

APPENDIX A COMMENT LETTERS AND RESPONSES FROM PUBLIC SCOPING

BLM conducted public scoping between February 28, 2002 and April 1, 2002. Sixteen comment letters were received during the scoping period. Letters received during public scoping and responses can be found below. Comment letters are italics, BLM response in normal type.

Lynn Clark

I believe the CBM project that Kennedy Oil is undertaking is a worthwhile project. I think that if Kennedy Oil is willing to spend the money it will take to explore this project we should allow it on federal land. With the injection wells that are proposed the water problem of CBM projects will be addressed. I also feel that this type of project is important to our future as a county, state and country.

Thank you for your comment.

Dave Welch

Although there is no apparent impact on historic trails, please keep us on the mailing list for this project.

You remain on the mailing list.

Steven Warner, Department of Energy, Western Area Power Administration

The Western Area Power Administration (Western) is in receipt of your February 28, 2002, Scoping Notice for the proposed Kennedy Oil Pilot Exploratory Coal Bed Methane Project on Federal oil and gas leases belonging to Kennedy Oil and located in Townships 24 and 25 North, Range 98 West, 6th Principal Meridian, Sweetwater County, Wyoming.

Western is a Federal power marketing administration within the Department of Energy. As such, Western is responsible for the construction, operation and maintenance, and reconstruction of transmission lines, substations, switch yards, communication sites, and the roads that provide access to them. Many of Western's facilities are located on Federal lands administered by the Bureau of Land Management within the State of Wyoming. A review of our records indicates there are no Western owned and/or operated facilities located on the affected lands. Western, therefore, has no comments to offer concerning the coal bed methane proposal described in your scoping notice.

Thank you for your comment.

Andrew Morris, EOG Resources, Inc.

In response to your letter to BLM's letter dated February 28, 2002, EOG Resources, Inc. would like to remain on the mailing list for the captioned Environmental review.

You remain on the mailing list.

Patricia Robbins, Sweetwater Economic Development Association

The Sweetwater Economic Development Association would like to express our support for Kennedy Oil's environmental review for a pilot exploratory coal bed methane project in Sweetwater County. We understand that they propose to explore two coal bed methane areas with ten wells in each area, plus 1 injection well each.

The Sweetwater Economic Development Association is confident that Kennedy Oil will adhere to all health, safety and environmental issues while pursuing the feasibility of this project. We are also confident that should this review determine that the project is economically viable, that Kennedy Oil will move forward in the same responsible fashion. We believe that responsible development of these resources will greatly enhance the economic base of the county, through increased employment and additional taxes.

Thank you for your comments.

Matthew Bilodeau, Department of the Army, Corps of Engineers

This letter is in response to the scoping notice we received on March 7, 2002, concerning the Kennedy Oil Pilot Exploratory Coal Bed Methane Project. The notice indicates that the project would include two pods with 10 wells and 1 injection well per pod. The project area covers 10,240 acres in Townships 24 and 25 North, Range 98 West, Sweetwater County, Wyoming.

The U. S. Army Corps of Engineers regulates the placement of dredged and fill material in wetlands and other waters of the United States as authorized primarily by Section 404 of the Clean Water Act (33 U.S.C. 1344). The term "waters of the United States" has been broadly defined by statute, regulation, and judicial interpretation to include all waters that were, are, or could be used in interstate commerce such as rivers, streams (including ephemeral streams), reservoirs, and lakes as well as wetlands adjacent to those areas. The Corps regulations were published in the November 13, 1986, edition of the Federal Register (Vol. 51, No. 219) at 33 CFR Parts 320 through 330. Copies of the regulations and other important information on Section 404 program requirements in Wyoming can be obtained by visiting our website at <http://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm>.

In the case of Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178 (January 9, 2001) (SWANCC), the U.S. Supreme Court held that the Corps exceeded its statutory authority by asserting jurisdiction over "an abandoned sand and gravel pit in northern Illinois which provides habitat for migratory birds." Although the Court held that the

Corps' application of §328.3(a)(3) was invalid in SWANCC, the Court did not strike down §328.3(a)(3) or any other component of the regulations defining "waters of the United States." However, in light of the Court's ruling, the Corps will no longer rely on the use of waters or wetlands as habitat by migratory birds as the sole basis for the assertion of regulatory jurisdiction over isolated, non-navigable, intrastate waters.

Based on the information provided and the court ruling, it has been determined that any wetlands or other waters in the project area are isolated and are no longer considered to be waters of the United States under Section 404 of the Clean Water Act. Therefore, Department of the Army authorization is not required for this project. This determination does not eliminate the requirement to obtain any other applicable federal, state, tribal, or local permits that may be required.

Thank you for your comments. Your comments have been considered in the analysis. See Section 3.5.2.

Thomas Darin, Wyoming Outdoor Council

Please accept the comments of the Wyoming Outdoor Council (WOC) on the BLM proposal to allow a 20 well coalbed methane (CBM) (plus 2 injection wells) project by Kennedy Oil (Kennedy) within Sweetwater County in Wyoming's Red Desert.

WOC is a non-profit conservation group based in Lander, Wyoming and is the largest non-profit, non-affiliated conservation group within the state. Our membership totals over 1,500, and many of our members work, reside, and recreate in that area proposed for the CBM Red Desert Project. WOC stresses that moving forward with the entire project is illegal, as will be more fully discussed below, due to the fact that CBM development is not sufficiently analyzed in the Greer River RMP and Kennedy's MLA leases are invalid for CBM extraction. Accordingly, the entire project is illegal and cannot proceed unless and until the underlying NEPA deficiencies are corrected.

CBM development is spreading faster than wildlife throughout the State of Wyoming. This latest proposal is for CBM development in Wyoming's Red Desert, one of the few places in Wyoming where WOC is opposed to oil and gas exploration and development. We understand Kennedy may have valid leases for oil and gas exploration, but as highlighted below, those leases are not valid for CBM exploration.

The federal oil and gas leases held by Kennedy allow them to explore for natural gas including CBM. See Sections 1.2 and 1.3 of the EA.

The Red Desert is a wondrous and incredible place: the Desert's vast sand dunes, towering buttes and prehistoric rock art define this rich landscape and provide a truly wild habitat for the largest migratory game herd in the lower 48 states -over 50,000 pronghorn antelope in addition to a rare desert elk herd. Indeed, the Red Desert is the largest unprotected and undeveloped high elevation desert left in the United States.

The Buffalo Hump Basin area where the project is proposed is a part of the Red Desert that remains in a more or less primitive state. As such, it provides important habitat for disturbance-sensitive wildlife and plants. Given the increase in developed oil and gas fields and roads in the Red Desert and the corresponding decrease in wildlands, all projects that impact wildness and pristine habitats are of concern. In particular, the Buffalo Hump Basin area is the site of several seasonal lakes and wetlands, and these areas have a high degree of biological importance and significance. The proposed project area lies within lands that are under consideration for designation as a National Conservation Area. In addition, the historic Brannan Homestead will be affected by this project. With gas wells, linked together with a web of surface disturbances ranging from roads to pipelines to well pads to compressor facilities, this wild desert landscape, and the history, culture, Native American spiritual significance and wide-ranging biodiversity it supports, are truly at risk.

Energy operations occur to the south, southwest, and east of the project area within the Red Desert. No seasonal lakes, wetlands, or designated waters of the U.S. are affected by the proposal (see Section 3.5.2 of the EA and the letter from Corps of Engineers above). The historic Brannan Homestead is located over 4 miles to the north (see Section 1.3 of the EA). The BLM is not aware of any recent proposal before Congress to designate the Red Desert as a National Conservation Area.

There are presently over 26,000 permitted coalbed methane (CBM) wells in Wyoming, with projected development to reach 51,000 CBM wells in the Powder River Basin in the next decade, and 139,000 wells by 2060. Using BLM's own projections, this will result in an astounding 1 billion gallons of groundwater each and every day carelessly wasted onto the ground surface. WOC highlights that all of the current coalbed methane development is occurring despite the fact that the associated environmental impacts are severe, irreparable and largely unstudied. True, this development is in the PRB, but CBM development is now spreading to other Wyoming basins. WOC notes that there are three Rawlins FO CBM projects underway (Atlantic Rim (and its 10 PODs), Hanna Draw the Seminoe Reservoir) and it appears as if other basins in Wyoming maybe headed to the same number of wells, along with their devastating environmental, societal and community impacts, that are now plaguing northeast Wyoming. CBM wells start few in number -at one point the PRB only had a few wells -which stresses the utmost caution that Rock Springs BLM must exercise in allowing the first twenty. Twenty can lead to a 100-plus POD, and then, before we know it, we may have the next multi-thousand well industrial site. That this may occur in Wyoming's Red Desert is unthinkable given that 90% of Wyoming public lands are open in some way to oil and gas exploitation. WOC asks BLM whether a few areas - particularly those with the natural resource values of the Red Desert -are worth protecting?

