p. 4 of the EO) sets a dangerous precedent since it will be difficult not to accord similar exceptions to other companies that apply for development permits, particularly if they point to the egregious exceptions granted to LCI. Why should any company have to adhere to NSO stipulations or stipulations to build roads farther than 1.9 miles from sage-grouse leks if LCI did not have to? Wyoming's core area strategy will succeed only if development projects adhere to provisions outlined in EO 2011-5 and the scientific research on which these provisions and the conservation strategy are based. Other states are modeling their own Greater Sage-Grouse conservation efforts on Wyoming's core-area example. If Wyoming cannot and will not obey its own core area conservation strategy "rules", it is unlikely that other states will feel the need to do so and region wide conservation efforts will be undermined, increasing the likelihood of a "warranted" listing of the species under the ESA.

Although LCI, BLM, and the WGFD have stated that declines in sage-grouse populations post-project development will trigger an adaptive management response, this strategy is problematic considering mitigation measures for road-related impacts have not been developed. Furthermore, the fact that development impacts on sage-grouse populations typically are not seen until an average of three to four years post-development[32] is particularly problematic since the U.S. Fish and Wildlife Service will be reviewing the species' status to make a final determination on whether or not it warrants listing in 2015 (i.e., in just over three years), before mitigation measures can be implemented and their potential effects realized.

The USFWS, which will determine whether or not the Greater Sage-Grouse warrants listing under the ESA, has said that Wyoming's core area strategy as outlined in EO 2011-5 will serve as an adequate regulatory mechanism for maintaining viable populations of Greater Sage-Grouse only if it is adequately *implemented* by *all* State, Federal, and private landowners.[33] Furthermore the USFWS has said that implementation of EO 2011-5 must be based on the best available science and it has encouraged the State and project proponents to consider *all* alternatives that

[32] Walker, B. L., D. E. Naugle, and K. E. Doherty. 2007. Greater Sage-Grouse population response to energy development and habitat loss. Journal of Wildlife Management 71(8):2644-2654.

[33] U.S. Fish and Wildlife Service. 2011. Letter from Mark Sattleberg, Field Supervisor, Wyoming Field Office, U.S. Fish and Wildlife Service, to Governor Mead, Deputy Chief of Staff, Office of the Governor, June 24, 2011.

minimize or remove impacts to the sagebrush ecosystem.[34] Should the Lost Creek project proceed as proposed, implementation of EO 2011-5 will be severely compromised, peer-reviewed scientific research will be ignored, and appropriate alternatives to reduce impacts to grouse (such as building only one access road) will be disregarded. A listing of the Greater Sage-Grouse under the ESA would impact all future energy development projects in Wyoming. We do not believe that accommodating this one project's needs, as proposed, is worth such a risk.

Sincerely,

Sophie Osborn

Wildlife Program Director/Wildlife Biologist
Wyoming Outdoor Council

cc: Governor Matt Mead
Don Simpson, Bureau of Land Management
Mark Sattelberg, U.S. Fish and Wildlife
Pat Deibert, U.S. Fish and Wildlife
Scott Talbott, Wyoming Game and Fish Department

[34] U.S. Fish and Wildlife Service. 2011.

Power Company of Wyoming LLC
555 Seventeenth Street
Suite 2400
Denver, CO 80202
Tel 303 298.1000
Fax 303 299 1356

VIA ELECTRONIC MAIL: Lost_Crk_Mine_WY@blm.gov
AND FEDERAL EXPRESS

June 11, 2012

Dennis Carpenter, Field Manager
Bureau of Land Management
1300 North Third Street
Rawlins, Wyoming 82301

Re: Lost Creek ISR Project – Power Company of Wyoming LLC Comments on Draft Environmental Impact Statement

Dear Mr. Carpenter:

Power Company of Wyoming LLC (PCW) appreciates the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Lost Creek In Situ Uranium Recovery Project (Lost Creek). PCW is developing the Chokecherry and Sierra Madre Wind Energy Project (CCSM) located in Carbon County, Wyoming approximately 40 miles southeast of the Lost Creek Project. The CCSM Project consists of 1,000 wind turbines that will generate 2,000-3,000 megawatts of clean, renewable power. This estimated $4 billion to $6 billion investment in America's electric system will produce significant supplies of cost-effective clean energy while generating hundreds of good jobs, millions in tax and royalty revenue, and other economic benefits.

