

Appendix F
Public Comments and Responses
High Plains District Portion of the August 2016 Oil and Gas Lease Sale EA WY-070-EA16-66

| # | Commenter | Comment | Response |
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| | BLM High Plains District (HPD) | | The 30-day public comment period for Version 1 of the High Plains District portion of the August 2016 Competitive Oil and Gas Lease Sale EA (EA WY-070-EA16-66) began January 19, 2016, and closed February 18, 2016. The 30-day public comment period is established in Washington Office IM 2010-117 Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews. Comments received after the close of the public comment period will be handled in accordance with BLM’s NEPA Handbook (H-1790-1), which states that the Authorized Officer “is not required to respond to comments that are not substantive or comments that are received after the close of the comment period, but you may choose to reply.” |
| - | Wyoming Outdoor Council (WOC) | Comments were submitted to only the Wind River/Bighorn Basin District (WRBBD) not the High Plains District (HPD), and only addressed the WRBBD portion of the August 2106 Competitive Oil and Gas Lease Sale EA. | Because those comments were not directed toward the HPD EA, no response is provided herein. Comments and responses in the WRBBD EA may be referenced to the extent they relate to the HPD portion of the August 2016 Competitive Oil and Gas Lease Sale EA. No changes to the HPD EA were deemed necessary based on those comments. |
| - | WildEarth Guardians (WG) & Rocky Mountain Wild (RMW) | Comments were submitted jointly to only the WRBBD not the HPD, and only addressed the WRBBD portion of the August 2106 Competitive Oil and Gas Lease Sale EA. | Refer to the above comment. |
| - | WildEarth Guardians | Comments were submitted to only the WRBBD not the HPD, though the letter refers to both the WRBBD and HPD EAs. | Refer to the above comment. |
| 1 | Wyoming Game and Fish Department (WGFD) | The staff of the Wyoming Game and Fish Department has reviewed the Environmental Assessment for August 2016 Lease Sale Parcels. We offer the following comments for your consideration. We support Alternative B – Proposed Action. However, we have the following concerns with these parcels: Parcel WY-1608-009 should have a 0.25 NSO stipulation. Parcel WY-1608-0023 has a small portion in Core. | Parcel WY-1608-009 will be subject to stipulation NFO2 (see EA Table 4.2 and associated text), which adds an NSO stipulation “ <i>within an 0.25-mile radius of the perimeter of occupied Greater sage-grouse leks outside designated PHMAs (Core and Connectivity).</i> ” Parcel WY-1608-023 was reviewed by BLM staff specifically in relation to the small area of PHMA (core), approximately 3.5 acres as mapped, that overlaps the parcel. We feel the small size of the overlap is a GIS mapping error or anomaly, and does not represent a substantive area of PHMA habitat. |
| 2 | Comanche | In response to your request, the above reference project has been reviewed by staff of | No response needed. |

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| | Nation | this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of “No Properties” have been identified. | |
| 3 | Ponca Tribe of Nebraska | At this time I do not have any comment on this issue. However I would like to stay informed of any changes in the future in this area. | No response needed. |
| 4 | Center for Biological Diversity (CBD) | <p>The Center for Biological Diversity writes to submit the following comments on the preliminary environmental assessment (“PEA”) of High Plains District Oil and Gas Lease Parcels for the August 2016 Sale.</p> <p>The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to reduce greenhouse gas emissions to protect biological diversity, our environment, and public health. The Center has over 991,000 members and activists, including those living in Wyoming who have visited these public lands in the High Plains District (“HPD”) planning areas for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the proposed oil and gas leasing.</p> | No response needed. |
| 8 | CBD | <p>The Bureau of Land Management (“BLM”) is asking the public to review and comment on the PEA for the oil and gas lease sale of 39 parcels containing 22,495 Federal mineral acres and 2,271 Federal surface acres located within the HPD that are being offered for the August 2016 Competitive Oil and Gas Lease Sale. The EA does not satisfy the requirements of the National Environmental Policy Act (“NEPA”), and its proposed lease sale violates the Mineral Leasing Act (“MLA”) and the Federal Lands Policy and Management Act (“FLPMA”). BLM should produce a full Environmental Impact Statement (“EIS”) for the lease sale, and if it decides to move forward with the sale, it must require controls on natural gas emissions and reinitiate consultation with the U.S. Fish and Wildlife Service (“USFWS”) as required by the Endangered Species Act (“ESA”).</p> | <p>If the analysis in an EA shows the action would not have a significant effect, a “Finding of No Significant Impact” (FONSI) documents that there is no need for an EIS (40 CFR 1508.13). The HPD Environmental Impact Statements (EIS) and Resource Management Plans (RMP) for the Casper and Newcastle field offices have already evaluated potentially significant impacts arising from the BLM’s land use planning decisions, including lands available or unavailable for oil and gas leasing. Therefore, the BLM anticipates a “finding of no new significant impacts” (see 43 CFR § 46.140(c)).</p> <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>The Mineral Leasing Act of 1920, as amended [30 U.S.C. § 181 et seq.], gives the BLM responsibility for oil and gas leasing on about 564 million acres of BLM, national forest, and other federal lands, as well as State and private surface lands where mineral rights have been retained by the federal government. The BLM works to ensure that mineral resources are developed in an environmentally responsible manner.</p> |

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| | | | <p>The Casper and Newcastle RMPs identified the nominated lease sale parcels as available for leasing. The RMPs identify stipulations for application to the lease sale parcels.</p> |
| 9 | CBD | <p>Moreover, we are deeply concerned that new fossil fuel leasing within the HPD would contribute to worsening the climate crisis. To preserve any chance of averting catastrophic climate disruption, the vast majority of all proven fossil fuels must be kept in the ground. Opening up new areas to oil and gas exploration and unlocking new sources of greenhouse gas pollution would only fuel greater warming and contravenes BLM’s mandate to manage the public lands “without permanent impairment of the productivity of the land and the quality of the environment.” BLM should end all new leasing in the HPD and all other areas that it manages to limit the climate change effects of its actions; at a minimum, it should defer any such leasing until such time as it can conduct a comprehensive review of the climate consequences of its leasing activities, at the national and/or regional scale.</p> | <p>Beyond the scope of this document. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality or climate change will be analyzed through additional site-specific NEPA analysis, and conformance with state and Federal air quality standards and regulations will be evaluated. As new information is gathered it will be incorporated into BLM decisions, and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p> |
| 10 | CBD | <p>Exploration and development likely involves the highly controversial and dangerous extraction methods of well-stimulation techniques such as hydraulic fracturing and horizontal drilling (hereinafter collectively referred to as “fracking”). As discussed further below these practices deplete enormous water resources, risk toxic spills, contaminate air, and fragment and degrade habitat for species. The extraction of fossil fuels with these dangerous techniques further undermines the protection of our public lands. Full compliance with the spirit and objectives of NEPA and other federal environmental laws and regulations requires BLM to avoid these dangers altogether. Therefore BLM should also ban new hydraulic fracturing and other unconventional well stimulation activities in the planning area.</p> <p>At the very least, BLM must fully address these issues in an Environmental Impact Statement (“EIS”) and in an amended Resource Management Plan (“RMP”). The current Buffalo, Casper, and Newcastle Field Offices’ RMPs, upon which the EA relies, do not analyze the environmental impacts that often result from the relatively methods of fracking, or the increased seismic risks from such extraction methods. Nor does it include any analyses of the impacts that potential greenhouse gas (“GHG”) emissions of federal fossil fuels (leased and unleased) have on the environment. The PEA’s meager analysis of the harmful impacts from hydraulic fracturing and other unconventional oil and gas extraction methods is severely deficient for purposes of the intended function of an Environmental Assessment – determining whether or not a proposed action may have significant effects on the human environment. The PEA’s Appendix E, entitled “Hydraulic Fracturing White Paper,” is nothing more than a vague, rosy and highly general overview of the general range of practices involved in hydraulic fracturing. The White Paper does note, on a state-wide level, some of the significant potential implications of the use of hydraulic fracturing in Wyoming – substantial additional water demands on a fully-appropriate water supply, multiple pathways for contamination of ground and surface water, earthquake-inducing effects, and potential for spills. General information about hydraulic fracturing, however, fails to fill the gap in the PEA’s analysis. The White Paper contains no discussion whatsoever of the specific geological</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause hydraulic fracturing and/or horizontal drilling to occur.</p> <p>Issuance of an oil and gas lease does not authorize operations on the lease. The possibility or nature of lease development operations cannot be reasonably determined at the leasing stage, nor can impacts realistically be analyzed in more detail at this time. If a lease is issued and development proposed, additional permits will be submitted to the BLM and analyzed in a site-specific NEPA document, which will address resource concerns.</p> <p>The State of Wyoming regulates hydraulic fracturing under Wyoming Oil and Gas Regulation, Chapter 3, Section 45.</p> |

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| | | <p>formations, surface and ground water resources, seismic potential, or human, animal, and plant health and safety concerns present in the area to be leased. Therefore, BLM cannot rely on Appendix E as a substitute for the analysis missing from the PEA. Rather than providing site-specific analyses of the foreseeable impacts that this sale would have (on air, climate change, soil, water, sensitive species, public health and safety), the PEA attempts to defer the required analysis to the APD stage, which is improper. Another reason the PEA fails to comply with federal regulations is that the agency has arbitrarily and capriciously restricted, in its analysis, the amount of activity that could result from the lease sale. BLM must fully analyze the public health, environmental justice, and industrialization impacts of unconventional fossil fuel extraction and especially hydraulic fracturing across the entire HPD planning area.</p> <p>For the reasons set forth in this letter, we insist that BLM: (1) cease all new leasing of fossil fuels in the planning area, including oil and natural gas; or, at a minimum (2) defer the proposed August 2016 Sale pending a programmatic review of all U.S. fossil fuel leasing which must consider “keep it in the ground” and “no fracking” plan amendments (“no-leasing-no-fracking”). Should BLM proceed with the sale, BLM must: (1) initiate formal consultation with the Fish and Wildlife Service, as required by the Endangered Species Act (“ESA”); and (2) prepare a full EIS for the proposed lease sale in consideration of significant unexamined impacts from the consequences of leasing. Any such EIS must consider a full range of alternatives, including an alternative that bans new hydraulic fracturing and other unconventional well stimulation activities, and require strict controls on natural gas emissions and leakage.</p> <p>I. The Dangers of Hydraulic Fracturing and Horizontal Drilling</p> <p>The proposed leasing action is part of a dramatic recent increase in oil and gas leasing in the areas at issue, and reflects increased industry interest in developing Wyoming’s fossil fuel resources. The entire basis for this surge of interest is the possibility that hydraulic fracturing and other advanced recovery techniques will allow the profitable exploitation of geologic formations previously perceived as insufficiently valuable for development. Hydraulic fracturing brings with it all of the harms to water quality, air quality, the climate, species, and communities associated with traditional oil and gas development, but also brings increased risks in many areas. An adequate analysis of the consequences of this practice, prior to irrevocable consequences, is therefore required at the leasing stage.</p> <p>The PEA cannot ignore the demonstrated likelihood of use of hydraulic fracturing and/or other unconventional recovery techniques within the HPD. Indeed the White Paper states, “HF has gained interest recently as hydrocarbons previously trapped in low permeability tight sand and shale formations are now technically and economically recoverable. As a result, oil and gas production has increased significantly in the United States. The state of Wyoming classifies all gas production zones as Class 5 groundwater zones; this means these zones can be highly impacted by oil and gas activities and are exempt from regulation under the Clean Water Act.” Elements of these technologies</p> | |

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| | | <p>have been used individually for decades. However, the combination of practices employed by industry recently is new: “Modern formation stimulation practices have become more complex and the process has developed into a sophisticated, engineered process in which production companies strive to design a hydraulic fracturing treatment to emplace fracture networks in specific areas.”</p> <p>Hydraulic fracturing, a dangerous practice in which operators inject toxic fluid underground under extreme pressure to release oil and gas, has greatly increased industry interest in developing tightly held oil and gas deposits such as those in the proposed lease area. The first aspect of this technique is the hydraulic fracturing of the rock. When the rock is fractured, the resulting cracks in the rock serve as passages through which gas and liquids can flow, increasing the permeability of the fractured area. To fracture the rock, the well operator injects hydraulic fracturing fluid at tremendous pressure. The composition of fracturing fluid has changed over time. Halliburton developed the practice of injecting fluids into wells under high pressure in the late 1940s; however, companies now use permutations of “slick-water” fracturing fluid developed in the mid-1990s. The main ingredient in modern fracturing fluid (or “frack fluid”) is generally water, although liquefied petroleum has also been used as a base fluid for modern fracking. The second ingredient is a “proppant,” typically sand, that becomes wedged in the fractures and holds them open so that passages remain after pressure is relieved. In addition to the base fluid and proppant, a mixture of chemicals are used, for purposes such as increasing the viscosity of the fluid, keeping proppants suspended, impeding bacterial growth or mineral deposition.</p> <p>Frack fluid is hazardous to human health, although industry’s resistance to disclosing the full list of ingredients formulation of frack fluid makes it difficult for the public to know exactly how dangerous. A congressional report sampling incomplete industry self-reports found that “[t]he oil and gas service companies used hydraulic fracturing products containing 29 chemicals that are (1) known or possible human carcinogens, (2) regulated under the Safe Drinking Water Act for their risks to human health, or (3) listed as hazardous air pollutants under the Clean Air Act.” Recently published scientific papers also describe the harmfulness of the chemicals often in fracking fluid. One study reviewed a list of 944 fracking fluid products containing 632 chemicals, 353 of which could be identified with Chemical Abstract Service numbers. The study concluded that more than 75 percent of the chemicals could affect the skin, eyes, and other sensory organs, and the respiratory and gastrointestinal systems; approximately 40 to 50 percent could affect the brain/nervous system, immune and cardiovascular systems, and the kidneys; 37 percent could affect the endocrine system; and 25 percent could cause cancer and mutations.</p> <p>The impacts associated with the fracking-induced oil and gas development boom has caused some jurisdictions to place a moratorium or ban on fracking. For instance, in 2011 France became the first country to ban the practice. In May, Vermont became the first state to ban fracking. Vermont’s governor called the ban “a big deal” and stated that the bill “will ensure that we do not inject chemicals into groundwater in a desperate</p> | |