The Powder River Basin is located in northeast Wyoming and has no relevance to this exploratory project located in southwest Wyoming. The purpose of this exploratory project is to test for natural gas in the form of CBM (see Section 1.1 of the EA).

Perhaps the most significant impact is water quantity. WOC understands that the intent is for the water to be injected by way of two Class V UIC injection wells. What, if, however, the targeted

receiving aquifer will not accept the water, as has happened in other injection efforts in Wyoming? This may result in other water "handling" options such as dumping 200,000 plus gallons of discharged water onto the surface each day by these wells. If injection occurs, the byproduct water will still deplete aquifers and seriously compromise the ability of aquifers and watertables to recharge. Accordingly, wells or natural springs will run dry -in some instances they already have in the PRB -and an area that only receives minimal precipitation will literally dry up. The enormous volumes of discharged water will literally rip through and destroy much of this fragile desert landscape. As a significant portion of the soils are at best held loosely to the ground due to little surface vegetation, there will be severe and devastating soil erosion.

Your comments have been considered in the EA. See Sections 1.3, 2.1, 3.4, 3.5, 4.3, and 4.4.

Equally important is the quality of the CBM well water discharge: The EIS must evaluate the contingency that this water will not be able to be injected. In that scenario, of concern is that the water is usually high in salt and sodium concentrations and is unsuitable for dumping onto the ground, either directly or through infiltration wastewater pits. Due to the shale rock formations high in salt and mineral content, the total dissolved solids and salinity of the water will only increase as the floodgates open and water is poured over the surface, absorbing these minerals. The 10,000 plus gallons of water discharged onto the surface each day, from each well, will eventually find their way into creeks, streams, rivers and major watersheds. Untold, and as of yet, unstudied consequences will befall on fisheries populations, recreation opportunities, wildlife and domestic livestock. Other impacts include methane migration to the ground surface (posing a serious health risk to humans as well as wildlife, soils and vegetation), soil erosion from the well discharges and the documented risk of underground fires sparked by spontaneous combustion. These issues must be fully analyzed in an EIS, not an EA.

BLM anticipates the quality of water at the depths proposed for exploration of CBM to be of insufficient quality to allow any surface discharge in accordance with criteria set forth by the State of Wyoming, Department of Environmental Quality, Water Quality Division (DEQ-WQD). See Sections 1.3, 2.1, 3.5, and 4.4 of the EA.

Although WOC has many comments on specific impacts and the cumulative impacts of CBM drilling, addressing those first would be putting the cart before the horse. Initially, prior to initiating a NEPA scoping process, BLM must first address whether any CBM wells are proper. As discussed below, they are not due to NEPA violations.

The Green River RMP, unlike most in Wyoming, at least mentions coalbed methane. Unfortunately, its treatment of the very serious impacts is pitiful. For example, it is now well known how serious the ground water discharge impacts can be; under the heading, "Coalbed Methane Produced Water Disposal Methods;" reinjection/injection is stated, but there is no analysis, environmental or otherwise. Incredibly, the word "reinjection" is typed into the DEIS and simply stands alone, with no analysis of feasibility, impacts of discharged water if not reinjected, etc. (Green River RMPIDEIS at 478). In the final EIS, it is stated that, "[D]ewatering of coal or coalbed methane can adversely affect both quantity and quality of groundwater since such large areas are dewatered and the produced water is either re-injected or evaporated."

(Green River RMP/FEIS at 435). That is all of the analysis. Put simply, is this the requisite "hard look" at this serious impact required by NEPA? Importantly, given NEPA's requirement that agency's take a hard look at environmental impacts, the proposed action, tiered off the Green River RMP, highlights the NEPA deficiencies with respect to CBM in that document. Prior to project approval, the Green River RMP must be amended with a new EIS that thoroughly looks at all of the impacts and issues surrounding CBM development, prior to any development taking place.

The EIS prepared for the Green River Resource Management Plan analyzed the potential impacts of 300 CBM wells within the Field Office area. Reinjection of produced water is a common procedure, when required, for natural gas exploration or production operations.

The second major NEPA violation concerns the validity of the underlying leases themselves. The only document that analyzes the necessary pre-leasing considerations (as contained in BLM Handbook 1624-1) is the Green River RMP/EIS. That document, as stated above, does not adequately assess the widespread environmental impacts of CBM production. Accordingly, BLM is provided notice herein that WOC itself is exploring -exploring the legal options and issues relating to challenging the validity of these leases for CBM extraction. BLM -and Kennedy for that matter -should note that IBLA has already granted an injunction in a recent case, enjoining leases within this resource area that would be used for CBM extraction, for the very reasons stated herein. See Wyoming Outdoor Council. IBLA 2000-309 at 3, 4 (Order, Feb. 15~ 2001) (enjoining a lease within the Green River resource area for CBM use).

Your comment has been considered in the analysis. See Sections 1.2 and 1.3.

WOC is pleased to see that some of the impacts of CBM development are being handled by injecting this water into a deeper aquifer, one that apparently is of lower quality than the coal seam. However, many potential issues must be thoroughly explored in the EIS. These include:

- *The capacity of this receiving aquifer to store and contain the massive amounts of water from 20 producing CBM wells;*
- *Hydraulic fracturing (or fracing) is going to occur. Analysis will be required concerning the possible contamination of other aquifers (via well casing leaks, aquifer communications and naturally occurring fractures). As BLM knows, EPA was successfully sued in Alabama (11th Circuit Court of Appeals) for failing require the state DEQ to permit the use of fracing fluids. The use of fracing fluids by Kennedy poses risks to drinking water supplies, and may violate the Safe Drinking Water Act. These issues alone require a thorough analysis in an EIS, as human health and safety may be at risk;*
- *The amount of water that can be safely stored and contained in the receiving aquifer.*

While reinjection has been recommend by WOC as a key mitigation technique, the issues surrounding this process require a full environmental analysis in an EIS.

Your comments have been considered in the EA. See Sections 1.3, 2.1, 3.5, and 4.4.

As injection may fail due to various geologic conditions and the baseline characteristics of the recycling aquifer, BLM must fully analyze in the EIS the very real possibility that injection will fail. In that case, the water will be discharged onto the surface, which has very serious environmental consequences. These include:

The Clean Water Act mandates that federal agencies, here BLM, shall be subject to and comply with all federal, state and local requirements respecting the control and abatement of water pollution. 33 V.S.C. § 1323(a). Any adequate NEPA document must analyze, with many samples throughout the region, tested from the depth of the actual producing coal seams, salinity and SAR values.

The proposed action complies with all federal, state, local requirements. See EA, Sections 1.2 (Table 1.1), 2.1, 3.5, and 4.4.

Soils. In addition to salinity and SAR values in discharged water, a complete NEPA document must thoroughly analyze the effects of these high discharges of water on soils, including dispersal (high sodicity impact) and erosion. In particular, WOC is concerned about the discharge of water in playas, closed basins, in areas with soils having low reclamation potential and in areas where there are poorly-drained soils, in order to prevent the accumulation of salts and other minerals. This will lessen the likelihood for invasion of weed and salt-tolerant species and the erosion of bare soils. Apart from water impacts on soils, BLM must also consider the fragile soil/sand types in the Desert and analyze possible long-term destruction of soils and provide a full, scientifically based disclosure on the feasibility of reclamation.

No surface water disposal is proposed. See EA, Sections 1.3, 2.1, 3.4, 3.5, 4.3, and 4.4.

Reservoirs. Due to CWA legal issues, industry is now turning to constructing massive reservoirs to handle CBM water, designed to bleed into the water table. BLM must analyze the impacts of these reservoirs to soils, historic and cultural sites, wildlife and migratory birds. BLM must also analyze the end-game issues: will these reservoirs be able to be reclaimed; what will happen with salt-laden soils that accumulate over the years. Further, BLM must require full compliance with reservoirs and the CWA, as bleeding into the water table, which is hydrologically connected to surface waters is a point source of water pollution. In addition, these infiltration pits are most likely injection wells that need permits pursuant to the UIC program under the Safe Drinking Water Act.

No reservoirs are proposed. See EA, Sections 1.3 and 2.1.