The CCSM Project is estimated to create at least 114 operations and maintenance jobs and more than 1,000 construction-related jobs at the peak of construction. These jobs will support existing businesses and the development of new businesses. In addition, the CCSM Project will generate millions of dollars in tax revenue over the life of the project: an estimated $291 million to $436 million in property taxes over 20 years; an estimated $149 million in electric generation taxes over 20 years; and approximately $234 million in sales/use taxes during the CCSM Project's initial period of wind energy equipment purchases.

The wind project is situated on portions of the 320,000-acre Overland Trail Ranch (Ranch), owned and operated by The Overland Trail Cattle Company LLC. The nation's best, highest-capacity onshore wind resources are found across the Ranch, which consists of an approximately 50/50 mix of privately owned land interspersed with federal land managed by the Bureau of Land Management (BLM). The wind energy project's utilization of approximately 50% BLM-managed land aligns with federal energy policies and objectives, including the goal outlined in Section 211 of the 2005 Energy Policy Act to develop 10,000 MW of renewable energy projects on federal land managed by the Department of the Interior by 2015; and the Department's goal of developing 10,000 MW of renewable energy on federal land by 2012. The Notice of Availability of the DEIS for the CCSM Project was issued on July 22, 2011. The Final

Power Company of Wyoming LLC

Environmental Impact Statement (FEIS) for the CCSM Project is expected in the summer of 2012.

The CCSM Project is mentioned throughout the land use analysis in the Lost Creek DEIS. Due to the proximity of the CCSM Project to the Lost Creek Project, PCW agrees that it is appropriate for the Lost Creek DEIS to consider the CCSM Project in its analysis. However, in the cumulative effects section (Section 5.2) of the Lost Creek DEIS the statement is made that "The Chokecherry - Sierra Madre Wind Energy Project could also impact land use due to safety considerations." Lost Creek DEIS p5-11. This statement is not consistent with the analysis contained in the CCSM DEIS. Furthermore, PCW is unclear as to what "safety considerations" are of concern. The statement is simply not supported by the facts and appears gratuitous at best.

The wind energy project will result in less than 1% long-term surface disturbance on the Overland Trail Ranch, leaving 99% of the Ranch intact and available for existing land uses. The operation of the CCSM Project will not directly impact current land uses; access to public lands will remain unchanged and agricultural operations will continue. While cattle operations may be affected during construction, these effects will be short-term and full scale cattle operations are expected to resume following completion of construction. The analysis in the CCSM DEIS states that "No significant impacts were identified for land ownership and use" and further states that "operation of the project is generally compatible with other existing productive land uses". CCSM DEIS p4.4-12.

The FEIS for the Lost Creek Project should clarify what is meant by the statement that the CCSM Project could impact land use due to "safety considerations". The FEIS should also consider the analysis contained in the CCSM Project FEIS, expected to be released shortly, in the cumulative effects chapter of the Lost Creek FEIS.

Thank you for your consideration of these comments.

Sincerely,

Garry Miller
Vice President, Land and Environmental Affairs

From: MARYBETH DEVLIN
Sent: Tuesday, June 12, 2012 12:42 AM
To: BLM_WY_Lost_Crk_Mine
Cc: Russell, John D
Subject: Lost Creek ISR Project

I sent this email yesterday, but received a "mailer-daemon" failure notice. So I am trying again, and copying Project Manager John Russell.

June 11, 2012

Bureau of Land Management
Rawlins Field Office
1300 North Third Street
Rawlins, WY 82301

Attn: Dennis J. Carpenter, Field Manager

Subject: **Lost Creek ISR Project**

Dear Mr. Carpenter:

These comments address the draft environmental impact statement (EIS) for the **Lost Creek In-Situ Recovery (ISR) Uranium Mine Project** that is proposed on land in the Red Desert region of Wyoming. The applicant -- Lost Creek ISR, LLC -- (a subsidiary of Ur-Energy) also proposes a yellow-cake processing plant, storage ponds, wells, roads, fences, and various other facilities associated with the project. Already, the applicant is pursuing amendments that would permit a yellow-cake drying-packing facility on site.