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| | | <p>pursuit for energy.” New York State halted fracking within its borders in 2008, continued the moratorium in 2014 and banned the practice in 2015. The state’s seven-year review concluded that fracking posed risks to land, water, natural resources and public health. Also, New Jersey’s legislature recently passed a bill that would prevent fracking waste, like toxic wastewater and drill cuttings, from entering its borders, and Pennsylvania, ground zero for the fracking debate, has banned “natural-gas exploration across a swath of suburban Philadelphia” Numerous cities and communities, like Buffalo, Pittsburgh, Raleigh, Woodstock, and Morgantown have banned fracking.</p> <p>Separate from hydraulic fracturing, the second technological development underlying the recent shale boom is the use of horizontal drilling. Shale oil and shale gas formations are typically located far below the surface, and as such, the cost of drilling a vertical well to access the layer is high. The shale formation itself is typically a thin layer; however, such that a vertical well only provides access to a small volume of shale—the cylinder of permeability surrounding the well bore. Although hydraulic fracturing increases the radius of this cylinder of shale, this effect is often itself insufficient to allow profitable extraction of shale resources. Horizontal drilling solves this economic problem: by drilling sideways along the shale formation once it is reached, a company can extract resources from a much higher volume of shale for the same amount of drilling through the overburden, drastically increasing the fraction of total well length that passes through producing zones. The practice of combining horizontal drilling with hydraulic fracturing was developed in the early 1990s.</p> <p>A third technological development is the use of “multi-stage” fracking. In the 1990s industry began drilling longer and longer horizontal well segments. The difficulty of hydraulic fracturing increases with the length of the well bore to be fractured, however, both because longer well segments are more likely to pass through varied conditions in the rock and because it becomes difficult to create the high pressures required in a larger volume. In 2002 industry began to address these problems by employing multi-stage fracking. In multi-stage fracking, the operator treats only part of the wellbore at a time, typically 300 to 500 feet. Each stage “may require 300,000 to 600,000 gallons of water,” and consequently, a frack job that is two or more stages can contaminate and pump into the ground over a million gallons of water.</p> <p>Notwithstanding the grave impacts that these practices have on the environment, this new combination of multi-stage slickwater hydraulic fracturing and horizontal drilling has made it possible to profitably extract oil and gas from formations that only a few years ago were generally viewed as uneconomical to develop. The effect of hydraulic fracturing on the oil and gas markets has been tremendous, with many reports documenting the boom in domestic energy production. A recent congressional report notes that “[a]s a result of hydraulic fracturing and advances in horizontal drilling technology, natural gas production in 2010 reached the highest level in decades.” A 2011 U.S. EIA report notes how recently these changes have occurred, stating that “only in the past 5 years has shale gas been recognized as a ‘game changer’ for the U.S. natural gas market.” With respect to oil, the EIA notes that oil production has been increasing, with</p> | |

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| | | <p>the production of shale oil resources pushing levels even higher over the next decade:</p> <p>Domestic crude oil production has increased over the past few years, reversing a decline that began in 1986. U.S. crude oil production increased from 5.0 million barrels per day in 2008 to 5.5 million barrels per day in 2010. Over the next 10 years, continued development of tight oil, in combination with the ongoing development of offshore resources in the Gulf of Mexico, pushes domestic crude oil production higher.</p> <p>Thus, it is evident that fracking, including fracking with the most recent techniques that have been associated with serious adverse impacts in other areas of the country, is poised to expand; it is further evident that the oil and gas industry is still exploring new locations to develop, and the nation has not yet seen the full extent of fracking’s impact on oil and gas development and production.</p> <p>In large part through the use of fracking, the oil and gas sector is now producing huge amounts of oil and gas throughout the United States, rapidly transforming the domestic energy outlook. Fracking is occurring in the absence of any adequate federal or state oversight. The current informational and regulatory void on the state level makes it even more critical that the BLM perform its legal obligations to review, analyze, disclose, and avoid and mitigate the impacts of its oil and gas leasing decisions.</p> | |
| 11 | CBD | <p>II. BLM Must Cancel the Lease Sale and Halt All New Leasing Until It Properly Considers the Climate Change Effects of New Leasing and Fracking</p> <p>Climate change is a problem of global proportions resulting from the cumulative greenhouse gas emissions of countless individual sources, which cannot simply be addressed on a project-by-project basis and for making such land management decisions. A comprehensive look at the impacts of fossil fuel extraction, and especially fracking, across all of the planning areas affected by the leases in updated RMPs is absolutely necessary. BLM has never thoroughly considered the cumulative climate change impacts of all potential fossil fuel extraction and fracking (1) within each of the Wyoming planning areas, (2) across all of these states, and (3) across all public lands. Proceeding with new leasing proposals ad hoc in the absence of a comprehensive plan that addresses climate change and fracking is premature and risks irreversible damage before the agency and public have had the opportunity to weigh the full costs of oil and gas and other fossil fuel extraction and consider necessary limits on such activities. Therefore BLM must cease all new leasing at least until the issue is adequately analyzed in a programmatic review of all U.S. fossil fuel leasing, or at least within amended RMPs.</p> <p>1) BLM Must Limit Greenhouse Gas Emissions By Keeping Federal Fossil Fuels In the Ground</p> <p>Expansion of fossil fuel production will substantially increase the volume of greenhouse gases emitted into the atmosphere and jeopardize the environment and the health and well being of future generations. BLM’s mandate to ensure “harmonious and coordinated management of the various resources without permanent impairment of the productivity</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality or climate change will be analyzed through additional site-specific NEPA analysis, and conformance with state and Federal air quality standards and regulations will be evaluated. As new information is gathered it will be incorporated into BLM decisions, and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p> <p>A discussion of Air Quality and Climate Change are addressed in the EA in Section 3.3.1.</p> |

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| | | <p>of the land and the quality of the environment” requires BLM to limit the climate change effects of its actions. Keeping all unleased fossil fuels in the ground and banning fracking and other unconventional well stimulation methods would lock away millions of tons of greenhouse gas pollution and limit the destructive effects of these practices.</p> <p>A ban on new fossil fuel leasing and fracking is necessary to meet the U.S.’s greenhouse gas reduction commitments. On December 12, 2015, 197 nation-state and supra-national organization parties meeting in Paris at the 2015 United Nations Framework Convention on Climate Change Conference of the Parties consented to an agreement (Paris Agreement) committing its parties to take action so as to avoid dangerous climate change. As the Paris Agreement opens for signature in April 2016 and the United States is expected to sign the treaty as a legally binding instrument through executive agreement, the Paris Agreement commits the United States to critical goals—both binding and aspirational—that mandate bold action on the United States’ domestic policy to rapidly reduce greenhouse gas emissions.</p> <p>The United States and other parties to the Paris Agreement recognized “the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge.” The Paris Agreement articulates the practical steps necessary to obtain its goals: parties including the United States have to “reach global peaking of greenhouse gas emissions as soon as possible . . . and to undertake rapid reductions thereafter in accordance with best available science,” imperatively commanding that developed countries specifically “should continue taking the lead by undertaking economy-wide absolute emission reduction targets” and that such actions reflect the “highest possible ambition.”</p> <p>The Paris Agreement codifies the international consensus that climate change is an “urgent threat” of global concern, and commits all signatories to achieving a set of global goals. Importantly, the Paris Agreement commits all signatories to an articulated target to hold the long-term global average temperature “to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” (emphasis added).</p> <p>In light of the severe threats posed by even limited global warming, the Paris Agreement established the international goal of limiting global warming to 1.5°C above pre-industrial levels in order to “prevent dangerous anthropogenic interference with the climate system,” as set forth in the UNFCCC, a treaty which the United States has ratified and to which it is bound. The Paris consensus on a 1.5°C warming goal reflects the findings of the IPCC and numerous scientific studies that indicate that 2°C warming would exceed thresholds for severe, extremely dangerous, and potentially irreversible impacts. Those impacts include increased global food and water insecurity, the inundation of coastal regions and small island nations by sea level rise and increasing storm surge, complete loss of Arctic summer sea ice, irreversible melting of the Greenland ice sheet, increased extinction risk for at least 20-30% of species on Earth, dieback of the Amazon rainforest, and “rapid and terminal” declines of coral reefs</p> | |

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| | | <p>worldwide. As scientists noted, the impacts associated with 2°C temperature rise have been “revised upwards, sufficiently so that 2°C now more appropriately represents the threshold between ‘dangerous’ and ‘extremely dangerous’ climate change.”</p> <p>Consequently, a target of 1.5 °C or less temperature rise is now seen as essential to avoid dangerous climate change and has largely supplanted the 2°C target that had been the focus of most climate literature until recently.</p> <p>Immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming below a 1.5° or 2°C rise above pre-industrial levels. Put simply, there is only a finite amount of CO2 that can be released into the atmosphere without rendering the goal of meeting the 1.5°C target virtually impossible. A slightly larger amount could be burned before meeting a 2°C became an impossibility. Globally, fossil fuel reserves, if all were extracted and burned, would release enough CO2 to exceed this limit several times over.</p> <p>The question of what amount of fossil fuels can be extracted and burned without negating a realistic chance of meeting a 1.5 or 2°C target is relatively easy to answer, even if the answer is framed in probabilities and ranges. The IPCC Fifth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of remaining carbon that can be burned while maintain some probability of staying below a given temperature target. According to the IPCC, total cumulative anthropogenic emissions of CO2 must remain below about 1,000 gigatonnes (GtCO2) from 2011 onward for a 66% probability of limiting warming to 2°C above pre-industrial levels. Given more than 100 GtCO2 have been emitted since 2011, the remaining portion of the budget under this scenario is well below 900 GtCO2. To have an 80% probability of staying below the 2°C target, the budget from 2000 is 890 GtCO2, with less than 430 GtCO2 remaining.</p> <p>To have even a 50% probability of achieving the Paris Agreement goal of limiting warming to 1.5°C above pre-industrial levels equates to a carbon budget of 550-600 GtCO2 from 2011 onward, of which more than 100 GtCO2 has already been emitted. To achieve a 66% probability of limiting warming to 1.5°C requires adherence to a more stringent carbon budget of only 400 GtCO2 from 2011 onward, 54 of which less than 300 GtCO2 remained at the start of 2015. An 80% probability budget for 1.5°C would have far less than 300 GtCO2 remaining. Given that global CO2 emissions in 2014 alone totaled 36 GtCO2, humanity is rapidly consuming the remaining burnable carbon budget needed to have even a 50/50 chance of meeting the 1.5°C temperature goal.</p> <p>According to a recent report by EcoShift Consulting commissioned by the Center and Friends of the Earth, unleased federal fossil fuels represent a significant source of potential greenhouse gas emissions:</p> <p><input type="checkbox"/> Potential GHG emissions of federal fossil fuels (leased and unleased) if developed would release up to 492 gigatons (Gt) (one gigaton equals 1 billion tons) of carbon dioxide equivalent pollution (CO2e); representing 46 percent to 50 percent of potential</p> | |

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| | | <p>emissions from all remaining U.S. fossil fuels.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Of that amount, up to 450 Gt CO₂e have not yet been leased to private industry for extraction; <input type="checkbox"/> Releasing those 450 Gt CO₂e (the equivalent annual pollution of more than 118,000 coal-fired power plants) would be greater than any proposed U.S. share of global carbon limits that would keep emissions below scientifically advised levels. <p>Fracking has also opened up vast reserves that otherwise would not be available, increasing the potential greenhouse gas emissions that can be released into the atmosphere. BLM must consider a ban on this dangerous practice and a ban on new leasing to prevent the worst effects of climate change.</p> <p>2) BLM Must Consider A Ban on New Oil and Gas Leasing and Fracking in a Programmatic Review and Halt All New Leasing and Fracking in the Meantime</p> <p>Development of unleased oil and gas resources will fuel climate disruption and undercut the needed transition to a clean energy economy. As BLM has not yet had a chance to consider no leasing and no-fracking alternatives as part of any of its RMP planning processes or a comprehensive review of its federal oil and gas leasing program, BLM should suspend new leasing until it properly considers this alternative in updated RMPs or a programmatic EIS for the entire leasing program. BLM would be remiss to continue leasing when it has never stepped back and taken a hard look at this problem at the programmatic scale. Before allowing more oil and gas extraction in the planning area, BLM must: (1) comprehensively analyze the total greenhouse gas emissions which result from past, present, and potential future fossil fuel leasing and all other activities across all BLM lands and within the various planning areas at issue here, (2) consider their cumulative significance in the context of global climate change, carbon budgets, and other greenhouse gas pollution sources outside BLM lands and the planning area, and (3) formulate measures that avoid or limit their climate change effects. By continuing leasing and allowing new fracking in the absence of any overall plan addressing climate change BLM is effectively burying its head in the sand.</p> <p>A programmatic review and moratorium on new leasing would be consistent with the Secretary of Interior’s recent order to conduct a comprehensive, programmatic EIS (PEIS) on its coal leasing program, in light of the need to take into account the program’s impacts on climate change, among other issues, and “the lack of any recent analysis of the Federal coal program as a whole.” See Secretary of Interior, Order No. 3338, § 4 (Jan. 15, 2016). Specifically, the Secretary directed that the PEIS “should examine how best to assess the climate impacts of continued Federal coal production and combustion and how to address those impacts in the management of the program to meet both the Nation’s energy needs and its climate goals, as well as how best to protect the public lands from climate change impacts.” Id. § 4(c).</p> | |
| 12 | CBD | The Secretary also ordered a moratorium on new coal leasing while such a review is | The preparation of this leasing EA was done in compliance with |