A problem that goes hand-in-hand with mitigation of surface impacts due to water discharge is the answer to the following very important question: how long, and in what fashion, will aquifers recharge? It has already been well documented in the other Wyoming regions that local landowners' wells have run dry as a direct result of aquifer depletion. Long-term studies are needed, unique to each coal seam, that address permeability issues, time and nature of recharge and the potential sub-strata subsidence (meaning an entire collapse of an aquifer once the stabilizing water is withdrawn). BLM must also analyze communication between aquifers, the chances of cross-aquifer contamination and how the proposed 22 wells will affect these issues. In short, BLM must know, not merely hope for, answers to these questions that clearly indicate long-term water needs (10 to 200 years) in Wyoming will not be held hostage to short-term industry profits.

Your comment on water aquifers have been considered in the EA. See Sections 1.3, 3.5, and 4.4.

BLM has a mandatory duty in the NEPA process to explore all reasonable mitigation alternatives to lessen impacts to other natural resources. Two that are particularly relevant in CBM development include desalinization water treatment options (should surface discharge occur) and the use of renewable energy sources (e.g., fuel cell, solar) to supply power for submersible pumps, generators and compressor stations. These alternatives would severely ameliorate water, fisheries and wildlife impacts, as well as reducing noise and air pollution and preserving open space). Another emerging technology is the elimination of drilling reserve pits through a closed-loop drilling and recycling system. WOC has read and hereby incorporates the scoping comments of Biodiversity Associates for this project with respect to directional drilling.

Your comments have been considered in the analysis. Surface disposal of produced water is not an option; hence, desalinization of such water is irrelevant. No submersible pumps, generators, or compressor stations are proposed under this action. Pump jacks would be fueled by propane until production is evaluated. Should production ensue, pump jacks would be powered by produced gas. See Section 2.1 and additional mitigation identified in Chapter 4, Environmental Consequences.

CBM gas migration and the potentially lethal impacts to human health, vegetation and wildlife (particularly burrowing mammals) must be thoroughly studied and assessed by BLM.

Your comment has been considered in the EA. See Section 1.3. The Big Red Coal zone is at least 3,800 feet below the surface. Any methane would need to migrate through more than 3,000 feet of layered rock to reach the surface, an unlikely event since well bores would be cemented to prevent any gas migration. There are over 500 shallow (less than 4,500 feet) gas wells in Wyoming. Many of those wells produce from gas reservoirs that are much shallower than the Big Red Coal zone found in the project area.

BLM must also analyze the very real possibility of spontaneous combustion within the coal seams if – now it seems that when is the operative word given the explosive growth of CBM development – coals seams are dewatered. These underground fires have been documented in other CBM extraction sites – BLM in Colorado, for example, has at least addressed this issue – and the possibility of uncontrollable fires burning within a hundred feet of ground surface must be studied and addressed. The most base-level concern for human health and the communities of Wyoming commands heightened levels of attention to this issue.

Your comment has been considered in the EA. See Section 1.3.

BLM Instruction Memorandum 99-178 recognizes that, "weeds frequently thrive when the land is disturbed." Accordingly, "All NEPA documents must include an analysis of the potential for weed spread and establishment as an environmental consequence of proposed actions. Measures and stipulations to minimize or avoid the spread of weed[s] must be provided." (BLM I-M 99-

178 at 2-3 (1999) (emphasis added). Accordingly, the EIS in this case must analyze CBM well water discharge and infrastructure development impacts to native plant species.

Your comment has been considered in the EA. See Sections 2.1.9.7, 3.6, and 4.5.

FLPMA and the Clean Air Act both mandate the protection of air and atmospheric values. Air quality, as it affects wildlife, vegetation, human health, and visibility impairment in sensitive Class I and Class II areas, must be sufficiently addressed.

Your comment has been considered in the EA. See Sections 3.3 and 4.2. No Class I or Class II airsheds are affected by the proposed action which is to test economic feasibility of CBM extraction.

The EIS must also address import impacts to wildlife, sensitive, threatened and endangered species -both plant and animal, game and non-game. WOC hereby adopts and incorporates the excellent and very specific comments that need to be addressed concerning wildlife as stated by Biodiversity Associates.

Your comment has been considered in the EA. See Sections 3.6, 3.8, 4.5, and 4.7.

Just because the water may be injected, not all of the dewatering impacts disappear. In addition to belowground aquifer considerations discussed above, BLM must also inventory existing natural springs in the area, and consider the impacts that dewatering belowground resources may have on spring hydrology. These are a very critical water resource – particularly in a desert ecosystem – and impacts to springs including baseline data must be included in the EIS.

Your comments have been considered in the EA. See Sections 3.5, 3.6, 4.4, and 4.5.

There are no known springs in the Kennedy project area. If there were springs, based on the geological information available, they would most likely be tied to sandstone layers in contact with the surface which are separated by over 3,000 feet of rock strata from the Big Red Coal bed. Depletion and reinjection of water would not affect any unknown springs that might possibly exist in the area.

Historically, BLM, particularly in the area of CBM drilling, often defers the bulk of the required environmental analyses to the APD level. This is unacceptable and in direct contravention of both the spirit and letter of NEPA's mandates. NEPA simply requires that all of the potential environmental impacts be studied prior to, and not after, the full commitment of resources is made by granting approval to a multi-well project.

This environmental document serves as a site-specific analysis of the potential environmental effects of the proposed action and alternatives to determine whether any of the potential impacts are considered significant.

Any project in the Rock Springs resource area must consider the impacts to reasonably foreseeable development in the area, including state and private wells. Other traditional oil and

gas development must also be considered, in terms of the effects of roads, power lines, compressor stations, pipelines and other surface disturbances.

The purpose of this proposal is to determine whether or not there is potential for economically feasible natural gas production. It is not possible to determine future CBM development until such information is gathered. Cumulative impacts have been considered in the EA due to other activities including other natural gas exploration and production. See Chapter 4, Environmental Consequences, for cumulative impacts for each resource value.

In Wyoming's Red Desert, the above categories of multiple uses must be carefully examined in the EIS. What will impacts be to recreational interests, including hiking, wildlife viewing, enjoying open spaces and solitude. These will all be disturbed by air pollution, surface disturbance, permanent soil destruction, invasive weeds and year-round noise.

Your comment has been considered in the EA. See Sections 3.10 and 4.9.

NEPA requires an EIS when a major federal action will significantly affect the human environment. We are now at the infancy stage of the hottest gas play in the United States, with CBM development expected to grow exponentially in Wyoming's backyard in the next decade. As illustrated by the above categories of impacts, this project proposal will undoubtedly have significant impacts on the human environment. An EA is simply not an option.

The Wyoming Outdoor Council appreciates the opportunity to comment on the Kennedy CBM Project within the Red Desert. It simply cannot be overstated that BLM proceeds with this project at its own peril: FLPMA and NEPA mandate that the Green River RMP be amended prior to any CBM development in the area. In addition, the leases are invalid for CBM extraction. However, if BLM chooses once again to proceed down what is certainly a litigious path (and not amend the RMP and then re-sell leases that would be valid for CBM extraction), WOC urges injection, aquifer recharge, surface disturbance issues, impacts to wildlife, underground fires and the other certain impacts outlined herein be very carefully studied, analyzed, and assessed in an EIS.

The proposal is in conformance with the Green River RMP and all affected resources have been adequately protected.

Erik Molvar, Biodiversity Conservation Alliance (formerly Biodiversity Associates)

With this letter Biodiversity Associates submit our comments on the Kennedy Oil coalbed methane project. We incorporate by reference Biodiversity Associates' letter of 8, 2002 concerning the Vermillion Basin Natural Gas Project. We have some major concerns about this project that will need to be addressed through the NEPA process.

The Buffalo Hump Basin area is a part of the Red Desert that remains in a more or less primitive state. As such, it provides important habitat for disturbance-sensitive wildlife and plants. Given the increase in developed oil and gas fields and roads in the Red Desert and the corresponding

decrease in wildlands, all projects that impact wildness and pristine habitats are of concern. In particular, the Buffalo Hump Basin area is the site of several seasonal lakes and wetlands, and these areas have a high degree of biological importance and significance. The proposed project area lies within lands that are under consideration for designation as a National Conservation Area.