The Project

The Lost Creek project would employ the in-situ recovery technique of extracting the uranium. The ISR method -- "solution" mining -- involves injecting a liquid leaching agent, called a lixiviant, through a series of wells installed in the ore body. The lixiviant dissolves the uranium. The resultant slurry is brought to the surface via production wells, then piped to a processing plant for recovery. The add-on drying-packing unit would save the operator from having to transport the product for that purpose.

The project area would cover approximately 4,250 acres, but only about 345 acres would be subjected to actual surface disturbance, mostly related to construction of pads for wells used to extract uranium in solution from the site.

Recommend: The No Action Alternative

BLM should deny the application for this mine, end further mining activities in the Red Desert, and proceed at once with reclamation. The overriding considerations for No Action include the

likelihood of:

- Contamination and degradation of the immediate and surrounding environment,
- Potential harm to people -- specifically, mine and processing workers,
- Hazardous conditions affecting resident and visiting wildlife, and
- Flat or reduced demand for uranium.

Instead of mining new uranium, recycling of nuclear waste should be the indicated direction of the government's energy policy.

Surface-Water and Ground-Water Impacts

The EIS acknowledges the risk of spills and leaks, which could pollute both surface-waters and ground-waters. For certain, the mining operations would contaminate groundwater with lixiviant, uranium, and other metals. Consider the under-stated, ***yearly*** quantities below:

- 47,000,000 gallons of liquid waste.
- 18,000,000 gallons of ground water used in construction, dust control, operations.
- 60,000,000 gallons of "liquid byproduct materials"

Then there's the thousands of cubic yards of solid wastes, some hazardous, that must be disposed of properly.

BLM should reject this profligate consumption of scarce fresh-water sources in the Red Desert, along with the production of so much toxic waste and byproducts, both liquid and solid. Deny the permit.

Radioactive Wastes

The ISR mine would generate "Section 11e.(2) materials." These are radioactive wastes -- discrete sources of radium-226. The subject mine is projected to produce over 55,000,000 gallons of such waste every year, or more than 4,415,000,000 gallons of radioactive material over the life of the project.

From the Nuclear Regulatory Commission Website:

Section 11e.(2) byproduct material is regulated by the NRC under 10 CFR Part 40. In Part 40, the NRC clarified the definition of byproduct material by adding the clause "including discrete surface wastes resulting from uranium solution extraction processes." In simpler terms, it is the waste and tailings generated by the processing of ore for its uranium or thorium content. Most of this material is created by uranium recovery and is primarily mill tailings. Examples of milling wastes are broken pipe from in situ recovery facilities and contaminated mill equipment that is to be discarded. Byproduct material is disposed of in uranium mill tailings impoundments.

- http://www.nrc.gov/materials/byproduct-mat.html

The Red Desert should not be subjected to the risk of spills or leaks of such wastes.

Toxic Petroleum Wastes

The EIS predicts that up to 960 gallons of "waste petroleum products" and up to 10 gallons of "waste chemicals" will have to be managed every year if the mine starts up operations. Spills are inevitable, and unacceptable.

Dust -- An Insidious Hazard

Dust is always a concern with regard to mining operations. It impacts air quality. The Lost Creek ISR project is anticipated to generate 180 tons of "fugitive dust" every year during its eight-year operation. The dust in question consists of particulate matter that is ten micrometers or less in diameter. Hence, it is abbreviated "PM10." Being so small, PM10 can invade the natural defense mechanisms of the respiratory tract and lodge deep in lung tissue. PM10 is harmful to humans as well as wildlife. Further, the EIS notes that wind is a factor in the project area. Inhalation and ingestion hazards, affecting the health of mine workers and indigenous wildlife, are increased in a relatively high-wind conditions, which spread particulate matter far and wide.

Further, Chapter 4, Section 4.10, notes that the dust generated by mining operations is expected to settle on vegetation. Thus, it will be ingested by wildlife and wild horses, while foraging and while merely breathing. The dust could potentially cause digestive and dental complications in addition to respiratory and cardiovascular problems for the horses. This potential impact was not fully addressed.

Disturbances to Wildlife

The subject mine would be sited in a Sage Grouse Core Area. If BLM is serious about preventing this candidate species from being listed, then why would the agency even entertain the idea of a uranium mine invading a core area? Further, traffic in and out of the project grounds is expected to be 50 sport-utility vehicles a day plus up to five tractor-trailers a week. These intrusions will take place on the improved roads that the mine operator plans to construct through the area. Certainly the shy sage grouse will be negatively affected by such disturbances and by the fragmentation of their core habitat.