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| | | <p>being conducted. The Secretary reasoned:</p> <p>Lease sales and lease modifications result in lease terms of 20 years and for so long thereafter as coal is produced in commercial quantities. Continuing to conduct lease sales or approve lease modifications during this programmatic review risks locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal. This risk is why, during the previous two programmatic reviews, the Department halted most lease sales with limited exceptions.... Considering these factors and given the extensive recoverable reserves of Federal coal currently under lease, I have decided that a similar policy is warranted here. A pause on leasing, with limited exceptions, will allow future leasing decisions to benefit from the recommendations that result from the PEIS while minimizing any economic hardship during that review. Id. § 5.</p> <p>The Secretary’s reasoning is also apt here. A programmatic review assessing the climate change effects of public fossil fuels is long overdue. And there is no shortage of oil and gas that would preclude a moratorium while such a review is conducted, as evidenced by very low natural oil and gas prices. More importantly, BLM should not “risk[] locking in for decades the future development of large quantities of [fossil fuels] under current...terms that a [programmatic review] may ultimately determine to be less than optimal.” Id. BLM should cancel the sale and halt all new leasing and fracking until a programmatic review is completed.</p> | <p>all Federal rules, regulations, and laws. The commenter’s desire for national guidance is outside the scope of this EA and is a policy issue, not a NEPA issue.</p> |
| 13 | CBD | <p>III. BLM Has Violated the National Environmental Policy Act</p> <p>BLM’s PEA fails to comply with the National Environmental Policy Act (“NEPA”) because its analysis of environmental impacts fails to take a “hard look” at foreseeable impacts, arbitrarily refuses to consider relevant issues; and capriciously declines to prepare an environmental impact statement (“EIS”) despite potentially significant impacts. NEPA regulations and case law require that BLM evaluate all “reasonably foreseeable” direct and indirect effects of its leasing. 40 C.F.R. § 1508.8; Davis v. Coleman, 521 F.2d 661, 676 (9th Cir. 1975); Center for Biological Diversity (“CBD”) v. Bureau of Land Management,, 937 F. Supp. 2d 1140 (N.D. Cal. 2013) (holding that oil and gas leases were issued in violation of NEPA where BLM failed to prepare an EIS and unreasonably concluded that the leases would have no significant environmental impact because the agency failed to take into account all reasonably foreseeable development under the leases).</p> <p>It is evident that the highly controversial industry practices of hydraulic fracturing, horizontal drilling, and other unconventional well stimulation techniques, is poised to expand; it is further evident that the oil and gas industry is still exploring new locations to develop, and the nation has not yet seen the full extent of fracking’s impact on oil and gas development and production. In large part through the use of fracking, the oil and gas sector is now producing huge amounts of oil and gas throughout the United States, rapidly transforming the domestic energy outlook. Fracking is occurring in the absence of any adequate federal or state oversight. The current informational and regulatory void</p> | <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and EA WY-070-EA16-66 has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM WO-2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>In accordance with H-1624-1 – Planning For Fluid Mineral</p> |

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| | | <p>on the state level makes it even more critical that the BLM perform its legal obligations to review, analyze, disclose, and avoid and mitigate the impacts of its oil and gas leasing decisions.</p> <p>The PEA’s White Paper fails to satisfy the BLM’s obligations to provide site-specific analyses of the foreseeable impacts that this sale would have (on air, climate change, soil, water, sensitive species, public health and safety). Instead, the PEA attempts to defer the required analysis to the APD stage, which, as we have already explained, is improper.</p> <p>1) Overview</p> <p>NEPA demands that a federal agency prepare an EIS before taking a “major [f]ederal action[] significantly affecting the quality’ of the environment.” Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1067 (9th Cir. 2002). In order to determine whether a project’s impacts may be “significant,” an agency may first prepare an EA. 40 C.F.R. §§ 1501.4, 1508.9. If the EA reveals that “the agency’s action may have a significant effect upon the . . . environment, an EIS must be prepared.” Nat’l Parks & Conservation Ass’n v. Babbitt, 241 F.3d 722, 730 (9th Cir. 2001) (internal quotations omitted). If the agency determines that no significant impacts are possible, it must still adequately explain its decision by supplying a “convincing statement of reasons” why the action’s effects are insignificant. Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998) (emphasis added). Further, an agency must prepare all environmental analyses required by NEPA at “the earliest possible time.” 40 C.F.R. § 1501.2. “NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment,” but is “designed to require such analysis as soon as it can reasonably be done.” Kern, 284 F.3d at 1072.</p> <p>2) BLM Unlawfully Restricted Its Analysis</p> <p>BLM has unlawfully restricted its NEPA analysis by failing to analyze sufficiently site-specific impacts. Instead, the PEA impermissibly defers analysis of all site-specific impacts to the APD (Applications for Permit to Drill) stage. However, if a lease is sold, the lessee acquires certain contractual rights constraining BLM authority. For example, according to 43 CFR § 3101.1-2, once a lease is issued to its owner, that owner has the “right to use as much of the lease lands as is necessary to explore for, drill for, mine, extract, remove and dispose of the leased resource in the leasehold” subject to specific nondiscretionary statutes and lease stipulations. Furthermore, piecemeal analyses of individual lease sales do not provide the appropriate perspective for examining the cumulative effects of hydraulic fracturing and climate change impacts at the regional and landscape scale and for making land management decisions.</p> <p>BLM claims that it is not required to undertake any site-specific environmental reviews prior to issuing an oil and gas lease filing, and that an APD “may be the first useful point at which a site-specific environmental analysis can be undertaken. To support its claim,</p> | <p>Resources (Rel. 1-1749, 1/28/2013): The Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2; Yates Petroleum Corporation, 176 IBLA 144 (2008); National Wildlife Federation, 169 IBLA 146, 164 (2006).</p> <p>Issuance of an oil and gas lease does not authorize operations on the lease. The possibility or nature of lease development operations cannot be reasonably determined at the leasing stage, nor can impacts realistically be analyzed in more detail at this time. If a lease is issued and development proposed, additional permits will be submitted to the BLM and analyzed in a site-specific NEPA document, which will address resource concerns.</p> <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to water depletion or sensitive species dependent on water through the administrative action of leasing. Indirect effects from leasing may occur to water if development were to occur. At the time of a site-specific application, such as an APD, surface and subsurface water resources, including special status species, will be identified, evaluated, and conditions of approval to mitigate adverse impacts to the water related resources may be imposed at that time.</p> |

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| | | <p>BLM improperly cites to <i>Park County Resource Council, Inc. v. U.S. Department of Agriculture</i>, 817 F.2d 609 (10th Cir. 1987), which had been discussed at length in <i>N.M. ex rel. Richardson v. BLM</i>, 565 F.3d 683, 717 (10th Cir. 2009) when the oil industry attempted to make the same argument – that under Park County, BLM may routinely wait until the APD stage to conduct site-specific analysis. The Tenth Circuit disagreed with that interpretation, and compared it to <i>Pennaco Energy, Inc. v. United States DOI</i>, 377 F.3d 1147, 1152 (10th Cir. 2004), in which the Tenth Circuit held, in the circumstances of that case, an EIS assessing the specific effects of coal bed methane was required before the leasing stage. “Taken together, these cases establish that there is no bright line rule that site-specific analysis may wait until the APD stage . . . Looking to the standards set out by regulation and by statute, assessment of all ‘reasonably foreseeable’ impacts must occur at the earliest practicable point, and must take place before an ‘irretrievable commitment of resources’ is made. <i>N.M. ex rel. Richardson</i>, 565 F.3d at 717-18 (citing 42 U.S.C. § 4332(2)(C)(v)). The “operative inquiry” thus is simply whether all foreseeable impacts of leasing had been taken into account before leasing could proceed. BLM bases its failure to provide any site-specific impacts on the fact that “it has not received any development proposals concerning the lease sale parcels addressed in this EA.” Again, the Tenth Circuit has made clear that development proposals are not required to conduct site-specific analysis.</p> <p>NEPA requires that an agency conduct all environmental analyses at “the earliest possible time.” 40 C.F.R. § 1501.2; see also <i>N. Alaska Env’tl. Ctr. v. Kempthorne</i>, 457 F.3d 969, 973, 977-78 (9th Cir. 2006); <i>N.M. ex rel. Richardson v. Bureau of Land Mgmt.</i>, 565 F.3d 683, 718 (10th Cir. 2009). In <i>Richardson</i>, the Tenth Circuit specifically found “issuing an oil and gas lease with a [No Surface Occupancy] stipulation constitutes” an irrevocable commitment of resources. 565 F.3d at 718. Under this decision, and the terms of the BLM’s own NEPA Handbook, the consequences of conveying the right to surface disturbance must be analyzed now, when the BLM still has the right to prohibit or regulate comprehensively the scope of surface activity. Here, this means that BLM must make reasonable effort to anticipate and analyze all reasonably foreseeable impacts now, before it has leased the land and is unable to prevent environmental impacts.</p> <p>3) BLM’s PEA Fails to Take a Hard Look at Potential Impacts from the Lease Sale, Oil and Gas Development, and the Use of Hydraulic Fracking Technologies</p> <p>NEPA establishes “action-forcing” procedures that require agencies to take a “hard look” at environmental consequences.” <i>Ctr. for Biological Diversity v. United States DOI</i>, 623 F.3d 633, 642 (9th Cir. 2010). Chief among these procedures is the preparation of an environmental impact statement (“EIS”). <i>Id.</i> As demonstrated by the agency’s generic and meager discussion of potential problems that could result from fracking and its failure to analyze the actual impacts of the lease sale, BLM’s PEA fails to take the requisite hard look at environmental impacts.</p> <p>A. BLM Failed to Adequately Disclose or Analyze the Project’s Impacts to Water</p> | |

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| | | <p data-bbox="321 131 436 159">Resources</p> <p data-bbox="321 191 1276 435">Oil and gas activities pose significant danger to water resources. This includes harms that are common to oil and gas operations in general, and damages fracking in particular can cause. While much remains to be learned about fracking, it is clear that the practice poses serious threats to water resources. Across the U.S., in states where fracking or other types of unconventional oil and gas recovery has occurred, surface water and groundwater have been contaminated. Recent studies have concluded that water contamination attributed to unconventional oil and gas activity has occurred in several states, including Colorado, Wyoming, Texas, Pennsylvania, Ohio, and West Virginia.</p> <p data-bbox="321 467 1276 768">BLM appears to assume that it does not have to consider all site-specific impacts because it has authority to prevent oil and gas activities later at the APD stage. That belief is incorrect. The lease sale could result in impacts that BLM will not be able to avoid once the lease sale is finalized because the agency’s ability to prevent lessees from engaging in lawful activities on issued leases will be limited. BLM regulations provide that lessees “have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold subject to” limited conditions, including lease stipulations, “specific, nondiscretionary statutes,” and limited “reasonable measures” that do not preclude all development activities. 43 C.F.R. § 3101.1-2.</p> <p data-bbox="321 800 1234 860">The likelihood that the sale will result in fracking raises several issues that BLM must address:</p> <ul data-bbox="321 893 1276 1494" style="list-style-type: none"> <li data-bbox="321 893 1144 920"><input type="checkbox"/> Where will the water come from and what are the impacts of extracting it? <li data-bbox="321 953 1045 980"><input type="checkbox"/> What chemicals will be used in the drilling and fracking process? <li data-bbox="321 1013 1119 1040"><input type="checkbox"/> How will BLM ensure the collection and disclosure of that information? <li data-bbox="321 1073 1213 1133"><input type="checkbox"/> What limitations will BLM place on the chemicals used in order to protect public health and the environment? <li data-bbox="321 1166 1224 1226"><input type="checkbox"/> What measures will BLM require to ensure adequate monitoring of water impacts, both during and after drilling? <li data-bbox="321 1258 1276 1318"><input type="checkbox"/> What baseline data is available to ensure that monitoring of impacts can be carried out effectively? How will BLM collect baseline data that is not currently available? <li data-bbox="321 1351 1182 1411"><input type="checkbox"/> Much of the fracking fluid return to the surface as toxic waste. Where will the discharge go? <li data-bbox="321 1443 1245 1503"><input type="checkbox"/> Is there the potential for subsurface migration of fracking fluids, or the potential for those fluids to escape into the groundwater by way of a faulty casing? | |

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| | | <input type="checkbox"/> What kinds of treatment will be required? <input type="checkbox"/> What is the potential footprint and impact of the necessary treatment facilities? | |
| 14 | CBD | <p>The PEA’s discussion of potential impacts to water resources fails to adequately and specifically address significant issues that are likely to arise from the sale, thereby violating the requirements of NEPA. BLM must at the very least prepare a full EIS that addresses the following issues.</p> <p>1. Surface Water Contamination</p> <p>Surface waters can be contaminated in many ways from unconventional well stimulation. In addition to storm water runoff, surface water contamination may also occur from chemical and waste transport, chemical storage leaks, and breaches in pit liners. The spilling or leaking of fracking fluids, flowback, or produced water is a serious problem. Harmful chemicals present in these fluids can include volatile organic compounds (“VOCs”), such as benzene, toluene, xylenes, and acetone. As much as 25 percent of fracking chemicals are carcinogens, and flowback can even be radioactive. As described below, contaminated surface water can result in many adverse effects to wildlife, agriculture, and human health and safety. It may make waters unsafe for drinking, fishing, swimming and other activities, and may be infeasible to restore the original water quality once surface water is contaminated. BLM should consider this analysis in the EIS.</p> <p>i. Chemical and Waste Transport</p> <p>Massive volumes of chemicals and wastewater used or produced in oil and gas operations have the potential to contaminate local watersheds. Between 2,600 to 18,000 gallons of chemicals are injected per hydraulically fracked well depending on the number of chemicals injected.</p> <p>Several billions of gallons of wastewater are produced by oil and gas production per year. Onshore oil and gas operations in the United States create about 56 million barrels of produced water per day. California wells, for instance, produced roughly 3 billion barrels of wastewater in 2013, which is about 15 times the amount of oil the state produced. Approximately 2,019 billion gallons of wastewater are produced by oil and gas production per year in Colorado. This waste can reach fresh water aquifers and drinking water.</p> <p>Fluids must be transported to and/or from the well, which presents opportunities for spills. Unconventional well stimulation relies on numerous trucks to transport chemicals to the site as well as collect and carry disposal fluid from the site to processing facilities. A U.S. GAO study found that up to 1,365 truck loads can be required just for the drilling and fracturing of a single well pad while the New York Department of Conservation estimated the number of “heavy truck” trips to be about 3,950 per horizontal well</p> | <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>Section 4.1.4 of the Casper RMP EIS describes impacts to surface water quality, surface water quantity, and groundwater quality and quantity. The ROD identifies broad goals and objectives for protection of water resources (Goals PR:5, PR:6 and PR:7), and numerous water quality decisions are aimed at protection and enhancement of water resources (pages 2-13 and 2-14). The Newcastle RMP EIS in Section ***. The ROD (pages 17-18 and Appendix 1) includes decisions to protect surface and groundwaters.</p> <p>Parcels offered for lease sale are subject to the parcel specific stipulations shown in Appendix C to EA WY-070-EA16-66, which are derived from the RMPs, as well as protections under Lease Notices and Lease Stipulations applicable to each lease sale parcel.</p> |