All of the current coalbed methane development is occurring despite the fact that the associated environmental impacts can be severe and irreparable and are largely unstudied. Perhaps the most significant impacts are water quantity and quality. It difficult to overstate how serious the impacts could be from 20 CBM wells. Each well may produce up to 20 gallons of discharge water per minute per day, and the amount of CBM water discharged will exceed 13 million gallons per day, withdrawn from aquifers that may feed springs, seeps, and surface streams in this fragile desert ecosystem. This water will first and foremost deplete aquifers and seriously compromise the ability of aquifers and water tables to recharge. Importantly, the water tables in important floodplains vital to the biodiversity of the region may be seriously compromised in terms of their ability to provide water in times of drought. Thus, a complete analysis [sic]

Your comments have been considered in the EA. See Sections 1.3, 2.1, 3.5, and 4.4. Also see response to section of Wyoming Outdoor Council's letter regarding water seeps, springs, etc.

If these produced waters were discharged at the surface, the enormous volumes of discharged water will literally rip through and destroy much of the landscape of these deserts. Soil erosion will be severe, as well as the loss of native desert species due to the invasion of exotic weeds due to the sodium and mineral deposits left behind by this water. Thus, reinjection of produced waters is an absolute necessity, and should be retained for this project.

Your comments have been considered in the EA. See Sections 1.3, 2.1, 3.5, and 4.4. Also see response to section of Wyoming Outdoor Council's letter regarding produced water discharge.

Equally important is the quality of the CBM well water discharge. The groundwater found here is usually high in salt concentration and sodicity and would compromise the integrity of the area's delicate soils and waters. Untold, and as of yet, unstudied consequences would befall soils, plants, and wildlife populations. The potential loss of native vegetation to soil erosion, washout, stream bank erosion and high salt concentration in the soils would be severe if reinjection is not practiced. Other impacts include methane migration to the ground surface (posing a serious health risk to humans as well as wildlife, soils and vegetation), ground surface subsidence, soil erosion from the well discharges and the documented risk of underground fires sparked by spontaneous combustion. These issues must be fully analyzed in the upcoming EIS, as this is a project that will undoubtedly significantly affect the human environment.

Your comments have been considered in the EA. See Sections 1.3, 2.1, 3.5, and 4.4.

Biodiversity Associates a number of concerns about the potential impacts of the proposed Kennedy Oil Coalbed Methane Project. In order to satisfy NEPA "hard look" requirements, the forthcoming NEPA document must satisfy these concerns.

1. The NEPA document should address not only the impacts specific to the project but also evaluate cumulative impacts taking into consideration the oil and gas developments on surrounding lands. This analysis should address habitat fragmentation on a landscape scale.

2. The project would have a number of impacts on wildlife. Notably, the construction of new roads and well pads will drive off native wildlife during the construction period, and the resulting vehicle traffic, with associated noise and dust, will have serious impacts on the habitat use of native wildlife throughout the life of the project.

Sage grouse are of particular concern, because this species is declining nationally. The BLM should survey the project area for sage grouse leks, which are used traditionally year after year. Because nesting and brood-rearing habitat occurs in the immediate vicinity of lek sites, no construction activities should be allowed within 2 miles of a lek site. In addition, the area should be surveyed for sage grouse wintering habitats. Any such habitats should trigger strict stipulations prohibiting all human activities and noise (such as working pumps) during the wintering season.

Population data must be gathered on other rare and sensitive species. Buffalo Hump provides potential nesting habitat for ferruginous hawks. Raptor nests of all kinds need to be documented, and human activities must not occur within 2 miles of active nests during the nesting season. White-tailed prairie dogs are also of concern? not only because this species is declining, but also because it is a keystone species which creates habitat for other rare and declining wildlife. Impacts to prairie dog colonies would also impact ferruginous hawks, burrowing owls, and mountain plovers. The impacts of the proposed project on prairie dogs and direct effects on the latter species must be studied. In addition, the BLM must consider impacts to other wildlife that may be found in the project area, such as the eastern short-homed lizard, pygmy rabbit, and rare and declining shorebirds.

Effects of the project on wild horses must be studied, as this area is inhabited by a large herd of these animals.

Effects on game animals, particularly mule deer and antelope, must be studied. Ungulates are highly sensitive to increases in roads and vehicle traffic which would be an inevitable outcome of this proposed project. Crucial winter ranges must be identified, and all human activities must be prohibited on such lands between November 15 and April 15.

Your comments have been considered in the EA. See Sections 3.8 and 4.7.

3. Potential increases in salinity and sodicity associated with well-water discharge could wreak havoc on the delicate balance of plant and animal life in the area. Thus, no surface discharge must be allowed in conjunction with the proposed project.

Your comments have been considered in the EA. See Sections 1.3, 2.1, 3.5, and 4.4.

4. Effects of the dewatering of aquifers must be adequately addressed. Will this project cause springs in the area to dry up, particularly those that feed seasonal playa lakes? If so, measures must be taken to ensure that water levels in playa lakes and wetlands remain identical throughout the year to natural, pre-project levels.

Your comments have been considered in the EA. See Sections 3.5 and 4.4. Also see response to Wyoming Outdoor Council's letter with regard to seeps and springs.

5. The area should be surveyed for rare native plants, and mitigation measures should be adopted to prevent damage to rare or declining populations.

Your comments have been considered in the EA. See Sections 3.6 and 4.5.

6. Shoshone and Ute tribes should be consulted regarding the potential cultural and/or sacred significance of Buffalo Hump and the playa lakes that surround it.

Cultural resources including Native American religious concerns have been considered in the EA. See Sections 3.12 and 4.11.

7. The EA should include all possible measures to prevent adverse environmental impacts due to toxic substances used and/or disposed of during the drilling and production processes. For example, all reserve pits should be lined, regardless of soil permeability, and absolutely NO construction of any kind should take place within 500 feet of surface water or riparian areas to prevent sedimentation.

Your comments have been considered in the EA. See Sections 2.1, 3.16, and 4.15.

8. The NEPA document must provide adequate analysis of the possibility of subsidence and earthquakes due to ground water drawdown and degasification at the coal seam.

Your remaining comments have been considered in the EA. See Sections 1.3, 3.1, and 4.1.

9. The NEPA document must disclose the extent of hydraulic fracturing inherent to the project, nor the effects of toxic fracturing fluids on groundwater or other resources. It is well-known that fracturing is a common practice in CBM extraction, and that fracturing fluids include a number of highly toxic substances. This information is needed to satisfy NEPA "hard look" requirements.

Formation fracturing is common in oil and gas production. Your comments have been considered in the EA. See Sections 1.3 and 2.1.

10. It is imperative that the reclamation requirements include stipulations that clearly mandate the use of native species for reseeding purposes. Exotic species such as crested wheatgrass and kosha are especially deleterious and must be excluded from reseeded lands.

Your comment has been considered in the EA. See Section 2.1.

11. The effects of the project on biological soil crusts must be examined. These soil crusts, consisting of bryophytes, cyanobacteria, fungi and lichens, and mosses, fulfill an important role in desert ecosystems, effectively increasing soil temperature and rainfall absorption while preventing runoff and attendant erosion. Even after reclamation efforts, biological soil crusts will take decades to recolonize disturbed sites. The BLM needs to take the "hard look" required by NEPA at the status and trends of this important ecological component before proceeding farther with this project.

Your comment has been considered in the EA. See Section 1.3.

12. The NEPA document should require that a 500-foot buffer of vegetation will be maintained between surface disturbances and drainage channels, playas, and wetlands, without exception. Requirements to avoid stream channels and riparian vegetation need to be ironclad.

The approved Green River RMP states “[s]urface disturbing activities (e.g., mineral exploration...) that could adversely affect water quality, and wetland and riparian habitat, will avoid the area within 500 feet of or on 100-year floodplains, wetlands, or perennial streams and within 100 feet of an inner gorge of intermittent and large ephemeral drainages. Proposals for linear crossing in these areas will be considered on a case-by-case basis...if a site specific analysis determines that no adverse impacts will occur...” No known playa lakes or wetlands would be affected by the proposed action.

13. Reserve pits must always be lined with impermeable fabric, because they will contain hazardous chemicals. It is not sufficient to assume that some soils and bedrocks will prevent leakage from reserve pits; the BLM has no way of guaranteeing that no leakage will occur. Thus, all reserve pits must be lined. In addition, the subsequent backfilling of reserve pits is absolutely unacceptable. All toxic products must be removed from the site at the time of well abandonment, not buried and forgotten to leak out over time and poison soils, water, and wildlife. All reserve pit contents should be carefully removed by the operator at the operator's expense and disposed of at a site built specifically to handle toxic wastes.