Further, the project will inadvertently provide local raptors more perches from which to swoop down on their quarry. The sage grouse, pygmy rabbits, and pocket gophers would surely be picked off. That is, if they're not poisoned first in the mine's toxic storage ponds.

Reduction of Wild Horse Herd Management Areas

Chapter 3, Section 3.1, pdf-pages 11 → 16 of the EIS discuss land use in the proposed project area, including the impact on resident wild horse herds. We learn that the mine would encroach on two herd management areas (HMAs). The HMAs directly impacted are:

Lost Creek → 1.969 acres
Stewart Creek → 1,119 acres

Total → 3,088 acres

Across Wyoming, BLM has drastically reduced the original wild-horse herd areas (HAs) and renamed the remnants "herd management areas" (HMAs). For comparison,

Wyoming's HAs → 10,344,424 acres
Wyoming's HMAs → 4,768,682 acres

Total Loss of Land → 5,575,742 acres → 54 percent

The proposed Lost Creek ISR mine would take away 3,088 more acres from the wild horses. The EIS makes no mention of providing compensatory land of equal quality elsewhere in the vicinity. This pattern of taking but not giving back needs to end. By law, the HMAs are supposed to be managed principally for the wild horses. Thus, their needs must take priority and be fully met.

Insufficient Analysis Devoted to the Mine's Impact on the Resident Wild Horses

Chapter 3, Section 3.9 of the EIS devoted just two pages to the area's wild horses (pdf-pages 72 and 73). Instead of providing comprehensive information, the narrative focused on the supposed addition of escapee domestic stock horses into the wild, seeming to minimize the herds' genealogical importance, while grudgingly acknowledging their "limited" Spanish-Mustang ancestry.

Chapter 4, Section 4.10 purported to address the potential impacts of mining operations on the wild horse herds. Mostly, the negatives were dismissed as being of "no significant impact." Any information concerning the wild horses that weighed against the mine was downplayed. That is not a proper analysis.

For instance, the EIS indicates that mud pits will not be fenced because experience with other ISR projects showed them not to be a problem for horses. But the EIS notes (parenthetically) that the other projects involved mainly domesticated horses which, we would infer, were under the control of their guardians.

In another instance, BLM admits that the wild horses could be exposed to toxic chemicals around spills and leaks. But these dangers are brushed off.

Collisions with vehicles, disturbances, loss of habitat -- you name it and the EIS discounts the impact on the "continued existence" of the wild horses. Thus, if an impact would not potentially

exterminate the wild horse population, the EIS characterizes it as "short term" or of "no significant impact."

What is called for is a thorough study of the project's immediate and long-term likely adverse effects on the wild horses, whether those impacts can be mitigated, and if so, how. Superficial consideration of potential hazards, such as fencing around certain parts of the project, does not begin to address potential adverse effects.

Analysis Must Consider All the Herds of the Red Desert Complex

BLM has elsewhere declared the herds of the Lost Creek and Stewart Creek HMAs, along with the herds of three other HMAs, to constitute a meta-population. BLM has designated this area the "Red Desert Complex." The HMAs composing the Complex are:

- Antelope Hills
- Crooks Mountain
- Green Mountain
- Lost Creek
- Stewart Creek

BLM has claimed that the geographical contiguity or proximity of the five HMAs enables the horses of these herds to migrate freely into each other's territory and inter-breed. On this basis, BLM has argued that the herds' gene-pool diversity is maintained despite the agency's policy of keeping most of them below the minimum scientifically-accepted threshold for genetic viability.

However, for the EIS in question, BLM looked only at those HMAs directly affected by loss of acreage, and did not consider any of the others. Thus, the analysis is incomplete regarding the mine's impact to the allegedly free-roaming horses that BLM manages as the Red Desert Complex. That BLM was aware of this discrepancy was evident by its reference to one of the HMAs -- Green Mountain. The EIS states that the Green Mountain herd did not need to be considered. While maintaining that the horses still "interchange," BLM claimed the Green Mountain horses were "unlikely" to enter the project area due to the distance involved. BLM is, in essence, arguing against its own position. Documentation supporting this new claim? Chapter 3, Section 3.9, pdf-page 72: "Personal correspondence with Roy Packer, Range Specialist of the BLM Lander Field Office, November 2011." Nothing more. If the Red Desert Complex truly exists, then all the herds that are alleged to freely roam therein must be considered. Unless they really don't. In any case, personal correspondence cannot substitute for thorough analysis.