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| | | <p>(including unloaded and loaded trucks). Accidents during transit may cause leaks and spills that result in the transported chemicals and fluids reaching surface waters. Chemicals and waste transported by pipeline can also leak or spill. There are also multiple reports of truckers dumping waste uncontained into the environment.</p> <p>Produced waters that fracking operations force to the surface from deep underground can contain high levels of total dissolved solids, salts, metals, and naturally occurring radioactive materials. If spilled, the effects of produced water or brine can be more severe and longer-lasting than oil spills, because salts do not biodegrade or break down over time. The only way to deal with them is to remove them. Flowback waters (i.e., fracturing fluids that return to the surface) may also contain similar constituents along with fracturing fluid additives such as surfactants and hydrocarbons. Given the massive volumes of chemicals and wastewater produced and their potentially harmful constituents, and their persistence in the environment, the potential for environmental disaster is real.</p> <p>The EIS should evaluate how often accidents can be expected to occur, and the effect of chemical and fluid spills. Such analysis should also include identification of the particular harms faced by communities near oil and gas fields. The EIS must include specific mitigation measures and alternatives based on a cumulative impacts assessment, and the particular vulnerabilities of environmental justice communities in both urban and rural settings.</p> <p>ii. On-site Chemical Storage and Processing</p> <p>Thousands of gallons of chemicals can be potentially stored on-site and used during hydraulic fracturing and other unconventional well stimulation activities. These chemicals can be susceptible to accidental spills and leaks. Natural occurrences such as storms and earthquakes may cause accidents, as can negligent operator practices.</p> <p>Some sites may also use on-site wastewater treatment facilities. Improper use or maintenance of the processing equipment used for these facilities may result in discharges of contaminants. Other spill causes include equipment failure (most commonly, blowout preventer failure, corrosion and failed valves) and failure of container integrity. Spills can result from accidents, negligence, or intentional dumping.</p> <p>The EIS should examine and quantify the risks to human health and the environment associated with on-site chemical and wastewater storage, including risks from natural events and negligent operator practices. Again, such analysis must also include an analysis of potential impacts faced by environmental justice communities in both rural and urban settings.</p> <p>2. Groundwater Contamination</p> <p>Studies have reported many instances around the country of groundwater contamination</p> | |

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| | | <p>due to surface spills of oil and gas wastewater, including fracking flowback.⁸⁹ Fracking and other unconventional techniques likewise pose inherent risks to groundwater due to releases below the surface, and these risks must be properly evaluated.⁹⁰ Once groundwater is contaminated, it is very difficult, if not impossible, to restore the original quality of the water. As a result, in communities that rely on groundwater drinking water supplies, groundwater contamination can deprive communities of usable drinking water. Such long-term contamination necessitates the costly importation of drinking water supplies.</p> <p>Groundwater contamination can occur in a number of ways, and the contamination may persist for many years. Poorly constructed or abandoned wells are recognized as one of the most likely ways by which contaminants may reach groundwater. Faulty well construction, cementing, or casing, as well as the injection of fracking waste underground, can all lead to leaks. Older wells that may not have been designed to withstand the stresses of hydraulic fracturing but which are reused for this purpose are especially vulnerable. Improper well construction and surface spills are cited as a confirmed or potential cause of groundwater contamination in numerous incidents at locations across the U.S. including but not limited to Colorado, Wyoming, Pennsylvania, Ohio, West Virginia, and Texas. These sorts of problems at the well are not uncommon. Dr. Ingraffea of Cornell has noted an 8.9 percent failure rate for wells in the Marcellus Shale. Also, the Draft EPA Investigation of Ground Water Contamination near Pavillion, Wyoming, found that chemicals found in samples of groundwater were from fracked wells. These results have been confirmed with follow-up analyses. Moreover, another study based on modeling found that active transport of fracking fluid from a fracked well to an aquifer could occur in less than 10 years.</p> <p>Current federal rules do not ensure well integrity. The well casing can potentially fail over time and potentially create pathways for contaminants to reach groundwater. Well casing failure can occur due to improper or negligent construction. The EIS should study the rates of well casing failures over time and evaluate the likelihood that well casing failures can lead to groundwater contamination.</p> <p>Also, fluids and hydrocarbons may contaminate groundwater by migrating through newly created or natural fractures. Many unconventional techniques intentionally fracture the formation to increase the flow of gas or oil. New cracks and fissures can allow the additives or naturally occurring elements such as natural gas to migrate to groundwater. “[T]he increased deployment of hydraulic fracturing associated with oil and gas production activities, including techniques such as horizontal drilling and multi-well pads, may increase the likelihood that these pathways could develop,” which, “in turn, could lead to increased opportunities for impacts on drinking water sources.” Fluids can also migrate through pre-existing and natural faults and fractures that may become pathways once the fracking or other method has been used.</p> <p>According to the EPA, “evidence of any fracturing-related fluid migration affecting a drinking water resources...could take years to discover.” The EIS must consider long-</p> | |

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| | | <p>term studies on the potential for fluid migration through newly created subsurface pathways. Fluid migration is of particular concern when oil and gas operations are close to drinking water supplies.</p> <p>Fracking fluid can also spill at the surface during the fracking process. For instance, mechanical failure or operator error during the process has caused leaks from tanks, valves, and pipes. At the surface, pits or tanks can leak fracking fluid or waste. Surface pits, in which wastewater is often dumped, are a major source of pollution. In California, a farmer was awarded \$8.5 million in damages after his almond trees died when he irrigated them with well water that had been contaminated by nearby oil and gas operations. The contamination was traced to unlined pits where one of California’s largest oil and gas producers for decades dumped billions of gallons of wastewater that slowly leached pollutants into nearby groundwater. Also, New Mexico data shows, over the course of 3 decades, 743 instances of all types of oil and gas operations polluting groundwater – the source of drinking water for 90 percent of the state’s residents.</p> <p>Unfiltered drinking water supplies, such as drinking water wells, are especially at risk because they have no readily available means of removing contaminants from the water. Even water wells with filtration systems are not designed to handle the kind of contaminants that result from unconventional oil and gas extraction. In some areas hydraulic fracturing may occur at shallower depths or within the same formation as drinking water resources, resulting in direct aquifer contamination. The EIS must disclose where the potential for such drilling exists.</p> <p>Setbacks may not be adequate to protect groundwater from potential fracking fluid contamination. A recent study by the University of Colorado at Boulder suggests that setbacks of even up to 300-feet may not prevent contamination of drinking water resources. The study found that 15 organic compounds found in hydraulic fracturing fluids may be of concern as groundwater contaminants based on their toxicity, mobility, persistence in the environment, and frequency of use. These chemicals could have 10 percent or more of their initial concentrations remaining at a transport distance of 300 feet, the average “setback” distance in the U.S. The effectiveness and feasibility of any proposed setbacks must be evaluated.</p> <p>3. Disposal of Drilling and Fracking Wastes</p> <p>Finally, disposal of wastes from oil and gas operations can also lead to contamination of water resources. Potential sources of contamination include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> leaching from landfills that receive drilling and fracking solid wastes; <input type="checkbox"/> spreading of drilling and fracking wastes over large areas of land; <input type="checkbox"/> wastewaters discharged from treatment facilities without advanced “total dissolved solids” removal processes, or inadequate capacity to remove radioactive material removal; and | |

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| | | <p data-bbox="321 164 877 191">☐ breaches in underground injection disposal wells.</p> <p data-bbox="321 224 1192 280">The EIS must evaluate the potential for contamination from each of these disposal methods.</p> <p data-bbox="321 313 1171 341">4. More Intensive Oil and Gas Development Will Increase Storm Water Runoff</p> <p data-bbox="321 378 1272 618">Oil and gas operations require land clearance for access roads, pipelines, well pads, drilling equipment, chemical storage, and waste disposal pits. As a result, new oil and gas development will cause short-term disturbance as well as long-term disturbance within the areas for lease. While undisturbed land can retain greater amounts of water through plants and pervious soil, land that has been disturbed or developed may be unable to retain as much water, thereby increasing the volume of runoff. The area of land that is able to retain water will be significantly decreased if unconventional oil and gas extraction methods are permitted to expand.</p> <p data-bbox="321 651 1247 862">Water from precipitation and snowmelt can serve as an avenue through which contaminants travel from an operation site to sensitive areas, including population centers. Contaminated water runoff may seep into residential areas, polluting streets, sidewalks, soil, and vegetation in urban areas, adversely affecting human health. Thus, not only do these oil and gas activities create pollution, they create greater conduits for storm water runoff to carry those pollutants from the operation site, into areas in which significant harm can be caused.</p> <p data-bbox="321 894 1251 1105">Rapid runoff, even without contaminants, can harm the environment by changing water flow patterns and causing erosion, habitat loss, and flooding. Greater runoff volumes may also increase the amount of sediment that is carried to lakes and streams, affecting the turbidity and chemical content of surface waters. Because a National Pollutant Discharge Elimination System permit is not required for oil and gas operations, it is particularly important that the impact of runoff is considered as part of the NEPA process.</p> <p data-bbox="321 1138 1037 1166">5. Fossil Fuel Development Depletes Enormous Amounts of Water</p> <p data-bbox="321 1198 1272 1498">Some unconventional extraction techniques, most notably fracking, require the use of tremendous amounts of freshwater. Typically between 2 and 5.6 million gallons of water are required to frack each well. According to the PEA's White Paper, up to 2 million gallons may be used to fracture deep tight sand gas wells in southwestern Wyoming, while up to 5 million gallons may be used to fracture a horizontal well in the Niobrara oil play. These volumes far exceed the amounts used in conventional natural gas development. Such high levels of water use are unsustainable. Water used in large quantities may lead to several kinds of harmful environmental impacts. The extraction of water for fracking can, for example, lower the water table, affect biodiversity, harm local ecosystems, and reduce water available to communities.</p> | |

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| | | <p>BLM must also take into account the higher fresh water requirements of drilling, completion, and fracking of horizontal wells. These wells typically require much greater amounts of freshwater than do vertical or directional wells.</p> <p>Withdrawal of large quantities of freshwater from streams and other surface waters will undoubtedly have an impact on the environment. Withdrawing water from streams will decrease the supply for downstream users, such as farmers or municipalities. Rising demand from oil and gas operators has already led to increased competition for water between farmers and oil and gas operators. For example, in prior years, farmers in Colorado have paid at most \$100 per acre-feet of water in auctions held by cities with excess supplies, but in 2013 energy companies paid \$1200 to \$2,900 per acre-feet. Reductions in stream flows may also lead to downstream water quality problems by diminishing the water bodies' capacity for dilution and degradation.</p> <p>Furthermore, withdrawing large quantities of water from subsurface waters to supply oil and gas production will likely deplete and harm aquifers. Removing water from surface water or directly from underground sources of water faster than the rate that aquifers can be replenished will lower the volume of water available for other uses. Depletion can also lead to compaction of the rock formation serving as an aquifer, after which the original level of water volume can never be restored. Depleted aquifer water resources may also adversely affect agriculture, species habitat and ecosystems, and human health.</p> <p>The freshwater in the area therefore would be greatly affected by the increased demand for water if fracking and other unconventional oil and gas extraction are permitted. A no-fracking alternative would preserve scarce water resources and keep critical sources of drinking water in the planning area safe and clean. The EIS must analyze where water will be sourced, how much, and the effects on water sources under different alternatives. All of these effects must be analyzed in the context of increasing water scarcity in Wyoming due to climate change, drought, and increasing population growth.</p> <p>6. Oil and Gas Developments Harm Aquatic Life and Habitat</p> <p>The PEA does not provide any analysis regarding the impacts of the sale on wildlife and special status species. When streams and other surface waters are depleted, the habitat for countless plants and animals will be harmed, and the depletion places tremendous pressure on species that depend on having a constant and ample stream of water. Such impacts must (a) be adequately analyzed in an EIS and (b) undergo full and up-to-date consultation with the Fish and Wildlife Service under Section 7 of the Endangered Species Act, using the best and most recent scientific data regarding river flows and the status of any sensitive or endangered species.</p> <p>Physical habitats such as banks, pools, runs, and glides (low gradient river sections) are important yet susceptible to disturbance with changing stream flows. Altering the volume of water can also change the water's temperature and oxygen content, harming</p> | |

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| | | <p>some species that require a certain level of oxygenated water. Decreasing the volume of streamflow and stream channels by diverting water to fracking would have a negative impact on the environment and should be included in the EIS.</p> <p>The physical equipment itself that is designed to intake and divert water may also pose a threat to certain wildlife. If not properly designed, such equipment and intake points may be a risk to wildlife. BLM further points out that releases of contaminants (e.g. wastewater, fracking fluids, and petroleum products) and sediments from roads, pad, and pipeline construction “can contribute to adverse changes in water quality and/or prompt system changes that can lead to mortality in aquatic vertebrates through acute or chronic toxicity . . .”</p> <p>Given the great risks and inevitable harm to endangered and BLM-sensitive species, BLM must provide a complete analysis of impacts and mitigation measures, instead of kicking the can down the road and waiting until the APD stage to evaluate the significant impacts of the sale.</p> <p>7. Harm to Wetlands</p> <p>Oil and gas development, and particularly the practice of fracking, pose an immense threat to water resources. High volume removal of surface or groundwater can result in damage to wetlands, which rely on ample water supplies to maintain the fragile dynamics of a wetland habitat. Damage can also occur from spills of chemicals or wastewater, filling operations, and sediment runoff. BLM in its environmental document must fully vet the impacts from every potential aspect of the proposed sale.</p> <p>Many plant and animal species depend on wetland habitats, and even small changes can lead to significant impacts. Wetlands provide a variety of “eco-service” functions, including water purification, protection from floods, and functioning as carbon sinks. The ecological importance of wetlands is unquestionable, and their full protection is paramount. The EIS must analyze these potential impacts to wetlands, and the related, potential indirect impacts that may stem from such impacts.</p> | |
| 14 | CBD | <p>B. BLM Failed to Adequately Disclose or Analyze the Project’s Harm to Air Quality</p> <p>Given the likelihood that fracking and other similarly harmful techniques would be employed in the exploration and development of the parcels, BLM has an obligation to analyze and disclose the potential impacts resulting from such frequently used practices. BLM cannot excuse itself of this obligation on account that “[t]he BLM cannot determine at the leasing stage whether or not a proposed parcel will actually be sold and, if it is sold and a lease is issued, whether or not the lease would be explored or developed....” especially when the PEA admits that hydraulic fracturing “has been used since the 1940s.” The purpose of an environmental assessment is for BLM to look at the impacts in total, and to take a hard look at all “reasonably foreseeable” impacts now, before leasing the land. NEPA regulations and case law clearly establish that uncertainty about the precise extent and nature of environmental impacts does not relieve an agency</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality and climate change will be analyzed through additional site-specific NEPA analysis, and conformance with state and Federal air quality standards and regulations will be evaluated. As new information is gathered, it will be incorporated into BLM decisions and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p> |