Kennedy proposes to line all reserve pits (see Section 2.1). There are no toxic products in drilling fluids. Materials used exclusively for drilling exploratory oil and gas wells are exempt from Resource Conservation and Recovery Act (RCRA) requirements. Thus, your comment to remove toxic products is irrelevant.

14. [sic]

15. The soil potential for revegetation must be evaluated, and steps must be taken to ensure that impacts which are reclaimed are erased swiftly from the landscape.

Your comment has been considered in the EA. See Sections 2.1, 3.4, and 4.3.

In the forthcoming NEPA document, the BLM must develop a full range of reasonable alternatives including a minimum footprint directional drilling alternative. The need to employ directional drilling technologies to reduce environmental impacts of mineral development is a high priority of the Bush administration. The President's National Energy Policy contains a section titled, "21st Century Technology: The Key to Environmental Protection and New Energy Production," which states:

"Producing oil and gas from geologically challenging areas while protecting the environment is important to Americans and to the future of our nation's energy security. New technology and management techniques will allow for sophisticated energy production as well as enhanced environmental protection... Smaller, lighter drilling rigs coupled with advances in directional and extended-reach drilling significantly increase protection of the environment...Modular drilling rigs, "slimhole" drilling, directional drilling, and other advances enable: [...]

** production of oil and gas with increased protection to wetlands and other sensitive environments;*

Other examples of advanced technology include: [...]

** highly sophisticated directional drilling that enables wells to be drilled long horizontal distances from the drilling site[.]"*

National Energy Policy, May 2001, "Reliable, Affordable, and Environmentally Sound Energy for America's Future: Report of the National Energy Policy Development Group," p. 5.5.

Likewise, the Secretary of the Interior has emphasized the need to begin utilizing directional drilling technology:

We must also harness 21st Century technology to help our environment. Where we once needed scores of wells to tap underground reserves, today in some areas we can use one hole on the surface to drill for oil in a circle extending seven miles. We can use the resources below ground while we preserve the landscape and habitat above.

Presentation of Gale Norton, Secretary of Interior, to the National Newspaper Association (Washington, DC, March 23,2001).

Directional drilling is the most environmentally responsible way to develop oil, gas, and coalbed methane fields, is practical from a geologic standpoint, is economically feasible, and produces equal or even superior results when compared to vertical drilling. It is manifestly obvious that gas development is appropriate only for some lands; critical wildlife ranges, alluvial floodplains, and other ecologically sensitive areas should be excluded from all surface developments. But there is every reason for the superior technology of minimum-footprint directional drilling to be mandated for use in all federal subsurface leasing situations where development is deemed appropriate, including exploration, infill, and full-field development of new geologic formations.

The reduced environmental impacts of directional drilling are well-documented. Cluster drilling from a single well pad (French Oil and Gas Association 1990) can reduce the footprint of oil and gas development on the landscape by concentrating the activity and impacts of many wells at a few widely dispersed sites. Because fewer directional wells are required to drain a subsurface reservoir, well spacing is always greater for directional wells (Fritz et al. 1991). Indeed, Joshi (1991, p.4) stated that "to achieve larger producible reserves, horizontal wells will have to be drilled with a larger well spacing than vertical wells." Horizontal drilling can now reach subsurface reservoirs up to 29,000 feet away from the drilling site in horizontal distance (Al-Blehed et al. 2000). Thus, by requiring directional drilling for the Kennedy Oil CBM Project, the BLM can allow subsurface minerals to be extracted without sacrificing the ecological, roadless, wilderness, and recreational values found within the project area.

Not only is directional drilling more environmentally responsible, it is also more effective at removing oil and gas from geologic formations than conventional vertical wells. Thakur (1999) reported that because horizontal drilling is a more efficient extraction method, it can increase the recoverable reserves for a given reservoir. Fritz et al. (1991) reported that directional drilling has had a higher percent success than vertical drilling in both the Austin Chalk and Williston Basin fields. Joshi (1991) asserted that for natural gas production, horizontal wells improve drainage area per well for low-permeability geologic formations, reduced near-wellbore turbulence and increased delivery efficiency for high-permeability formations. Horizontal drilling technology is so effective that it has become the benchmark for the industry: Miller and Steiger (1999) boasted that their array of vertical and directional wells had production that equaled high benchmark projections from horizontal drilling. Furthermore, directional drilling reduces "coning," the mixture of oil with gas and water that reduces production efficiency for oil and gas (Joshi 1991, Thakur 1999).

Directional drilling is a universally practical solution to oil and gas recovery. It is suitable for both exploration and full-field development (French Oil and Gas Association 1990). Aguilera et al. (1991) lauded the potential of horizontal drilling in infill situations. In 1991, Fritz et al. (p.36) noted that, "If the cost of drilling a horizontal well was equal to that of drilling a vertical well, most reservoirs would be candidates for horizontal drilling." These costs have in fact equalized in modern times. Aguilera et al. (1991, p.1.) stated that, "Theoretically, all reservoirs can benefit from horizontal wells." Al-Blehed et al. (2000) asserted that horizontal drilling is superior to vertical drilling for a variety of conditions including for naturally fractured reservoirs, thin reservoirs, heterogeneous reservoirs, vertical permeability homogeneous reservoirs, reefs or isolated sand bodies, and faulted reservoirs. Thus far, horizontal drilling has been proven applicable in a variety of geological settings, and we know of no examples of cases where vertical drilling offers superior results.

The economic feasibility of directional drilling has been well demonstrated. Baker et al. (1984) performed an economic analysis on coalbed methane recovery via directional drilling, and found it to be economically feasible. Cluster development of many wells on a single pad offers minimizes the capital investments of lessees (French Oil and Gas Association 1990), and reduces costs for an expensive and ecologically damaging network of improved roadways. In 1991, Joshi (p.7) noted that costs for directional wells were 1.4 to 3 times higher than costs for vertical

wells, but further noted that "In some cases, with extensive drilling experiences, the horizontal well costs are reported to be almost the same or even lower than vertical well costs." But because directional drilling requires fewer wells and yields more production per well, overall oilfield development costs may have been lower even with the older technology available in the early 1990s. Because each directional well drains a greater reservoir volume than a corresponding vertical well, fewer wells are required to drain a reservoir, reducing up-front project costs (Fritz et al. 1991). These researchers further compared the costs of older-technology directional drilling with vertical drilling, and found that oil production costs per barrel were lower for directional drilling in the Austin Chalk, but higher in the Williston Basin of North Dakota. In modern times, the technology continues to improve and efficiencies rise. Al-Blehed et al. (2000) stated that their use of horizontal wells reduced drilling, flowline, and facilities costs by 20-25% over vertical drilling.

Directional drilling, in its several forms, has been shown to be remarkably versatile as an alternative to conventional vertical drilling in recovery. Directional drilling has been shown to increase rate of gas production and overall recoverable quantity for tight gas sands (e.g., Cassetta 1998). Directional drilling is also applicable to coalbed methane production, but drilling rig placement may be constrained by rock jointing and fracture patterns (Moore and Moore 1999). O'Rourke et al. (1997) found horizontal drilling of paired wells to be effective in gas production using steam injection techniques. For heavy oil recovery, Shirif (2000, p. 894) noted that, "For a given pattern, there is a horizontal well configuration maximizes the total production rate." In all cases, directional drilling has resulted in superior economic yields when compared to conventional vertical drilling.

Directional drilling is proven as an effective alternative to vertical drilling in Wyoming. The first directional well in Wyoming was completed in 1987, and as of 1994, 80 producing wells were completed out of 117 attempts (Stewart 1995). As of October 2001, Wyoming has 504 horizontal or directional wells on-line, according to State of Wyoming data. According to Krystinik (2001), a horizontal well drilled in the Green River Basin's Frontier formation reached a depth greater than 15,000 feet in tight-gas sandstone, was drilled at a cost that was reduced to 50% of the industry average, and achieved economic production of greater than 14 mscf/day. Iverson et al. (1995) found that even without hydraulic fracturing, a horizontal well tapping into the Almond formation produced as much gas as a conventional well that used hydraulic fracturing.

Even if the costs of directional drilling are higher for this project, the BLM should require Kennedy Oil to employ this method. Part of the cost of doing business on public lands is taking sometimes-costly measures that protect the public's interest in its lands, waters, and wildlife. Kennedy Oil should expect as much, and the BLM has the responsibility to carry this message from the public to the private corporations that reap their profits from our public lands.