No Wild Horse Advocacy Organizations Consulted

Chapter 6 of the draft EIS identifies the various individuals and organizations with whom BLM staff consulted in the preparation of the analysis. However, no wild-horse advocacy groups were among them. This omission reflects nonexistent partnerships with wild-horse stakeholders.

Personally, I just happened to come across an article about the EIS that mentioned the potential

impact of the proposed Lost Creek mine on the wild horses of the area. Despite my having sent a letter to the Rawlins Field Office on April 7, 2011 formally requesting to be placed on the mailing list concerning matters affecting wild horses, I was not notified of the EIS.

RFO should correct these deficiencies in the planning and evaluation process for this EIS and all other projects that impact the wild horse herds. RFO needs to implement coordinated resource management (CRM) with regard to its wild horse stakeholders. Doing so will admittedly be challenging because mustang advocates come from across the country. The good news is that, with modern communication technologies, previous barriers to such partnerships have fallen. BLM needs to cooperate, consult, and coordinate with mustang advocates, just as the Agency does with its grazing permittees. The CRM approach will result in consensus-based decisions and the development of best management practices concerning wild horses.

BLM should re-open the EIS after establishing a wild-horse advocacy stakeholders committee.

Vegetation -- Less Variety, More Weeds

A mining project can be expected to introduce weeds -- exotic propagules -- as a result of disturbances. Weed-seeds will hitch a ride on the many vehicles entering the area as well as on the shoes and clothing of the workers. Wind will spread the infestation. Weeds crowd out and replace the native vegetation, and they increase the risk of wildfires.

The EIS' focus on reclamation activities around the immediate site does not prevent the problem or truly solve it. This mine would, therefore, have widespread impact on the Red Desert vegetation. The Wyoming 2010 State Wildlife Action Plan (SWAP) cites invasive species -- particularly cheatgrass -- as a leading conservation challenge. BLM should properly consider the impact of weeds on the greater surrounding area, not just the relatively limited area of active mine operations. Protect the range. Deny the permit.

The Mine's Economic Benefits May Be Overstated

The proposal touts direct and indirect potential job creation -- 119 to 148 positions -- and boasts that tax revenue will inure to the benefit of federal, state and local coffers. But how many of those jobs will actually materialize? How many will be permanent, full-time positions? Unless car-pooling is the rule in Wyoming, the projected traffic of 50 vehicles per day suggests a much smaller workforce. Moreover, the mine may never produce anywhere near the level of employment claimed by the applicant due to recent events and their long-term ramifications.

Uranium Market -- No Longer Expected to Boom as Earlier Anticipated

Prior to the Fukushima catastrophe, it was expected that demand for uranium by the national and/or world market would increase. This expectation must have prompted Ur-Energy's decision, several years ago, to pursue a mining permit and to establish a processing facility on site. However, post-Fukushima, the outlook is less favorable. For instance, Germany has shuttered eight reactors permanently, with nine others having definite closure dates. Six Japanese reactors are shut down for good and most others are not operating. Countries with

seismic issues and/or tsunami vulnerability are unlikely to move forward with reactors. The market price for uranium has, in fact, declined significantly. Please refer to the article provided at the link below from Nuclear Engineering International Magazine.

- http://www.neimagazine.com/story.asp?sectioncode=147&storyCode=2060844

Break-Even Price: $61. Current Price: $51.

A representative of the applicant has been quoted saying that, although the price per pound of yellow cake has dropped by half, he insisted that at $60, the company would do just fine. "We're in great shape at those prices."

- http://trib.com/news/state-and-regional/uranium-mine-proposed-for-wyoming-s-red-desert/article_3998820a-4e3d-5093-8925-d02c7a69ef5d.html#ixzz1xKhXtySP

His contention contradicts the economics. The first link below is for a recent article reporting that the break-even figure is now $61. The second link provides the current price: $51. While a company can, I suppose, choose to pursue a losing proposition -- possibly for tax write-offs, surely it behooves BLM to deny the application for a project that would disturb an area of ecological importance such as the Red Desert and likely be abandoned eventually anyway.