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| | | <p>of the obligation to disclose and analyze those impacts utilizing the best information available. See 40 C.F.R. § 1502.22(a),(b).</p> <p>Oil and gas operations emit numerous air pollutants, including volatile organic compounds (VOCs), NOX, particulate matter, hydrogen sulfide, and methane. Fracking operations are particularly harmful, emitting especially large amounts of pollution, including air toxic air pollutants. Permitting fracking and other well stimulation techniques will greatly increase the release of harmful air emissions in these and other regions. BLM should adopt the no-leasing (or no action) alternative, or else adopt a no-fracking alternative, which would prevent further degradation of local air quality, respiratory illnesses, premature deaths, hospital visits, as well as missed school and work days.</p> <p>1. Types of Air Emissions</p> <p>BLM failed to provide adequate analysis of the type, extent, or source of emissions from unconventional oil and gas extraction methods, such as fracking; instead BLM arbitrarily and capriciously restricted its analysis to conventional oil and gas. The rapid expansion of unconventional oil makes the impacts associated with fracking foreseeable.</p> <p>Unconventional oil and gas operations emit large amounts of toxic air pollutants, also referred to as Hazardous Air Pollutants, which are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. The reporting requirements recently implemented by the California South Coast Air Quality Management District (“SCAQMD”) have shown that at least 44 chemicals known to be air toxics have been used in fracking and other types of unconventional oil and gas recovery in California. Through the implementation of these new reporting requirements, it is now known that operators have been using several types of air toxics in California, including crystalline silica, methanol, hydrochloric acid, hydrofluoric acid, 2-butoxyethanol, ethyl glycol monobutyl ether, xylene, amorphous silica fume, aluminum oxide, acrylic polymer, acetophenone, and ethylbenzene. Many of these chemicals also appear on the U.S. EPA’s list of hazardous air pollutants. EPA has also identified six “criteria” air pollutants that must be regulated under the National Ambient Air Quality Standards (NAAQS) due to their potential to cause primary and secondary health effects. Concentrations of these pollutants—ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead—will likely increase in regions where unconventional oil and gas recovery techniques are permitted. VOCs can form ground-level (tropospheric) ozone when combined with nitrogen oxides (“NOX”), from compressor engines, turbines, other engines used in drilling, and flaring, and sunlight. This reaction can diminish visibility and air quality and harm vegetation. Tropospheric ozone can also be caused by methane, which is leaked and vented at various stages of unconventional oil and gas development, as it interacts with nitrogen oxides and sunlight. In addition to its role as a greenhouse gas, methane contributes to increased concentrations of ground-level ozone, the primary component of smog, because it is an ozone precursor. Methane’s effect on ozone concentrations can be</p> | <p>A discussion of Air Quality and Climate Change have been addressed in the EA in part 3.3.1.</p> <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development on wildlife, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and EA WY-070-EA16-66 has adequately analyzed the issues raised by this comment. Site-specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM WO-2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>In accordance with H-1624-1 – Planning For Fluid Mineral Resources (Rel. 1-1749, 1/28/2013): The Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2; Yates Petroleum Corporation, 176 IBLA 144 (2008); National Wildlife Federation, 169 IBLA 146, 164 (2006).</p> <p>As noted in your comments, the Council on Environmental</p> |

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| | | <p>substantial. One paper modeled reductions in various anthropogenic ozone precursor emissions and found that “[r]educing anthropogenic CH4 emissions by 50% nearly halves the incidence of U.S. high-O3 events”</p> <p>Like methane, VOCs and NOX are also ozone precursors; therefore, many regions around the country with substantial oil and gas operations are now suffering from extreme ozone levels due to heavy emissions of these pollutants. Ozone can result in serious health conditions, including heart and lung disease and mortality. A recent study of ozone pollution in the Uintah Basin of northeastern Utah, a rural area that experiences hazardous tropospheric ozone concentrations, found that oil and gas operations were responsible for 98 to 99 percent of VOCs and 57 to 61 percent of NOX emitted from sources within the Basin considered in the study’s inventory.</p> <p>Oil and gas operations can also emit hydrogen sulfide. The hydrogen sulfide is contained in the natural gas and makes that gas “sour.” Hydrogen sulfide may be emitted during all stages of operation, including exploration, extraction, treatment and storage, transportation, and refining. Long-term exposure to hydrogen sulfide is linked to respiratory infections, eye, nose, and throat irritation, breathlessness, nausea, dizziness, confusion, and headaches.</p> <p>The oil and gas industry is also a major source of particulate matter. The heavy equipment regularly used in the industry burns diesel fuel, generating fine particulate matter that is especially harmful. Vehicles traveling on unpaved roads also kick up fugitive dust, which is particulate matter. Further, both NOX and VOCs, which as discussed above are heavily emitted by the oil and gas industry, are also particulate matter precursors. Some of the health effects associated with particulate matter exposure are “premature mortality, increased hospital admissions and development of chronic respiratory disease.”</p> <p>Fracking results in additional air pollution that can create a severe threat to human health. One analysis found that 37 percent of the chemicals found at fracked gas wells were volatile, and that of those volatile chemicals, 81 percent can harm the brain and nervous system, 71 percent can harm the cardiovascular system and blood, and 66 percent can harm the kidneys. Also, the SCAQMD has identified three areas of dangerous and unregulated air emissions from fracking: (1) the mixing of the fracking chemicals; (2) the use of the silica, or sand, as a proppant, which causes the deadly disease silicosis; and (3) the storage of fracking fluid once it comes back to the surface. Preparation of the fluids used for well completion often involves onsite mixing of gravel or proppants with fluid, a process which potentially results in major amounts of particulate matter emissions. Further, these proppants often include silica sand, which increases the risk of lung disease and silicosis when inhaled. Finally, as flowback returns to the surface and is deposited in pits or tanks that are open to the atmosphere, there is the potential for organic compounds and toxic air pollutants to be emitted, which are harmful to human health as described above.</p> | <p>Quality (CEQ), which oversees NEPA compliance for all federal agencies, has issued “Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts” (Dec. 2014). To date this draft guidance has not been finalized, nor has the BLM issued its own formal guidance for analyzing climate change in NEPA documents. If and when final agency guidance is received, the BLM will comply. BLM has adequately disclosed reasonably foreseeable impacts resulting from climate change whether positive or negative, as required by NEPA.</p> <p>The Council on Environmental Quality (CEQ) regulations at 40 CFR 1502.23, state (in part), “...For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”</p> <p>The Social Cost of Carbon (SCC) protocol was developed by the Office of Management and Budget using an interagency working group in response to Executive Order 12866, which requires federal agencies, to the extent permitted by law, “to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” SCC estimates the monetary cost incurred by the emission of one additional metric ton of carbon dioxide (CO2), and is not applicable to non-CO2 GHG emissions, such as methane. Estimating SCC is challenging because it is intended to model effects on the welfare of future generations at a global scale caused by additional carbon emissions occurring in the present and does not account for the complexity of multiple stressors and indicators. The SCC was developed to support agencies in responding to EO 13514, not for use in making land management decisions.</p> |

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| | | <p>The EIS should study the potential for oil and gas operations sites in the planning area to emit such air toxics and any other pollutants that may pose a risk to human health, paying particular attention to the impacts of air pollution on environmental justice communities that already bear the burden of disproportionately high levels of air pollution. The EIS should rely on the most up-to-date information regarding the contribution of oil and gas operations to VOC and air toxics levels.</p> <p>2. Sources of Air Emissions</p> <p>Harmful air pollutants are emitted during every stage of unconventional oil and gas recovery, including drilling, completion, well stimulation, production, and disposal. Drilling and casing the wellbore require substantial power from large equipment. The engines used typically run on diesel fuel, which emits particularly harmful types of air pollutants when burned. Similarly, high-powered pump engines are used in the fracturing and completion phase. This too can amount in large volumes of air pollution. Flaring, venting, and fugitive emissions of gas are also a potential source of air emissions. Gas flaring and venting can occur in both oil and gas recovery processes when underground gas rises to the surface and is not captured as part of production. Fugitive emissions can occur at every stage of extraction and production, often leading to high volumes of gas being released into the air. Methane emissions from oil and gas production is as much as 270 percent greater than previously estimated by calculation. Recent studies show that emissions from pneumatic valves (which control routine operations at the well pad by venting methane during normal operation) and fugitive emissions are higher than EPA estimates.</p> <p>Evaporation from pits can also contribute to air pollution. Pits that store drilling waste, produced water, and other waste fluid may be exposed to the open air. Chemicals mixed with the wastewater—including the additives used to make fracking fluids, as well as volatile hydrocarbons, such as benzene and toluene, brought to the surface with the waste—can escape into the air through evaporation. Some pits are equipped with pumps that spray effluents into the air to hasten the evaporation process. Even where waste fluid is stored in so-called “closed loop” storage tanks, fugitive emissions can escape from tanks.</p> <p>As mentioned above, increased truck traffic will lead to more air emissions. Trucks capable of transporting large volumes of chemicals and waste fluid typically use large engines that run on diesel fuel. Air pollutants from truck engines will be emitted not only at the well site, but also along truck routes to and from the site.</p> <p>The EIS must provide an adequate analysis and disclosure of the effects the lease sale could have on air quality, including the impacts that would result from fracking. The PEA cannot postpone the discussion of air pollution and climate change impacts until site-specific plans are proposed. Because BLM must analyze impacts at “the earliest practicable time,” and no benefit would be gained from postponing the analysis, BLM must discuss these cumulative impacts before the lease sale.</p> | |

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| | | <p data-bbox="321 164 709 191">3. Impact of Increased Air Pollution</p> <p data-bbox="321 224 1260 313">The potential harms resulting from increased exposure to the dangerous air pollutants described above are serious and wide ranging. The negative effects of criteria pollutants are well documented and are summarized by the U.S. EPA's website:</p> <p data-bbox="321 378 1266 557">Nitrogen oxides (NOx) react with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. NOx and volatile organic compounds react in the presence of heat and sunlight to form ozone.</p> <p data-bbox="321 589 1270 800">Particulate matter (PM) – especially fine particles – contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including: premature death in people with heart or lung disease, increased mortality, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.</p> <p data-bbox="321 833 1260 979">Sulfur Dioxide (SO2) has been shown to cause an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.</p> <p data-bbox="321 1011 1270 1287">Carbon Monoxide (CO) can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. At extremely high levels, CO can cause death. Exposure to CO can reduce the oxygen-carrying capacity of the blood. People with several types of heart disease already have a reduced capacity for pumping oxygenated blood to the heart, which can cause them to experience myocardial ischemia (reduced oxygen to the heart), often accompanied by chest pain (angina), when exercising or under increased stress. For these people, short-term CO exposure further affects their body's already compromised ability to respond to the increased oxygen demands of exercise or exertion.</p> <p data-bbox="321 1320 1266 1442">Ozone (O3) can trigger or worsen asthma and other respiratory ailments. Ground level ozone can have harmful effects on sensitive vegetation and ecosystems. Ozone may also lead to loss of species diversity and changes to habitat quality, water cycles, and nutrient cycles.</p> <p data-bbox="321 1474 1266 1498">Air toxics and hazardous air pollutants, by definition, can result in harm to human health</p> | |

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| | | <p>and safety. The full extent of the health effects of exposure is still far from being complete, but already there are numerous studies that have found these chemicals to have serious health consequences for humans exposed to even minimal amounts. The range of illnesses that can result are summarized in a study by Dr. Theo Colburn, which charts which chemicals have been shown to be linked to certain illnesses.</p> <p>Natural gas drilling operations result in the emissions of numerous non-methane hydrocarbons (NMHCs) that have been linked to numerous adverse health effects. A recent study that analyzed air samples taken during drilling operations near natural gas wells and residential areas in Garfield County, detected 57 chemicals between July 2010 and October 2011, including 44 with reported health effects. For example:</p> <p>Thirty-five chemicals were found to affect the brain/nervous system, 33 the liver/metabolism, and 30 the endocrine system, which includes reproductive and developmental effects. The categories with the next highest numbers of effects were the immune system (28), cardiovascular/blood (27), and the sensory and respiratory systems (25 each). Eight chemicals had health effects in all 12 categories. There were also several chemicals for which no health effect data could be found.</p> <p>The study found extremely high levels of methylene chloride, which may be used as cleaning solvents to remove waxy paraffin that is commonly deposited by raw natural gas in the region. These deposits solidify at ambient temperatures and build up on equipment. While none of the detected chemicals exceeded governmental safety thresholds of exposure, the study noted that such thresholds are typically based on “exposure of a grown man encountering relatively high concentrations of a chemical over a brief time period, for example, during occupational exposure.” Consequently, such thresholds may not apply to individuals experiencing “chronic, sporadic, low-level exposure,” including sensitive populations such as children, the elderly, and pregnant women. For example, the study detected polycyclic aromatic hydrocarbon (PAH) levels that could be of “clinical significance,” as recent studies have linked low levels of exposure to lower mental development in children who were prenatally exposed. In addition, government safety standards do not take into account “the kinds of effects found from low-level exposure to endocrine disrupting chemicals..., which can be particularly harmful during prenatal development and childhood.</p> <p>Another study reviewed exposures to emissions from unconventional natural gas development and noted that trimethylbenzenes are among the largest contributors to non-cancer threats for people living within a half mile of a well, while benzene is the largest contributor to cumulative cancer risk for people, regardless of the distance from the wells.</p> <p>The EIS should incorporate a literature review of the harmful effects of each of these chemicals known to be used in fracking and other unconventional oil and gas extraction methods. Without knowing the effects of each chemical, the EIS cannot accurately project the true impact of unconventional oil and gas extraction.</p> | |