Your comments on directional and horizontal drilling have been considered in the EA. See Section 1.3 and 2.3. Most of the references cited in your comment letter apply to wells drilled offshore, in remote onshore locations, or to wells drilled to control bottom water influx in oil reservoirs or develop low permeability fractured oil and gas reservoirs. Some citations could not be verified (see Vermillion Basin Decision Record of August

15, 2002, Appendix D, Letter of May 10, 2002, from Reservoir Management Services, Inc. Document can be downloaded from the internet at <http://www.wy.blm.gov/nepa/nepadocs.htm>).

Only one reference in the comment letter (Baker et al, 1984) specifically addressed the feasibility of directional drilling for coalbed methane. The study, done by U.S. Bureau of Mines, involved drilling three lateral drains in anthracite coal in the Emerald Mine area in Pennsylvania. Anthracite coal is much denser and probably has substantially higher gas content than the subbituminous coal in the Kennedy project area. The well drilled by the Bureau of Mines had serious mechanical problems and as the author of the report states “[l]ittle has been produced from the Emerald Mine directional hole because of caving of the horizontal holes drilled in shale near the bottom of the casing.” Another factor of the Baker et al report assumed a gas production rate and price. A 25% rate of return after taxes was calculated. The economic analysis done did not include severance and ad valorem taxes, or landowner royalty. In Wyoming, such taxes and royalties total approximately 25% of gross revenue. Gas compression costs in Wyoming would also likely be higher (assuming \$0.15/MCFG or 7.5% of the gross sale price at \$2.00/MCFG). The evaluation prepared by Baker et al. (1984) has little relevance to the geologic or economic conditions found in the Kennedy project area. The Baker et al. study does not indicate that directional or horizontal drilling would be technically or economically feasible in the Kennedy project area.

The purpose of the Kennedy Oil’s CBM Exploratory Pilot project is to gather and evaluate data to determine the feasibility of development. Reliable information on reservoir heterogeneity, coal thickness, coal gas content, gas chemistry, recovery efficiency, coal permeability, water quality and quantity must be acquired.

Given the colossal amount of mineral development across BLM lands throughout Wyoming that has degraded huge amounts of wildlife habitat and has developed vast quantities of wild and previously undeveloped land; the BLM must carefully evaluate and consider the trade-offs in losing wildlife habitat, recreation opportunities, and open country in its upcoming NEPA document, and also evaluate alternatives that minimize environmental impacts in addition to alternatives that maximize corporate profits.

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Larry Di Brito

The Wyoming Red Desert is like Grand Teton and Yellowstone when it comes to nature and wilderness. Why tear apart? The number two Sand Dunes in the world. The Oregon Trail, the California Trail, Red Desert flat and basin, Boars Tusk, Steamboat Mountain, Green Mountains, White Mountains, cave paintings and Chain Lakes. Land of the eagle, antelope, mule deer, coyotes. You can use this place for war games, for grazing cattle, sheep, and wildlife. Why [does] Wyoming have to do it all? Please save just this Red Desert, Adobe Town, Devils Playground, and Jackson Hole.

Thank you for your comments. However, with the exception of Red Desert Basin, the geological features mentioned in your letter are not affected by the Proposed Action.

Tracy Williams, Office of Federal Land Policy

The Office of Federal Land Policy has reviewed the referenced scoping statement on behalf of the State of Wyoming. This Office also distributed the referenced document to all affected state agencies for their review, in accordance with State Clearinghouse procedures. Attached are comments from the State Historic Preservation Office, Wyoming Game and Fish Department and the Wyoming Business Council-Minerals, Energy and Transportation and the State Engineer's Office. : While the State defers to its agencies' technical expertise in developing the State's position, the responsibility to articulate balanced official, unified State policies and positions lies with the Governor or the Office of Federal Land Policy.

At this time in the initial scoping stage, this office has no official position. However, we do ask that the attached comments receive your favorable consideration.

Thank you for your comments.

Judy Wolf, Department of State Parks & Cultural Resources State Historic Preservation Office

Our staff has received information concerning the aforementioned. Thank you for allowing us the opportunity to comment.

Management of cultural resources on Bureau of Land Management projects is conducted in accordance with Section 106 of the National Historic Preservation Act and Advisory Council regulations 36 CFR Part 800. These regulations call for survey, evaluation and protection of significant historic and archeological sites prior to any disturbance. Provided the BLM follows the procedures established in the regulations, we have no objections to the project. Specific comments on the project's effect on cultural resource sites will be provided to the BLM when we review the cultural resource documentation called for in 36 CFR Part 800. Please refer to SHPO project control number 0302TLGO27 on any future correspondence dealing with this project.

Regulations pertaining to cultural resources will be adhered to. See Sections 2.1, 3.12, and 4.11 of the EA.

John Robitaille, Wyoming Business Council

These comments regarding the Kennedy Oil Pilot Exploratory Coal Bed Methane Project have been approved by the Director of the Wyoming Business Council's Minerals, Energy and Transportation Division and are specific to this agency's statutory mission within state government which is to be directly involved in state and federal policy work to assure reasonable access to public lands. In that regard these comments are meant to, in association with all other agency comments, assist in defining the Official State Position. These comments defer to and are subordinate to the Official State Position.

The Wyoming Business Council's Minerals, Energy and Transportation Division has reviewed the above referenced scoping statement and feels it is in Wyoming's best interest to continue to pursue the proposed project. We look forward to reviewing the appropriate National Environmental Policy Act (NEPA) document, in order to gain a much broader understanding, and review of the specifics of the proposed action. In addition, we stand ready to provide any technical expertise or technical comments to assist in the formulation of a state position.

Thank you for your comment.

Richard G. Stockdale, State Engineer's Office

The State Engineer's Office review of the subject project revealed the following. The project proponents did not acknowledge the necessity for obtaining permits to appropriate ground water from the State Engineer's Office. A check of the records of this office revealed that no permits to appropriate ground water for each of the proposed coalbed methane wells have been obtained from the State Engineer's Office at this time.

Approved permits to appropriate ground water obtained from the State Engineer's Office will be required for each CBM well prior to the construction of the well. Permits from the State Engineer may also be required to beneficially use the produced CBM water for various other project purposes, such as hydrostatic testing of pipelines, well drilling, dust abatement, etc. In addition, the project document was not very clear as to where the water to drill the CBM wells would be obtained. Permits from the State Engineer may be required for use of the water from whatever source is identified as supplying the water for drilling the project wells.

Due to the relatively deep CBM production interval, the State Engineer's Office does not anticipate interference to develop between the CBM wells and other existing wells in the area. However, if interference were to develop between CBM wells and existing water wells as a result of ground water production associated with CBM production, State water law has provisions to deal with such an event.

Your comments have been considered in the EA. See Sections 1.2 (Table 1.1). All required state water permits will be acquired prior to initiating the project components.

Bill Wichers, Wyoming Game and Fish Department

These comments regarding the scoping statement for the Kennedy Oil Pilot Exploratory Coal Bed Methane Project have been approved by the Director and are specific to this agency's statutory mission within State government which is "Conserving Wildlife, Serving People". In that regard, these comments are meant to, in association with all other agency comments, assist in de rurg the Official State Position. These comments defer to and are subordinate to the official state position.

There is no mention of big game species as an issue in the scoping document. The project area serves as spring/summer/fall range for the Red Desert pronghorn herd and winter/yearlong range for the Steamboat elk herd. Numerous bull groups have been observed wintering in the Buffalo Hump area in recent years. The BLM is aware of, and participated in, the recent update to the Steamboat elk distribution map. Potential impacts to big game should be addressed in the Environmental Assessment (EA).

The scoping document correctly identifies sage grouse, raptors, mountain plover, and prairie dog towns as issues. Specifically, there are three known sage grouse lek locations, with associated nesting habitat, in the vicinity of the project that should be identified in the EA. These leks are located in NESW section 16 and NENWSE of section 25, T24N, R98W, and in NWSE of section 11, T25N, R98W. The numbers of birds observed on these leks declined in the late 1990's, in contrast to many other leks in the region that showed significant increases during that time. The EA should address this decline in terms of increased levels of human activity related to development in the area. Well road density and water disposal should be specifically addressed relative to effects on wildlife. The EA should discuss the mitigation of expected impacts.

Your comments have been considered in the EA. See Sections 3.8 and 4.7.

Dru Bower, Petroleum Association of Wyoming

The Petroleum Association of Wyoming (PAW) would like to thank BLM for the opportunity to comment on the referenced document. PAW is Wyoming's largest and oldest oil and gas trade organization, the members of which account for over ninety percent of the natural gas and over seventy percent of the crude oil produced in the State.