- http://au.news.yahoo.com/thewest/a/-/news/13390362/no-sweeteners-for-yellowcake-players/

- http://www.uranium.info/

Long-Range Outlook for Nuclear Energy: Flat or Declining

The U.S. Energy Information Administration (EIA) has published its Annual Energy Outlook 2012 Early Release Report, the summary of which is linked below. The EIA's projections through 2035 indicate a flat or even declining growth curve for nuclear energy. The market for uranium is almost entirely tied to nuclear power generation. BLM should make the tough decision to turn down the application for a mine whose construction will disturb the Red Desert environment but whose activity may end shortly thereafter, leaving behind an ugly scar on the land.

- http://www.eia.gov/forecasts/aeo/er/executive_summary.cfm

Reclamation -- Promises, Promises

If the mine closes prematurely for economic reasons, waivers can likely be secured that would allow delays in reclamation that might last for years. In the meantime, the range would languish. Forage loss would continue and erosion would worsen. If the mine were later reactivated and its permit extended, that could push back reclamation even further.

Conclusions

BLM should select the **No Action** alternative and deny a permit for the Lost Creek ISR uranium mine. The mine, processing plant, and drying-packing facility would bring contamination and unacceptable risks to people, the environment, and to wildlife. BLM should reject the mine, embark at once on reclamation of the previous disturbances, and let the land heal.

Sincerely,

Marybeth Devlin

BLM 3809 (WY300)
WYW-166318

6/11/2012

Sweetwater Conservation District - (Sweed)

of the County of Sweetwater as dominant private property rights-of-way of those of R.S. 2477 authority of those with conferred need of unimproved routes of travel of citizens rights/entitlements to and from public land/mineral and/or surface estate in local jurisdiction, is asserted of District prerogative.

Of such prerogative is associated need to know more detailed findings of authority of minerals development under mining claim / General Mining Law, Act of 1872 (as amended) concerning permitted authority of mineral Extraction and refinement in Sweetwater County per se. BLM bifurcation of operational authorities, in contrast with essentially Sweetwater County base authority origin, is envisioned avoidance of local autonomy in overview of permitable development of mineral values of local economic concern. Review of Draft EIS doc-

6/11/2012

2 ument has been of insufficient time and public avail in Federal Depository Library (especially necessary in timely review opportunity of local need) prerequisite to closure of review of no-vant a document as Lost Creek ISR, LLC / Applicant supplied copy (via Mr. Tim Morrison liaison from Little Snake River Conservation District) — pour Thursday (45) day scheduled examination period on May 3, 2012 during regular scheduled (Tuesday) meeting; whereby, insufficient review thereof has been of local District conservation initiative in public record to facilitate appropriate perusal of permitable mineral development as of required public scrutiny in District parameter.

Request is made to cause special review, discussion and evaluation, of permitting processes at issue. District of Sweetwater County is not of appropriate public record in examination of no-vant a local enterprise in privacy as centered in local district authority as may establish precedent in mineral

6/11/2012

exploitation under local dominion
Recall of clause of common
period designated June 11, 2012 is
of demand or need of District
evaluation of mining law as it
subject to local government as the
source of origin of private rights
established in valuable mineral
discovery under mining law as well
as local origin of requirements of
ore mining claim.

Robert C. LeFevre

(Received 6/11/2012
(11) 11:30 Hrs)

June 11, 2012

Comments on the Lost Creek In Situ Uranium Recovery Project

Conservation District County of Sweetwater as promulgates prevent rights-of-way of R.S. 2477 authority of traces, trails, and/or roads of primarily unimproved routes of travel of citizens right/entitlement to one from public land/mineral and/or surface estates in local jurisdiction is asserted of District prerogative.