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| | | <p data-bbox="321 164 495 191">4. Air Modeling</p> <p data-bbox="321 224 1272 402">BLM should use air modeling to understand what areas and communities will most likely be affected by air pollution. It is crucial to gather independent data rather than relying on industry estimates, which may be inaccurate or biased. Wind and weather patterns, and atmospheric chemistry, determine the fate and transport of air pollution over a region, over time. The EIS should be informed by air modeling to show where the air pollution will flow.</p> <p data-bbox="321 440 1272 496">C. BLM Failed to Adequately Disclose or Analyze the Project’s Exacerbation of Climate Change Impacts</p> <p data-bbox="321 529 1247 708">BLM cannot ignore climate change in its analysis of fossil fuel planning and leasing actions. Piecemeal analyses of individual APDs or lease sales do not provide the appropriate perspective for examining the cumulative effects of fracking and resulting greenhouse gas emission at the regional and landscape scale. The PEA itself briefly “considers” climate change, but eliminates from further analysis the cumulative effects of oil and gas leasing on contributing to the effects of climate change.</p> <p data-bbox="321 740 1262 886">BLM cannot ignore the mounting evidence proving that oil and gas operations are a major cause of climate change. This is due to emissions from the operations themselves, and emissions from the combustion of the oil and gas produced. Every step of the lifecycle process for development of these resources results in significant carbon emissions, including but not limited to:</p> <p data-bbox="321 919 1268 1097">End-user oil and gas combustion emissions. The combustion of extracted oil, gas, and coal will add vast amounts of carbon dioxide to the atmosphere, further heating the climate and moving the Earth closer to catastrophic and irreversible climate change. Though much of the oil is used as gasoline to fuel the transportation sector, the produced oil may also be used in other types of products. The EIS should study all end-uses as contributors to climate change.</p> <p data-bbox="321 1130 1268 1227">Combustion in the distribution of product. To the extent that distribution of raw and end-use products will rely on rail or trucks, the combustion of gasoline or diesel to transport these products will emit significant greenhouse gas emissions.</p> <p data-bbox="321 1260 1255 1357">Emissions from Refineries and Production. Oil and gas must undergo intensive refinery and production processes before the product is ready for consumption. Refineries and their auxiliary activities constitute a significant source of emissions.</p> <p data-bbox="321 1390 1262 1471">Vented emissions. Oil and gas wells and coal mining operations may vent gas that flows to the surface at times where the gas cannot otherwise be captured and sold. Vented gas is a significant source of greenhouse gas emissions and can also pose a safety hazard.</p> | |

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| | | <p>Combustion during construction and extraction operations. Operators rely on both mobile and stationary sources of power to construct and run their sites. The engines of drilling or excavation equipment, pumps, trucks, conveyors, and other types of equipment burn large amounts of fuel to operate. Carbon dioxide, methane, and nitrous oxide (another potent greenhouse gas) are emitted from oxidized fuel during the combustion process. Engines emit greenhouse gases during all stages of oil and gas recovery, including drilling rig mobilization, site preparation and demobilization, completion rig mobilization and demobilization, well drilling, well completion (including fracking and other unconventional extraction techniques), and well production. Transportation of equipment and chemicals to and from the site is an integral part of the production process and contributes to greenhouse gas emissions. Gas flaring is another important source of carbon dioxide emissions. Significant sources of emissions in oil production include pneumatic devices, dehydrators and pumps, and compressors, and system upsets.</p> <p>Fugitive emissions. Potent greenhouse gases can leak as fugitive emissions at many different points in the production process, especially in the production of gas wells. Recent studies suggest that previous estimates significantly underestimate leakage rates. New research shows methane leakage from some gas wells may be as high as 17.3 percent. Moreover, new research has shown that unconventional gas wells are up to 2.7 times more likely than a conventional well to have a cement or casing impairment, which can lead to methane leaks. The intersection of new fractures with nearby abandoned wells can also result in methane migration to the surface. Leakage can also occur during storage, processing, and distribution to customers.</p> <p>Natural gas emissions are generally about 84 percent methane. Methane is a potent greenhouse gas that contributes substantially to global climate change. Its global warming potential is approximately 34 times that of carbon dioxide over a 100 year time frame and at least 86 times that of carbon dioxide over a 20 year time frame. Oil and gas operations release large amounts of methane. While the exact amount is not clear, EPA has estimated that “oil and gas systems are the largest human-made source of methane emissions and account for 37 percent of methane emissions in the United States and is expected to be one of the most rapidly growing sources of anthropogenic methane emissions in the coming decades.” That proportion is based on an estimated calculation of methane emissions, rather than measured actual emissions, which indicate that methane emissions may be much greater in volume than calculated. BLM, in its PEA, concludes that the development of the lease “would have no measurable impact on the climate” and attempts to support this conclusion by showing that its RFD emissions “are a fraction of EPA modeled emissions from a 1500MW coal-fired power plant.” Even assuming the accuracy of the EPA model and RFD assumptions, the fact that an individual lease sale involves less emission than one power plant is not a valid argument to forego climate analysis. Rather, it bolsters the argument that fossil fuel emissions should be considered in the context of a program-wide analysis.</p> <p>Fracked wells leak an especially large amount of methane, with some evidence</p> | |

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| | | <p>indicating that the leakage rate is so high that shale gas is worse for the climate than coal. In fact, a research team associated with the National Oceanic and Atmospheric Administration recently reported that preliminary results from a field study in the Uinta Basin of Utah suggest that the field leaked methane at an eye-popping rate of nine percent of total production.</p> <p>BLM’s excuse for not providing the required analysis as it relates to oil and gas development is that “It is not feasible to know with certainty the net impacts from the contribution of the proposed action on climate. The lack of precise and accurate scientific models designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts of decisions made at this level.” However, BLM’s own 2010 Climate Change Supplementary Information Report for Montana, North Dakota, and South Dakota (“2015 SIR”) demonstrates that BLM is indeed able to conduct the required analysis. The SIR provides detailed information, including attempts to quantify anticipated greenhouse gas emissions from leasing through 2028, then estimated at approximately 2 million metric tons per year of CO₂e. Exclusion of this readily-available information obscures the role of the regional leasing program in contributing to climate change. A full EIS should address the findings of the 2010 SIR, update them to reflect developments in technology, science, and industry trends since 2010. The SIR also enumerates numerous opportunities for technological mitigation of some of the fugitive emissions associated with oil and gas production and gathering/processing. It even includes an estimate of potential emission reductions from use of technological mitigation including compressor electrification, zero-emission glycol dehydrators, vapor recovery units for oil storage tanks, and green completions. The PEA at present does not even consider any of these mitigation measures, much less incorporate them into an alternative as lease stipulations.</p> <p>A full EIS should analyze and consider, at a minimum, the consequences of alternatives other than simply leasing and no action, including (a) a no-fracking alternative, and (b) an alternative involving adoption of mandatory emission-reduction technologies as lease stipulations.¹⁸⁸ The EIS must weigh the no-fracking alternative’s climate-change benefits against the impacts of allowing new leasing and fracking, and address the following:</p> <p>1. Quantity of Greenhouse Gases</p> <p>The PEA fails to quantify greenhouse gas emissions that could result from the lease sale, but instead merely states the obvious that “industrialization and burning of fossil carbon sources have caused GHG concentrations to increase measurably, and may contribute to overall climatic changes.” This does not meaningfully inform the public as to the potential quantity of greenhouse gases that could be emitted by oil and gas extraction activities. Nor does it analyze at all the significance of these emissions.</p> <p>BLM does not bother to calculate or estimate total greenhouse gas emissions from federal leasing within the state, let alone the emissions that would result from developing</p> | |

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| | | <p>the proposed areas for lease. Depending on the type of extraction (e.g., fracking v. conventional) emissions could be much higher than the proportionate share of overall production. These emissions are reasonably foreseeable and therefore must be taken into account. For example, for a recent lease sale, BLM’s Fillmore Field Office in Utah attempted a general analysis of GHG emissions from operational combustion, construction, and reclamation activities (although this analysis was also incomplete in its failure to analyze emissions from transportation, refining, and pipeline and casing leakage).</p> <p>The PEA explains that “[i]ndirect effects are caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable,” but refuses to perform the required analysis of said effects. The development of an area for lease and subsequent oil and gas production would certainly result in combustion of the extracted product, which the EA implicitly acknowledges. As courts have held in similar contexts, combustion emissions resulting from opening up a new area to development are “reasonably foreseeable,” and therefore a “proximate cause” of the leasing. See <i>Mid States Coal. for Progress v. Surface Transp. Bd.</i>, 345 F.3d 520, 549 (8th Cir. 2003) (holding that agency violated NEPA when it failed to disclose and analyze the future coal combustion impacts associated with the agency’s approval of a railroad line that allowed access to coal deposits); <i>High Country Conserv’n Advocates v. United States Forest Serv.</i>, 52 F. Supp. 3d 1174, 1197 (D. Colo. 2014) (same with respect to GHG emissions resulting from approval of coal mining exploration project).</p> <p>In both <i>Mid States Coalition</i> and <i>High Country</i>, the courts rejected the government’s rationale that increased emissions from combustion of coal was not reasonably foreseeable because the same amount of coal would be burned without opening up the areas at issue to new coal mining. Both courts found this argument “illogical at best” and noted that “increased availability of inexpensive coal will at the very least make coal a more attractive option to future entrants into the utilities market when compared with other potential fuel sources, such as nuclear power, solar power, or natural gas.” See <i>High Country</i>, 52 F. Supp. 3d at 1197 (quoting <i>Mid States Coalition</i>, 345 F.3d at 549). On similar grounds, the development of new wells over the proposed areas for lease will increase the supply of [oil and natural gas]. At some point this additional supply will impact the demand for [oil and gas] relative to other fuel sources, and [these minerals] that otherwise would have been left in the ground will be burned. This reasonably foreseeable effect must be analyzed, even if the precise extent of the effect is less certain.</p> <p><i>Id.</i> See also <i>WildEarth Guardians v. United States Office of Surface Mining, Reclamation & Enft</i>, 104 F. Supp. 3d 1208, 1229-30 (D. Colo. 2015) (coal combustion was indirect effect of agency’s approval of mining plan modifications that “increased the area of federal land on which mining has occurred” and “led to an increase in the amount of federal coal available for combustion”); Council on Environmental Quality (CEQ) Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts at 12 (2014) (“NEPA analysis for a proposed open pit mine could include the reasonably</p> | |

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| | | <p>foreseeable effects of various components of the mining process, such as clearing land for the extraction, building access roads, transporting the extracted resource, refining or processing the resource, and using the resource.” [emphasis added]).</p> <p>The EA’s failure to quantify reasonably foreseeable GHG emissions that could result from new leasing within the HPD areas for lease—including emissions from construction, operating fossil-fuel powered equipment during production, reclamation, transportation, processing and refining, and combustion of the extracted product—is unlawful and unsupported by evidence or reasoned analysis.</p> <p>2. Sources of Greenhouse Gases</p> <p>In performing a full analysis of climate impacts, BLM must consider all potential sources of greenhouse gas emissions (e.g. greenhouse gas emissions generated by transporting large amounts of water for fracking). BLM should also perform a full analysis of all gas emissions that contribute to climate change, including methane and carbon dioxide. The EIS should calculate the amount of greenhouse gas that will result on an annual basis from (1) each of the fossil fuels that can be developed within the planning area, (2) each of the well stimulation or other extraction methods that can be used, including, but not limited to, fracking, acidization, acid fracking, and gravel packing, and (3) cumulative greenhouse gas emissions expected over the long term (expressed in global warming potential of each greenhouse pollutant as well as CO2 equivalent), including emissions throughout the entire fossil fuel lifecycle discussed above.</p> <p>3. Effects of Increased Greenhouse Gas Emissions, Including the Social Cost of Carbon</p> <p>In addition to quantifying the total emissions that would result from the lease sale, an EIS should consider the environmental effects of these emissions, resulting from climate disruption’s ecological and social effects. Release of greenhouse gases (from extraction, leakage, and downstream combustion) is not merely a reasonably foreseeable consequence of fracking extraction, it is the necessary and intended consequence. CEQ and the courts have repeatedly cautioned federal agencies that they cannot ignore either climate change generally, or the combustion impacts of fossil fuel extraction in particular. The effects of cumulative greenhouse gas emissions will have far-reaching impacts on natural and social systems, but the EA fails to provide any meaningful analysis of the proposed action’s contribution to these effects.</p> <p>i. The effects of cumulative GHG emissions will inflict extraordinary harm to natural systems and communities</p> <p>As explained above, the Paris Agreement codified the international consensus that the climate crisis is an urgent threat to human societies and the planet, with the parties recognizing that:</p> <p>Climate change represents an urgent and potentially irreversible threat to human societies</p> | |

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| | | <p>and the planet and thus requires the widest possible cooperation by all countries, and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions (emphasis added).</p> <p>Numerous authoritative scientific assessments have established that climate change is causing grave harms to human society and natural systems, and these threats are becoming increasingly dangerous. The Intergovernmental Panel on Climate Change (IPCC), in its 2014 Fifth Assessment Report, stated that: “Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased” and that “[r]ecent climate changes have had widespread impacts on human and natural systems.”</p> <p>The 2014 Third National Climate Assessment, prepared by a panel of non-governmental experts and reviewed by the National Academy of Sciences and multiple federal agencies similarly stated that “That the planet has warmed is ‘unequivocal,’ and is corroborated though multiple lines of evidence, as is the conclusion that the causes are very likely human in origin” and “[i]mpacts related to climate change are already evident in many regions and are expected to become increasingly disruptive across the nation throughout this century and beyond.” The United States National Research Council similarly concluded that: “[c]limate change is occurring, is caused largely by human activities, and poses significant risks for—and in many cases is already affecting—a broad range of human and natural systems.”</p> <p>The IPCC and National Climate Assessment further decisively recognize the dominant role of fossil fuels in driving climate change:</p> <p>While scientists continue to refine projections of the future, observations unequivocally show that climate is changing and that the warming of the past 50 years is primarily due to human-induced emissions of heat-trapping gases. These emissions come mainly from burning coal, oil, and gas, with additional contributions from forest clearing and some agricultural practices.</p> <p>***</p> <p>CO2 emissions from fossil fuel combustion and industrial processes contributed about 78% to the total GHG emission increase between 1970 and 2010, with a contribution of similar percentage over the 2000–2010 period (high confidence).</p> <p>These impacts ultimately emanating from the extraction and combustion of fossil fuels are harming the United States in myriad ways, with the impacts certain to worsen over the coming decades absent deep reductions in domestic and global GHG emissions. EPA recognized these threats in its 2009 Final Endangerment Finding under Clean Air Act Section 202(a), concluding that greenhouse gases from fossil fuel combustion endanger public health and welfare: “the body of scientific evidence compellingly supports [the]</p> | |