PAW has the following comments regarding the Scoping Notice for the above referenced document:

Currently the Applicant is bound by the mitigation measures in the Resource Management Plan, along with existing terms, conditions, and lease stipulations. The mandatory mitigation in effect is more than adequate for this proposed exploratory project and additional concerns can be analyzed in the Environmental Assessment (EA). At this time, there is nothing present to indicate that an Environmental Impact Statement is necessary for the exploratory phase of the project.

Should a discovery be made through the exploratory phase and the Applicant desires to proceed with additional development, appropriate NEPA analysis would be conducted at that time and adequate mitigation measures would be applied. This project should not be delayed based on the concern that 'potential development' may occur. Proper analysis can and will be adequately addressed in the NEPA analysis required for full field development and at the site-specific phase of the project.

Socio-economic impacts to the Counties and State should be addressed in the EA. A section should be added to the environmental consequences chapter to describe "local economy" significance criteria. PAW recognizes that the social and economic opportunities generated from the project would benefit the residents of Wyoming and the participating counties by directly creating new jobs and producing additional revenues, particularly if further development is conducted after the exploratory phase.

Wyoming has the opportunity to provide much needed natural resources to markets throughout the nation and this exploratory proposal has the potential to assist in that effort. At the same time, industry recognizes the importance of protecting the environment and will work to adequately address those concerns during the appropriate level of NEPA analysis. In conclusion, PAW supports the proposal to explore and potentially develop a coal bed methane project on valid, existing oil and gas leases as described in this project.

Thank you for your comments. The proposal is appropriately mitigated. Socio-economic impacts have been considered in the EA. See Sections 3.13 and 4.12.

Michael Long, U.S. Fish and Wildlife Service

Thank you for the scoping notice for the Kennedy Coal Bed Methane pilot project in Sweetwater County, Wyoming. Kennedy Oil is proposing developing two pods, with a total of 20 wells, plus 2 water injection wells. Well spacing would be 160 acres. The analysis area for this project

contains 10,240 acres, with surface and mineral ownership by the Federal government and the State of Wyoming.

In accordance with section 7(c) of the Endangered Species Act of 1973, as amended (Act), my staff has determined that the following threatened or endangered species, or species proposed for listing under the Act, may be present in the project area.

Listed and Proposed Species

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
<i>Black-footed ferret</i> (<u><i>Mustela migripes</i></u>)	Endangered	Potential resident in prairie dog (<i>Cynomys sp.</i>) colonies.
<i>Bald eagle</i> (<u><i>Haliaeetus leucocephalus</i></u>)	Threatened	Nesting. Winter resident, Migrant
<i>Mountain Plover</i> (<u><i>Charadrius montanus</i></u>)	Proposed	Grasslands statewide
<i>Ute ladies'-tresses</i> (<u><i>Spiranthes diluvialis</i></u>)	Threatened	Seasonally moist soils and wet meadows of drainages below 7,000 feet elevation
<i>Whooping crane</i> (<u><i>Grus Americana</i></u>)	Experimental	Resident, migrant (Rocky Mtn. Pop. Only)

A disturbance-free buffer zone of 1 mile should be maintained around eagle nests and winter roost locations. Activity within 1 mile of these locations may disturb the eagles and result in "take." If a disturbance-free buffer zone of 1 mile is not practicable, then the activity should be conducted outside of the nesting season (Feb 15 -Aug 15) or winter roosting season (Dec 1 - April 15).

Black-footed ferrets may be affected if prairie dog colonies are impacted. If white-tail prairie dog (*Cynomys leucurus*) colonies or complexes greater than 200 acres will be disturbed, surveys for ferrets should be conducted even if only a portion of the colony or complex will be disturbed. If a field check indicates that prairie dog towns may be affected, you should contact this office for guidance on ferret surveys.

Mountain plover breeding habitats are known to include grasslands, mixed grasslands, mixed grassland areas and short-grass prairie, shrub-steppe, plains, alkali flats, agricultural lands, cultivated lands, sod farms, and prairie dog towns. Plovers may nest on sites where vegetation is sparse or absent, or near closely cropped areas, manure piles or rocky areas. Mountain plovers are rarely found near water and show a preference for previously disturbed areas or modified habitat. They may be found on heavily grazed pastures throughout their breeding range and may selectively nest in or near prairie dog towns.

The Service recommends surveys for mountain plovers in all suitable habitat as well as avoidance of nesting areas to minimize impact to plovers in a site planned for development. While the Service believes that plover surveys, avoidance of nesting and brood rearing areas,

and timing restrictions (avoidance of important areas during nesting) will lessen the chance of direct impacts to and mortality of individual mountain plovers in the area, these restrictions do nothing to mitigate indirect effects including changes in habitat suitability and habitat loss. Surveys are, however, a necessary starting point. In some cases, activities can be conducted between August 15 and March 15 to avoid affecting this species.

The Ute ladies'-tresses is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams. It occurs generally in alluvial substrates along riparian edges, gravel bars, old oxbows, and wet meadows at elevations from 4,200 to 7,000 feet. The orchid colonizes early successional riparian habitats such as point bars, sand bars, and low lying gravelly, sandy, or cobbly edges, persisting in those areas where the hydrology provides continual dampness in the root zone through the growing season. Ute ladies'-tresses seems generally intolerant of shade and is found primarily in open grass and forb-dominated sites where vegetation is relatively open and not dense or overgrown. The plants usually occur as small scattered groups. Ute ladies'-tresses orchid can only be reliably located and identified when it is flowering which typically occurs sometime during the period from mid-July through mid-September. Surveys are conducted by walking or otherwise closely scrutinizing areas of potential habitat looking for flowering stalks. Surveys conducted at other times of the year are not reliable and are therefore not acceptable to the Service for purposes of clearance under section 7 of the Act. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys.

The species identified by U.S. Fish and Wildlife Service have been considered in the EA. See Sections 3.8 and 4.7.

Colorado River Water Depletions

*Where projects may lead to depletions of water to the Colorado river system, formal consultation is required. Federal agency actions resulting in water depletions to the Colorado River System may affect endangered Bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), and Razorback sucker (*Xyrauchen texanus*) downstream of the Green and Colorado river systems.*

In general, depletions include evaporative losses and/or consumptive use of surface or groundwater within the affected basin, often characterized as diversions less return flows. Project elements that could be associated with depletions include, but are not limited to ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), pipelines, wells, diversion structures, and water treatment facilities. Any actions that may result in water-depletion should be identified. The document should also include an estimate of the amount and timing (by month) of average annual water depletion (both existing and new depletions), and describe methods of arriving at such estimates.

Platte River Depletions

Since 1978, the U.S. Fish and Wildlife Service (Service) has consistently taken the position in its section 7 consultations that Federal agency actions resulting in water depletions to the Platte

River system may affect the endangered whooping crane (Grus Americana), endangered interior least tern (Sterna antillarum), threatened piping plover (Charadrius melodus), and endangered pallid sturgeon (Scaphirhynchus albus), the threatened bald eagle (Haliaeetus leucocephalus), the endangered eskimo curlew (Nunienius borealis), and threatened western prairie fringed orchid (Platanthera praeclara).

In general, depletions include evaporative losses and/or consumptive use, often characterized as diversions from the Platte River or its tributaries less return flows. Project elements that could be associated with depletions include, but are not limited to ponds (detention/recreation/irrigation storage/stock watering), lakes (recreation/irrigation storage/municipal storage/power generation), reservoirs (recreation/irrigation storage/municipal storage/power generation), created or enhanced wetlands, pipelines, wells, diversion structures, and water treatment facilities.

Any actions that may result in water depletions to the Platte River system should be identified. The document should also include an estimate of the amount and timing (by month) of average annual water depletion (both existing and new depletions), and describe methods of arriving at such estimates.

Water depletions have been considered in the EA. See sections 3.8. and 4.7

Consultation

Section 7(c) of the Act requires that a biological assessment be prepared for any Federal action that is a major construction activity to determine the effects of the proposed action on listed and proposed species. If a biological assessment is not required (i.e., all other actions), the lead Federal agency is responsible for review of proposed activities to determine whether listed species will be affected. We would appreciate the opportunity to review any such determination document. If it is determined that the proposed activities may affect a listed species, you should contact this office to discuss consultation requirements. If it is determined that any Federal agency program or project "is likely to adversely affect" any listed species, formal consultation should be initiated with this office. Alternatively, informal consultation can be continued so we can work together to determine how the project could be modified to reduce impacts to listed species to the "not likely to adversely affect" threshold. If it is concluded that the project "is not likely to adversely affect" listed species, we should be asked to review the assessment and concur with the determination of not likely to adversely affect.