Of such prerogative is associated need to know more details, findings of authority of mining claim/General Mining Law, Act of 1872 (as amended) concerning permitted authority of mineral extraction and refinement in Sweetwater County per se. BLM bifurcation of operational authorities, in contrast with essentially Sweetwater County base authority origin, is envisioned avoidance of local autonomy in overview of permissible development of mineral values of local economic concern. Review of Draft EIS document has been of insufficient time and public avail in Federal Depository Library (especially necessary in timely review opportunity of local need) prerequisite to closure of review of so vast a document as Lost Creek ISR, LLC/Applicant supplied copy (via Mr. Tim Morrison liaison from the Little Snake River Conservation District) - post forty-five (45) day scheduled examination period on May 3, 2012 - during regular scheduled Sweetwater County Conservation District meeting, whereby insufficient review thereof has been of local District conservation initiative in public record to facilitate appropriate perusal of permissible mineral development as of required public scrutiny in District parameters.

Request is made to cause a special review discussion and evaluation of permitting processes at issue. District of Sweetwater County is not of appropriate public record in examination of so vast a local enterprise in privacy as centered in local district authority as may establish precedent in mineral exploitation under local dominion. Recall of closure of comments period designated June 11, 2102 is of demand of need of District evaluation of mining law as is subject to local governments as the source of origin of private rights established in valuable mineral discovery under mining law as well as local origin of entitlement of mining claim.

Robert LeFaivre

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: EPR-N

JUN 13 2012

Dennis J. Carpenter
Field Manager
Rawlins Field Office
Bureau of Land Management
1300 North Third Street
P.O. Box 2407
Rawlins, WY 82301–2407

RE: Draft Environmental Impact Statement
Lost Creek In-Situ Uranium Recovery Project,
Sweetwater County, WY
CEQ#: 20120117

Dear Mr. Carpenter:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the U.S. Bureau of Land Management (BLM), Draft Environmental Impact Statement (EIS) on the proposed Lost Creek In-Situ Uranium Recovery (ISR) Project. Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C) and Section 309 of the Clean Air Act (CAA), 42 U.S.C. Section 7609.

Project Background and General Comments

The Lost Creek ISR Draft EIS analyzes environmental impacts associated with a proposal from Lost Creek ISR, LLC to develop the uranium resource on the company's existing leases in the Lost Creek project area. The Preferred Alternative selected by the BLM, is the Proposed Action for ISR mining and processing, that also includes an onsite vacuum yellowcake dryer, which will substantially reduce the number of product shipments due to the reduction in overall all volume of product. This has a positive environmental effect of reducing air and wildlife impacts and lessens the potential for accidental transportation spills. For the Preferred Alternative, approximately 6 million pounds of uranium would be produced over a 12 year period from 3 separate mine units located within the Lost Creek project area. Construction would include a processing plant with a vacuum dryer, two storage ponds, an access road to the site and a pipeline system for conveying process fluids. The plan of operations includes drilling, injection, recovery and monitoring wells, as well as the construction of support facilities such as parking lots and power lines. The plan also includes details for reclamation and restoration of aquifers. The ISR operation involves pumping lixiviant solution from the plant through the pipeline network to injection wells that are drilled to the ore bearing production zone located at a depth of from 300 -700 feet below

the ground surface. The resulting uranium-laden solution is then pumped back to the plant for processing, drying into yellow cake, and then shipped offsite for further processing.

The Lost Creek ISR project is located about 40 miles northwest of Rawlins, Wyoming, in Sweetwater County. The project area boundary includes approximately 4,254 acres, but no more than 354 acres would be involved in all surface disturbance. Surface land ownership of the project area includes both BLM (85%) and State (15%) agencies. Most of the surface disturbance would be related to construction of the well pads used to extract the uranium in solution from mineral deposits beneath the site. The BLM proposes to use this environmental analysis in its decision-making process to approve the proposed development of federal minerals.

A summary of three alternatives analyzed in the Draft EIS is as follows:

- No action Alternative - No ISR actions in the project area;
- Proposed Action with Not Fencing the Pattern Areas - The purpose of the fencing is to reduce damage to wells and subsequent risk of spills from cattle or wildlife.
- Proposed Action with Onsite Dryer (Preferred Alternative) - Rather than shipping the slurry off-site for drying, the slurry would be filter-pressed to remove additional water, dried under vacuum, and packaged for shipping to a fuel processing facility.

The EPA provided both a scoping letter and subsequent preliminary Draft EIS comments for the project. We appreciate that the BLM addressed many of our comments in this Draft EIS. As a result, our concerns with the Draft EIS have narrowed to these issues: 1) Groundwater, 2) Mitigation, 3) Phased Development and 4) Air Quality.