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| | | <p>finding” that “greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare.” In finding that climate change endangers public health and welfare, EPA has acknowledged the overwhelming evidence of the documented and projected effects of climate change upon the nation:</p> <p>Effects on air quality: “The evidence concerning adverse air quality impacts provides strong and clear support for an endangerment finding. Increases in ambient ozone are expected to occur over broad areas of the country, and they are expected to increase serious adverse health effects in large population areas that are and may continue to be in nonattainment. The evaluation of the potential risks associated with increases in ozone in attainment areas also supports such a finding.”</p> <p>Effects on health from increased temperatures: “The impact on mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heat waves, also provides support for a public health endangerment finding.”</p> <p>Increased chance of extreme weather events: “The evidence concerning how human induced climate change may alter extreme weather events also clearly supports a finding of endangerment, given the serious adverse impacts that can result from such events and the increase in risk, even if small, of the occurrence and intensity of events such as hurricanes and floods. Additionally, public health is expected to be adversely affected by an increase in the severity of coastal storm events due to rising sea levels.”</p> <p>Impacts to water resources: “Water resources across large areas of the country are at serious risk from climate change, with effects on water supplies, water quality, and adverse effects from extreme events such as floods and droughts. Even areas of the country where an increase in water flow is projected could face water resource problems from the supply and water quality problems associated with temperature increases and precipitation variability, as well as the increased risk of serious adverse effects from extreme events, such as floods and drought. The severity of risks and impacts is likely to increase over time with accumulating greenhouse gas concentrations and associated temperature increases.”</p> <p>Impacts from sea level rise: “The most serious potential adverse effects are the increased risk of storm surge and flooding in coastal areas from sea level rise and more intense storms. Observed sea level rise is already increasing the risk of storm surge and flooding in some coastal areas. The conclusion in the assessment literature that there is the potential for hurricanes to become more intense (and even some evidence that Atlantic hurricanes have already become more intense) reinforces the judgment that coastal communities are now endangered by human-induced climate change, and may face substantially greater risk in the future. Even if there is a low probability of raising the destructive power of hurricanes, this threat is enough to support a finding that coastal communities are endangered by greenhouse gas air pollution. In addition, coastal areas face other adverse impacts from sea level rise such as land loss due to inundation, erosion, wetland submergence, and habitat loss. The increased risk associated with these</p> | |

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| | | <p>adverse impacts also endangers public welfare, with an increasing risk of greater adverse impacts in the future.”</p> <p>Impacts to energy, infrastructure, and settlements: “Changes in extreme weather events threaten energy, transportation, and water resource infrastructure. Vulnerabilities of industry, infrastructure, and settlements to climate change are generally greater in high-risk locations, particularly coastal and riverine areas, and areas whose economies are closely linked with climate-sensitive resources. Climate change will likely interact with and possibly exacerbate ongoing environmental change and environmental pressures in settlements, particularly in Alaska where indigenous communities are facing major environmental and cultural impacts on their historic lifestyles.”</p> <p>Impacts to wildlife: “Over the 21st century, changes in climate will cause some species to shift north and to higher elevations and fundamentally rearrange U.S. ecosystems. Differential capacities for range shifts and constraints from development, habitat fragmentation, invasive species, and broken ecological connections will likely alter ecosystem structure, function, and services, leading to predominantly negative consequences for biodiversity and the provision of ecosystem goods and services.”</p> <p>In addition to these acknowledged impacts on public health and welfare more generally, climate change is causing and will continue to cause serious impacts on natural resources that the Department of Interior is specifically charged with safeguarding.</p> <p>Impacts to Public Lands: Climate change is causing and will continue to cause specific impacts to public lands ecosystem services. Although public lands provide a variety of difficult-to-quantify public benefits, one recent Forest Service attempt at quantification estimates the public land ecosystem services at risk from climate change at between \$14.5 and \$36.1 billion annually. In addition to the general loss of ecosystem services, irreplaceable species and aesthetic and recreational treasures are at risk of permanent destruction. High temperatures are causing loss of glaciers in Glacier National Park; the Park’s glaciers are expected to disappear entirely by 2030, with ensuing warming of stream temperatures and adverse effects to aquatic ecosystems. With effects of warming more pronounced at higher latitudes, tundra ecosystems on Alaska public lands face serious declines, with potentially serious additional climate feedbacks from melting permafrost. In Florida, the Everglades face severe ecosystem disruption from already-occurring saltwater incursion. Sea level rise will further damage freshwater ecosystems and the endangered species that rely on them.</p> <p>Impacts to Biodiversity and Ecosystems: Across the United States ecosystems and biodiversity, including those on public lands, are directly under siege from climate change—leading to the loss of iconic species and landscapes, negative effects on food chains, disrupted migrations, and the degradation of whole ecosystems. Specifically, scientific evidence shows that climate change is already causing changes in distribution, phenology, physiology, genetics, species interactions, ecosystem services, demographic rates, and population viability: many animals and plants are moving poleward and</p> | |

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| | | <p>upward in elevation, shifting their timing of breeding and migration, and experiencing population declines and extirpations. Because climate change is occurring at an unprecedented pace with multiple synergistic impacts, climate change is predicted to result in catastrophic species losses during this century. For example, the IPCC concluded that 20% to 30% of plant and animal species will face an increased risk of extinction if global average temperature rise exceeds 1.5°C to 2.5°C relative to 1980-1999, with an increased risk of extinction for up to 70% of species worldwide if global average temperature exceeds 3.5°C relative to 1980-1999.</p> <p>In sum, climate change, driven primarily by the combustion of fossil fuels, poses a severe and immediate threat to the health, welfare, ecosystems and economy of the United States. These impacts are felt across the nation, including upon the public lands the Secretary of the Interior is charged with safeguarding. A rapid and deep reduction of emissions generated from fossil fuels is essential if such threats are to be minimized and their impacts mitigated.</p> <p>ii. The EA ignores the social cost of carbon tool to analyze the cumulative contribution of increased oil and gas development on climate change</p> <p>Although cost-benefit analysis is not necessarily the ideal or exclusive method for assessing contributions to an adverse effect as enormous, uncertain, and potentially catastrophic as climate change, BLM does have tools available to provide one approximation of external costs and has previously performed a “social cost of carbon” analysis in prior environmental reviews.²¹⁹ Its own internal memo identifies one available analytical tool: “For federal agencies the authoritative estimates of [social cost of carbon] are provided by the 2013 technical report of the Interagency Working Group on Social Cost of Carbon, which was convened by the Council of Economic Advisers and the Office of Management and Budget.” As explained in that report:</p> <p>The purpose of the “social cost of carbon” (SCC) estimates presented here is to allow agencies to incorporate the social benefits of reducing carbon dioxide (CO₂) emissions into cost-benefit analyses of regulatory actions that impact cumulative global emissions. The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services due to climate change.</p> <p>Leasing and development of unconventional wells could exact extraordinary financial costs to communities and future generations, setting aside the immeasurable loss of irreplaceable, natural values that can never be recovered. The EIS must provide an accounting of these potential costs.</p> <p>Development of the planning area’s oil and gas resources will fuel climate disruption and undercut the needed transition to a clean energy economy. Keeping fossil fuels in the ground is, therefore, not only reasonable but also imperative. As BLM has not yet had a</p> | |

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| | | <p>chance to consider a no-leasing-no-fracking alternative as part of the HPD RMP planning process, BLM should suspend new leasing until it properly considers this alternative in an updated RMP or in the EIS. BLM would be remiss to continue leasing when it has never stepped back and taken a hard look at this problem at the appropriate scale. Before allowing more oil and gas extraction in the planning area, BLM must: (1) comprehensively analyze the total greenhouse gas emissions which result from past, present, and potential future fossil fuel leasing and all other activities across all BLM lands and within the HPD planning area, (2) consider their cumulative significance in the context of global climate change, carbon budgets, and other greenhouse gas pollution sources outside BLM lands and the planning area, and (3) formulate measures that avoid or limit their climate change effects. By continuing leasing in the absence of any overall plan addressing climate change BLM is effectively burying its head in the sand.</p> | |
| 15 | CBD | <p>D. BLM has Failed to Adequately Disclose or Analyze the Impacts to Sensitive Species of Plants and Wildlife</p> <p>a. Greater sage grouse</p> <p>The 2015 Wyoming RMP Amendments, including those applicable to the areas of the Casper and Newcastle Field Offices proposed for lease in this sale, do not conform to the best available science or the recommendations of BLM’s own experts regarding necessary measures to protect sage grouse habitats and prevent population declines. We hereby incorporate by reference the June 27, 2015 protest of the Wyoming FEISs submitted by WildEarth Guardians, Prairie Hills Audubon Society, Western Watersheds Project, the Center for Biological Diversity, and the Sierra Club. As set forth in detail in that document, the Bighorn Basin RMP Amendments do not conform to the agency’s own expert determinations regarding management measures necessary to conserve greater sage-grouse populations in the face of oil and gas development.</p> | <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices, as those documents were amended by the Wyoming Greater Sage-Grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statement (May 2015), and the RMP/ROD approved on September 21, 2015. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development on wildlife, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>After careful review of the parcels, the BLM determined that it was appropriate to defer certain parcels nominated for inclusion in the August 2016 oil and gas lease sale. These deferrals were made consistent with the BLM’s sage-grouse conservation plans and strategy, which direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs. The parcels remain eligible for leasing consideration in the future.</p> |
| 16 | CBD | <p>b. Other sensitive species</p> <p>The expansion of oil and gas development activities will harm wildlife through habitat destruction and fragmentation, stress and displacement caused by development-related activities (e.g., construction and operation activities, truck traffic, noise and light pollution), surface water depletion leading to low stream flows, water and air contamination, introduction of invasive species, and climate change. These harms can result in negative health effects and population declines. Studies and reports of observed impacts to wildlife from unconventional oil and gas extraction activities are summarized in the Center’s “Review of Impacts of Oil and Gas Exploration and Development on Wildlife,” submitted herewith. Because the allowance of destructive oil and gas</p> | <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>Wildlife resources are discussed in Sections 3.3.9 and 4.3.5 of the EA. The BLM manages a variety of habitats that possess the</p> |

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| | | <p>extraction runs contrary to BLM’s policy of managing resources in a manner that will protect the quality of ecological values and provide habitat for wildlife, a no-fracking alternative minimizing industrial development and its harmful effects on wildlife must be considered.</p> <p>Although several threatened and endangered and BLM Sensitive Species are identified in the PEA, it does not include site-specific analysis of any potential impacts from oil and gas development on wildlife resources. The reason for this is apparently reduced to BLM’s unsupported statement that, “[t]he current RMPs have evaluated the need to protect habitat necessary for the success of species identified through applicable laws, regulations and policies” BLM is required under federal regulations to provide an analysis of the nature, intensity, and extent of potential impacts, along with supporting science and data; and further, BLM must consider the many effects that fracking in particular, and other unconventional methods, may have on these species. BLM has an obligation to analyze and discuss those impacts now at the leasing stage. Therefore, an EIS must be prepared to analyze the following issues.</p> <p>i. Habitat Loss</p> <p>Oil and gas development creates a network of well pads, roads, pipelines, and other infrastructure that lead to direct habitat loss and fragmentation, as well as displacement of wildlife from these areas due to increased human disturbance. Habitat loss occurs as a result of a reduction in the total area of the habitat, the decrease of the interior-to-edge ratio, isolation of one habitat fragment from another, breaking up of one habitat into several smaller patches of habitat, and decreasing the average size of a habitat patch.</p> <p>The indirect effects from unconventional oil and gas development can often be far greater than the direct disturbances to habitat. The impacts from the well site—including noise, light, and pollution—extend beyond the borders of the operation site and will consequently render even greater areas uninhabitable for some wildlife. Species dependent on having an “interior” habitat will lose their habitat as operation sites or other infrastructure fragment previously buffered and secluded areas. These and other indirect effects can be far greater than the direct disturbances to land. In the Marcellus shale of Pennsylvania, for instance, research shows that 8.8 acres of forest on average are cleared for each drilling pad along with associated infrastructure, but after accounting for ecological edge effects, each drilling station actually affected 30 acres of forest.</p> <p>While individual well sites may cause some disturbance and destruction, the cumulative impacts of oil and gas production using unconventional methods must receive attention as well. While the actual well pads may only occupy a small proportion of a particular habitat, their impact can be much greater when their aggregate impact is considered. As discussed above, interior habitats will be destroyed by removing the buffer between the interior habitat and the operation site. For example, one study found that grassland bird species’ habitat have been degraded by oil development in the Baaken shale region, as evidenced by their avoidance of these areas. Grassland birds avoided areas within 150</p> | <p>biological and physical attributes important in the life-cycles of many wildlife species. The diversity of habitats and landscapes provide important areas for breeding, birthing, foraging, wintering, and migration. Indirect effects from leasing may occur to the habitat if development were to occur. At the time of a site-specific application, such as an APD, fish and wildlife resources will be identified and conditions of approval to mitigate adverse impacts may be imposed at that time.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and EA WY-070-EA16-66 has adequately analyzed the issues raised by this comment. Site-specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM WO-2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>In accordance with H-1624-1 – Planning For Fluid Mineral Resources (Rel. 1-1749, 1/28/2013): The Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2; Yates Petroleum Corporation, 176 IBLA 144 (2008); National Wildlife Federation, 169 IBLA 146, 164 (2006).</p> |

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| | | meters of roads, 267 meters of single-bore well pads, and 150 meters of multi-bore well pads. In areas of dense development, these habitat effects are greatly multiplied for sensitive species, such as the Sprague's pipit (<i>Anthus spragueii</i>), which avoided areas within 350 meters of single-bore well pads. The EIS must quantify the potential cumulative loss of habitat for sensitive species. | |
| 17 | CBD | <p>ii. Water Depletion</p> <p>Water depletion affects even those species whose habitats are far removed from the actual well site. The PEA does not analyze the foreseeable cumulative water depletions likely to jeopardize the continued existence of the special status aquatic wildlife. Hydraulic fracturing, for example, requires water volumes that far exceed the amounts used in conventional natural gas development. Indeed BLM admits that “In general, approximately 50,000 to 300,000 gallons² may be used to fracture shallow coalbed methane wells in the Powder River Basin, while approximately 800,000 to 2 million gallons may be used to fracture deep tight sand gas wells in southwestern WY. In the Niobrara oil play, approximately 250,000 gallons may be used to fracture a vertical well, while up to 5 million gallons may be used to fracture a horizontal well.”</p> <p>Yet BLM continues to claim throughout the PEA that it cannot analyze any direct or indirect effects on the environment until the APD stage. High-volume fracking or “massive frac” requiring millions of gallons of water may even be performed on vertical wells and directional non-horizontal wells in the HPD.</p> <p>Because of the high volume of water required for even a single well that uses unconventional extraction methods, the cumulative water depletion has a significant impact on the endangered species dependent upon water sources that serve to supply oil and gas operations. In addition, water depletion adversely impacts water temperature and chemistry, as well as amplifies the effects of harmful pollutants on wildlife that would otherwise be diluted without the depletion.</p> <p>BLM must complete formal consultation regarding the potential water depletions from this lease sale. The required reinitiation of formal consultation arises “where discretionary Federal involvement or control over the action has been retained or is authorized by law and...[i]f new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.” 50 CFR § 402.16(b). New information reveals that horizontal drilling, hydraulic fracturing, and other related infrastructure projects in the HPD planning area will require water depletions to an extent not previously considered. Before leasing these lands, BLM must formally consult or reinitiate formal consultation regarding the lease sale’s water depletion effects on threatened, endangered, or sensitive aquatic wildlife.</p> <p>iii. Contamination from Wastewater</p> <p>BLM also erroneously failed to complete formal consultation with USFWS regarding the heightened risk of spills and leaks that the lease sale poses to endangered fish and their</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to water depletion or sensitive species dependent on water through the administrative action of leasing. Indirect effects from leasing may occur to water if development were to occur. At the time of a site-specific application, such as an APD, surface and subsurface water resources, including special status species, will be identified, evaluated, and conditions of approval to mitigate adverse impacts to the water related resources may be imposed at that time.</p> <p>Section 3.3.7 of the EA discusses water resources and Section 3.3.9. discusses wildlife resources, including special status species. All parcels were reviewed and no RMP based stipulations protecting water resources were applicable to the lease sale parcels. specino water e were identified as having areas containing special status species.</p> <p>Parcels offered for lease sale are subject to the parcel specific stipulations shown in Appendix C to EA WY-070-EA16-66, which are derived from the RMPs, as well as protections under Lease Notices and Lease Stipulations applicable to each lease sale parcel.</p> <p>No parcels were nominated in the August 2016 lease sale affecting sole source aquifers or public water supply areas in the HPD.</p> |