Section 7(d) of the Act requires that the Federal agency and permit or license applicant shall not make any irreversible or irretrievable commitment of resources which would preclude the formulation of reasonable and prudent alternative until consultation on listed species is completed.

Regarding species proposed for listing, Federal agencies must determine whether any of their proposed activities are likely to jeopardize the continued existence of the species. If jeopardy is likely, that agency must confer with the Fish and Wildlife Service.

We will work with the lead Federal agency in the section 7 consultation process. The analysis of project impacts must assess direct impacts of the project, as well as those impacts that are interrelated to or interdependent with the proposed action. Impacts to listed species on non-Federal lands must be evaluated along with such impacts on Federal lands. Any measures that are ultimately required to avoid or reduce impacts to listed species will apply to Federal as well as non-Federal lands.

BLM has prepared and submitted a consultation document to your agency.

Migratory Birds

Please recognize that consultation on listed species may not remove your obligation to protect the many species of migratory birds, including eagles and other raptors protected under the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA).

The MBTA, 16 U.S.C. 703, enacted in 1918, prohibits the taking of any migratory birds, their parts, Nests, or eggs *except as permitted by regulations and does not require intent to be proven.* Section 703 of the Act states, “*Unless and except as permitted by regulations...it shall be unlawful at any time, by any means or in any manner to...take, capture, kill, attempt to take, capture, or kill, or possess...any migratory bird, any part, nest, or eggs of any such bird...*” The BGEPA, 16 U.S.C. 668, prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

Work that could lead to the take of a migratory bird including an eagle, their young, eggs, or nests (for example, if you are going to erect new well sites, roads, or power lines in the vicinity of a nest) should be coordinated with our office before any actions are taken. Removal or destruction of such nests, or causing abandonment of; a nest could constitute violation of one or both of the above statutes. Removal of any active migratory bird nest or nest tree is prohibited. Permits for nest manipulation, including removal or relocation may, under certain circumstances, be issued for inactive nests only. For golden eagles, inactive nest permits are limited to activities involving resource extraction, and human health and safety. Mitigation, as determined by the local U.S Fish and Wildlife Service field office, may be required for loss of these nests. No permits will be issued for an active nest of any migratory bird species, unless removal of an active nest is necessary for reasons of human health and safety. Therefore, if nesting migratory birds are present on, or near the project area, timing is it significant consideration and needs to be addressed in project planning.

Your comment has been considered in the EA. See Sections 3.8 and 4.7.

Other Fish and Wildlife Resources

Sage grouse are declining throughout their range, and concern for this species has led us to believe we will receive a listing petition for listing sage grouse pursuant to the Act in the near

future. The cause of sage grouse decline is not known and may be a combination of several factors which affect habitat and reproductive abilities. However, anecdotal information, from several sources in Wyoming, suggests that sage grouse populations are negatively affected by the activities associated with oil and gas development, even when mitigative measures are implemented. We encourage the Bureau to take all necessary measures allowable to protect sage grouse in the project area to ensure this project does not exacerbate factors contributing to sage grouse decline and thus give support to a listing petition.

No oil or gas activity is exists in the project area. Your comments have been considered in the EA. See section 2.1 and 4.7 for mitigation to protect the Greater sage-grouse.

Coalbed methane development poses a serious threat to wildlife habitat. Habitat fragmentation, disruption of seasonal migration routes and disruption of breeding activity is caused by access roads, drill pads, pipelines, power lines, transmission stations, compressors, and increased traffic that accompany coalbed methane development. State and Federal agencies have estimated that these activities associated with drilling and operating each coalbed methane well disturbs 3 to 4 acres of land and results in the construction of 1/4 to 1/3 of a mile of new roads (Frykman 2001). With predictions of up to 70,000 new wells in Wyoming over the next several years, coalbed methane development could disturb hundreds of thousands of acres of irreplaceable wildlife habitat.

Measures to protect wildlife have been identified in the EA (see sections 2.1.9.8 and 4.7).

Air pollution is a serious environmental concern associated with CBM development. Generators supply electricity to pump methane and provide power to compressor stations that compress methane prior to transport to market. Toxic emissions from generators include sulfur dioxide, nitrous oxide, carbon monoxide, formaldehyde (Frykman 2001). Dust generated from increased traffic on unpaved roads and noise produced by compressors may pose serious threats to the health of wildlife.

Generators used for pumping produced water will be powered by natural gas. No compressor stations are proposed; thus, no emissions associated with compression will occur.

Coalbed methane well operators should cluster pipelines, access roads and compressor stations and bury powerlines within existing rights-of-way as much as possible. Because gas from wells is normally measured at the well site, sharing flow lines and compressor stations among operators is logistically feasible and would reduce costs of operation (Frykman 2001). Generators should be powered by natural gas to reduce toxic emissions, and compressors should be fitted with high quality mufflers to keep noise to a minimum. The above measures would reduce dramatically habitat fragmentation and the acreage of land disturbed, reduce health risks to wildlife associated with dust and toxic compressor station emissions, and reduce noise pollution associated with compressor stations.

Your comments have been considered in the EA. See Section 2.1.

Fish, wildlife and plant inventories should be conducted in each CBM field prior to development. Sensitive species and their habitats should be identified, and adequate buffer zones established to protect habitat from degradation associated with development and operating activities over the years. Development should be phased in over time in any given area, reducing intensity of impacts to fish and wildlife populations and their habitat. A land management plan should be implemented upon CBM development to control noxious weeds on all disturbed lands. Areas disturbed during CBM development should be reclaimed with native soils and restored with native plants immediately after cessation of methane production.

This is an exploratory pilot project, not a full field development proposal. Thus, phasing of development is inappropriate. Appropriate measures have been adopted. See EA, sections 2.1, 4.5, and 4.7.

In order for the Service to address potential impacts to fish and wildlife resources resulting from hydrogeological processes affected by coalbed methane development, a stratigraphic profile of the proposed well field should be provided containing information on well depth and major geological formations that would be penetrated during drilling. For example, a well drilled into the Rawlins Uplift, Great Divide-Washakie Basin, Wyoming, may involve drilling to a depth of 10,000 feet below sea level. Major geological layers penetrated may include the "Upper Cretaceous (Kuu) including the Lewis Shale layer on top of the Mesa Verde layer which is composed of the Almond, Ericson, Rock Springs, and Blair formations. Any other major geological features associated with the well field should be identified- for example, major faults or aquifer confining layers.

The purpose of the Kennedy Oil's CBM Exploratory Pilot project is to gather and evaluate data to determine the feasibility of development. Reliable information on reservoir heterogeneity, coal thickness, coal gas content, gas chemistry, recovery efficiency, coal permeability, water quality and quantity must be acquired.

Data should be provided concerning the potential water quality of the coalbed methane produced water. Composition of major geological layers penetrated also should be provided. For example, limestone, dolomite, gypsum, calcium sulfate, basalt, unconsolidated gravels, and fractured plutonic deposits may comprise specific geological layers mentioned above. This information is important because water moves through different earth material according to the properties of porosity, intrinsic permeability, and hydraulic conductivity. For instance, sedimentary rocks of chemical or biochemical origin (e.g., limestone, dolomite, gypsum) are chemical precipitates that redissolve relatively easily (Fetter 1994), enabling produced water to migrate through them readily and potentially contaminate other aquifers. Aquifers that are contaminated may provide the water source of important fish and wildlife habitat (e.g., riparian areas or wetlands), and may be connected hydrologically to major river basins.

See response above.

Wetlands

The Service recommends measures be taken to avoid any wetland losses in accordance with Section 404 of the Clean Water Act, Executive Order 11990 (wetland protection) and Executive Order 11988 (floodplain management) as well as the goal of “no net loss of wetlands.” If wetlands may be destroyed or degraded by the proposed action, those (wetlands) in the project area should be inventoried and fully described in terms of functions and values. Acreage of wetlands, by type, should be disclosed and specific actions outlined to minimize impacts and compensate for all unavoidable wetland impacts.

See comment letter from U.S. Army Corps of Engineers. No wetlands or riparian areas are affected by the proposal.

These preliminary scoping comments are made pursuant to the National Environmental Policy Act, the Endangered Species Act and Fish and Wildlife Coordination Act. Please keep this office informed of any developments or decisions concerning this project.

The BLM has coordinated with the U.S. Fish and Wildlife Service.