Protection of Groundwater

The Draft EIS does not present the locations of the UIC wells. We recommend that the Final EIS discuss the locations of the UIC wells. Also, the Draft EIS states that wells within and immediately outside the permit areas are not used as sources for human consumption, yet the Draft EIS states (Section 3.6.3.2) that water from the uranium target - FG horizon may be used for potable water. The Final EIS should provide additional information to identify USDW aquifers near the project area that may be used for potable water for the Lost Creek Project.

Mitigation

The Draft EIS states (Sections 4.6.1.2 and 4.7.1.1) that procedures, training and reporting for spills or leak prevention are described in the Wyoming Department of Environmental Quality - Land Quality Division's Permit to Mine. For full disclosure of these mitigation techniques, we recommend presenting a summary of these various requirements in the Final EIS.

The Draft EIS presents (Section 2.1.5.1) a discussion on the mine unit reclamation, including well plugging and capping. The discussion provides a very general description of permanently plugging and capping the well and well casings cut off below plow depth. We recommend that this discussion be expanded to include specific monitoring that will be conducted to determine the existence of unplugged wells, and the steps to be taken to ensure that they are plugged properly to prevent impacts to aquifers.

Furthermore, the Draft EIS (Section 2.3.3.3) describes leak detection system as required under 40 CFR 192, Health and Environmental Standards for Uranium and Thorium Mill Tailings. We would like to point out that regulation 40 CFR 192 is currently undergoing rulemaking and may be changed prior to closure and reclamation of this facility. Because of this, requirements for mitigation measures should be reviewed by the BLM as standards change. Specifically, water quality standards after restoration should meet the regulatory requirements under 40 CFR 192 and the restoration plan approved by the Nuclear Regulatory Commission.

Phased Development Concerns

The Draft EIS states (Section 2.1.5.1) that mine unit restoration and reclamation will be done concurrently with production from adjacent operating units. Since reclamation activities can be lengthy and could be impacted by facility requirements to meet production goals, we believe additional information should be presented in the EIS to ensure reclamation activities are completed. This information could include a more complete description of the reverse osmosis (RO) treatment capacity and associated RO production and reclamation operational design capacity.

The Draft EIS presents (Section 2.3.3.4) the alternative Phased Development of Mine Units - Restoration and/or Reclamation Based Phases that was eliminated from detailed study. This alternative was eliminated from consideration in the Draft EIS because it would "not be economically efficient and would constrain some of the available technical options for more efficient mining and groundwater restoration." We suggest providing additional information in support of the conclusion to eliminate this from alternatives analysis in the Final EIS.

Air Quality Considerations

For the Preferred Alternative, a vacuum yellowcake dryer was included in the project process, yet no emissions appear to be included in the emissions inventory (Section 4.11.4.2). We recommend emissions from the dryer be included in the Final EIS.

The Draft EIS presents existing conditions for only PM10 near the Project area. We recommend providing more complete air quality information for existing conditions by including additional criteria pollutants for the surrounding area in the Final EIS. We suggest contacting the Wyoming Department of Environmental Quality (WDEQ) for updated nearby ambient air quality summary data for the criteria pollutants.

Table 3.10-6 Primary and Secondary Limits for NAAQS and the State of Wyoming, should be updated to include the recently finalized NO_2 and SO_2 1-hour NAAQS. Also, the ozone NAAQS is no longer 0.08 ppb, but is now 0.075 ppm.

EPA's Rating and Recommendations

Consistent with Section 309 of the CAA, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on the procedures the EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action, the EPA is rating this Draft EIS as Environmental Concerns – Insufficient Information (EC-2). The "EC" rating indicates that the EPA review has identified environmental impacts that need to

be avoided in order to fully protect the environment. The "2" rating indicates that the EPA review has identified a need for additional information, data, analysis or discussion in the Final EIS in order for the EPA to fully assess environmental impacts from the proposed project. A full description of the EPA's rating system is enclosed.

We hope that our comments will assist you in further reducing environmental impacts of this project. We appreciate the opportunity to review and comment on the Draft EIS. If we may provide further explanation of our comments, please contact me at 303-312-6925, or your staff may contact Ken Distler, at 303-312-6043.

Sincerely,

for Suzanne J. Bohan
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure: EPA's Rating System Criteria

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.