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| | | <p>habitat in the surrounding rivers. These leaks and spills will pollute nearby streams, rivers, and stream-connected groundwater, exposing endangered fish to toxic pollutants and degrading their habitat. BLM must therefore complete formal consultation regarding the increased risk of spills and leaks from oil and gas development on the endangered fish.</p> <p>Accidental spills and leaks are foreseeable and likely to increase with the development of the lease. Accidental spills or intentional dumping of wastewater contaminate surface water and cause large-scale harm to wildlife. Numerous incidents of wastewater contamination from pipelines, equipment blowouts, and truck accidents have been reported, and have resulted in kills of fish, aquatic invertebrates, and trees and shrubs, as well as negative health effects for wildlife and domestic animals. Contamination incidents that have occurred actually demonstrate that wildlife harm from contamination is a real, not just theoretical, impact that must be considered. In 2013, a company admitted to dumping wastewater from fracking operations into the Acorn Fork Creek in Kentucky, causing a massive fish kill. Among the species harmed was the blackside dace, a threatened minnow species. An analysis of water quality of Acorn Creek and fish tissues taken shortly after the incident was exposed showed the fish displayed general signs of stress and had a higher rate of gill lesions, than fish in areas not affected by the dumping. The discharge of fracking wastewater into the Susquehanna River in Pennsylvania is suspected to be the cause of fish abnormalities, including high rates of spots, lesions, and intersex. In West Virginia, the permitted application of hydrofracturing fluid to an area of mixed hardwood forest caused extensive tree mortality and a 50-fold increase in surface soil concentrations of sodium and chloride.</p> <p>BLM's EA also fails to take into account the unprecedented sheer volume of chemicals and wastewaters that will be generated by increased hydraulic fracturing in the HPD. Millions of pounds of fracking chemicals will be transported to the HPD planning area, injected into the ground, and either reinjected underground or transported offsite for disposal.</p> <p>In addition, open air pits that store waste fluid pose risks for wildlife that may come into contact with the chemicals stored in the pits. Already, there have been several documented cases of animal mortality resulting from contact with pits. A field inspection of open pits in Wyoming found 269 bird carcasses, the likely cause of death being exposure to toxic chemicals stored in the open pits. Open pits can also serve as breeding grounds for mosquitoes, which serve as a vector for West Nile virus, a threat to humans and animals alike. In Wyoming, an increase of ponds led to an increase of West Nile virus among greater sage-grouse populations. Recently, new information has come to light that operators in California have been dumping wastewater into hundreds of unpermitted open pits. The EIS must take into account the impact of both unpermitted, illegal waste pits as well as those that are regulated.</p> <p>Contaminants from spills not only directly harm species exposed to these contaminants but can enter the food chain and harm predators. A recent study found that in watersheds</p> | |

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| | | <p>where hydraulic fracturing occurs, a top predator, riparian songbird in headwater systems, the Louisiana Waterthrush (<i>Parkesia motacilla</i>), accumulated metals associated with the fracking process. “In both the Marcellus and Fayetteville shale regions, barium and strontium were found at significantly higher levels in feathers of birds in sites with fracking activity than at sites without fracking.” While the study did not resolve the pathway for these metals entering the food chain, their findings suggested that “hydraulic fracturing may be contaminating surface waters and underscores the need for additional monitoring and study to further assess ecological and human health risks posed by the increasingly widespread development of unconventional sources of natural gas around the world.”</p> <p>iv. Invasive Species</p> <p>Invasive species may be introduced through a variety of pathways that would be increasingly common if oil and gas activity is allowed to expand. Machinery, equipment, and trucks moved from site to site can carry invasive plant species to new areas. In addition, materials such as crushed stone or gravel transported to the site from other locations may serve as a conduit for invasive species to migrate to the well site or other areas en route.</p> <p>Aquatic invasive species may also spread more easily given the large amounts of freshwater that must be transported to accommodate new drilling and extraction techniques. These species may be inadvertently introduced to new habitats when water is discharged at the surface. Alternatively, hoses, trucks, tanks, and other water use equipment may function as conduits for aquatic invasive species to access new habitats.</p> | |
| 19 | CBD | <p>v. Climate Change</p> <p>Anthropogenic climate change poses a significant threat to biodiversity. Climate disruption is already causing changes in distribution, phenology, physiology, genetics, species interactions, ecosystem services, demographic rates, and population viability: many animals and plants are moving poleward and upward in elevation, shifting their timing of breeding and migration, and experiencing population declines and extinctions. Because climate change is occurring at an unprecedented pace with multiple synergistic impacts, climate change is predicted to significantly increase extinction risk for many species. The IPCC concludes that it is extremely likely that climate change at or above 4°C will result in substantial species extinction. Other studies have predicted similarly severe losses: 15-37 percent of the world’s plants and animals committed to extinction by 2050 under a mid-level emissions scenario; the extinction of 10 to 14 percent of species by 2100 if climate change continues unabated. Another recent study predicts the loss of more than half of the present climatic range for 58 percent of plants and 35 percent of animals by the 2080s under the current emissions pathway, in a sample of 48,786 species. Because expansion of oil and gas production in the planning area will substantially increase the emissions of greenhouse gases, this activity will further contribute to the harms from climate change to wildlife and ecosystems.</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality or climate change will be analyzed through additional site-specific NEPA analysis, and conformance with state and Federal air quality standards and regulations will be evaluated. As new information is gathered, it will be incorporated into BLM decisions and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p> <p>A discussion of Air Quality and Climate Change are addressed in the EA in part 3.3.1.</p> |
| 20 | CBD | vi. Population Impacts | As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 |

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| | | <p>Oil and gas development has been linked to population-level impacts on wildlife, including lower reproductive success of sage grouse and declines in the abundance of songbirds and aquatic species. For example, young greater-sage grouse avoided mating near infrastructure of natural-gas fields, and those that were reared near infrastructure had lower annual survival rates and were less successful at establishing breeding territories compared to those reared away from infrastructure. In Wyoming, an increasing density of wells was associated with decreased numbers of Brewer’s sparrows, sage sparrows, and vesper sparrows. In the Fayetteville Shale of central Arkansas, the proportional abundance of sensitive aquatic taxa, including darters, was negatively correlated with gas well density. The EIS must consider the population-level impacts that oil and gas development may have on wildlife in the HPD planning area.</p> <p>vii. Metrics</p> <p>BLM should conduct a full assessment of the direct and indirect impacts of unconventional oil and gas development activities on wildlife and ecosystems through a suite of comprehensive studies on all species and ecosystems that could be affected. The studies should be particularly detailed for federally and state listed species, federal and state candidates for listing, and state species of special concern. The studies should address the following impacts: (1) habitat loss, degradation, and fragmentation, including edge effects; (2) water depletion; (3) air and water contamination; (4) introduction of invasive species; (5) climate change impacts; (6) health and behavioral effects such as increased stress and changes in life history behaviors; (7) changes in demographic rates such as reproductive success and survival; and (8) potential for population-level impacts such as declines and extirpations. These studies should consider these harms individually and cumulatively</p> | <p>CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5, and EA WY-070-EA16-66 has adequately analyzed the issues raised by this comment. Site-specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> |
| 21 | CBD | <p>E. BLM has Failed to Adequately Disclose or Analyze the Human Health and Safety Risks Posed by Unconventional Extraction Techniques</p> <p>Ample scientific evidence indicates that well development and well stimulation activities have been linked to an array of adverse human health effects, including carcinogenic, developmental, reproductive, and endocrine disruption effects. This is all the more alarming when considering how close wells may be developed to schools, residences, and businesses in Wyoming. Just as troubling, is how much is unknown about the chemicals used in well stimulation activities. The potential human health dangers and the precautionary principle should further compel BLM to consider not allowing further development of oil and gas minerals in the areas for lease. In comparing the no-leasing and no-fracking alternatives to leasing and continued unconventional well development scenarios, the EIS should include a health impact assessment, or equivalent, of the aggregate impact that unconventional extraction techniques, including fracking, will have on human health and nearby communities.</p> <p>Due to the heavy and frequent use of chemicals, proximity to fracked wells is associated with higher rates of cancer, birth defects, poor infant health, and acute health effects for</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause hydraulic fracturing and/or horizontal drilling to occur.</p> <p>Issuance of an oil and gas lease does not authorize operations on the lease. The possibility or nature of lease development operations cannot be reasonably determined at the leasing stage, nor can impacts realistically be analyzed in more detail at this time. If a lease is issued and development proposed, additional permits will be submitted to the BLM and analyzed in a site-specific NEPA document, which will address resource concerns.</p> |

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| | | <p data-bbox="321 131 909 159">nearby residents who must endure long-term exposure:</p> <ul style="list-style-type: none"> <li data-bbox="321 191 1268 280">□ In one study, residents living within one-half mile of a fracked well were significantly more likely to develop cancer than those who live more than one-half mile away, with exposure to benzene being the most significant risk. <li data-bbox="321 313 1268 467">□ Another study found that pregnant women living within 10 miles of a fracked well were more likely to bear children with congenital heart defects and possibly neural tube defects. A separate study independently found the same pattern; infants born near fracked gas wells had more health problems than infants born near sites that had not yet conducted fracking. <li data-bbox="321 500 1268 735">□ A study analyzed Pennsylvania birth records from 2004 to 2011 to assess the health of infants born within a 2.5-kilometer radius of natural-gas fracking sites. They found that proximity to fracking increased the likelihood of low birth weight by more than half, from about 5.6 percent to more than 9 percent. The chances of a low Apgar score, a summary measure of the health of newborn children, roughly doubled, to more than 5 percent. Another recent Pennsylvania study found a correlation between proximity to unconventional gas drilling and higher incidence of lower birth weight and small-for-gestational-age babies. <li data-bbox="321 768 1268 1044">□ A recent study found increased rates of cardiology-patient hospitalizations in zip codes with greater number of unconventional oil and gas wells and higher well density in Pennsylvania. The results suggested that if a zip code went from having zero wells to well density greater than 0.79 wells/km², the number of cardiology-patient hospitalizations per 100 people (or “cardiology inpatient prevalence rate”) in that zip code would increase by 27%. If a zip code went from having zero wells to a well density of 0.17 to 0.79 wells/km², a 14% increase in cardiology inpatient prevalence rates would be expected. Further, higher rates of neurology-patient hospitalizations were correlated with zip codes with higher well density. <li data-bbox="321 1076 1268 1166">□ Recently published reports indicate that people living in proximity to fracked gas wells commonly report skin rashes and irritation, nausea or vomiting, headache, dizziness, eye irritation and throat irritation. <li data-bbox="321 1198 1268 1377">□ In Texas, a jury awarded nearly \$3 million to a family who lived near a well that was hydraulically fractured. The family complained that they experienced migraines, rashes, dizziness, nausea and chronic nosebleeds. Medical tests showed one of the plaintiffs had more than 20 toxic chemicals in her bloodstream. Air samples around their home also showed the presence of BTEX — benzene, toluene, ethylbenzene and xylene — colorless but toxic chemicals typically found in petroleum products. <p data-bbox="321 1409 1268 1498">Chemicals used for fracking also put nearby residents at risk of endocrine disruption effects. A study that sampled water near active wells and known spill sites in Garfield, County Colorado found alarming levels of estrogenic, antiestrogenic, androgenic, and</p> | |

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| | | <p>antiandrogenic activities, indicating that endocrine system disrupting chemicals (EDC) threaten to contaminate surface and groundwater sources for nearby residents. The study concluded:</p> <p>[M]ost water samples from sites with known drilling-related incidents in a drilling-dense region of Colorado exhibited more estrogenic, antiestrogenic, and/or antiandrogenic activities than the water samples collected from reference sites[,] and 12 chemicals used in drilling operations exhibited similar activities. Taken together, the following support an association between natural gas drilling operations and EDC activity in surface and ground water: [1] hormonal activities in Garfield County spill sites and the Colorado River are higher than those in reference sites in Garfield County and in Missouri, [2] selected drilling chemicals displayed activities similar to those measured in water samples collected from a drilling-dense region, [3] several of these chemicals and similar compounds were detected by other researchers at our sample collection sites, and [4] known spills of natural gas fluids occurred at these spill sites.</p> <p>The study also noted a linkage between EDCs and “negative health outcomes in laboratory animals, wildlife, and humans”:</p> <p>Despite an understanding of adverse health outcomes associated with exposure to EDCs, research on the potential health implications of exposure to chemicals used in hydraulic fracturing is lacking. Bamberger and Oswald (26) analyzed the health consequences associated with exposure to chemicals used in natural gas operations and found respiratory, gastrointestinal, dermatologic, neurologic, immunologic, endocrine, reproductive, and other negative health outcomes in humans, pets, livestock, and wildlife species.</p> <p>Of note, site 4 in the current study was used as a small-scale ranch before the produced water spill in 2004. This use had to be discontinued because the animals no longer produced live offspring, perhaps because of the high antiestrogenic activity observed at this site. There is evidence that hydraulic fracturing fluids are associated with negative health outcomes, and there is a critical need to quickly and thoroughly evaluate the overall human and environmental health impact of this process. It should be noted that although this study focused on only estrogen and androgen receptors, there is a need for evaluation of other hormone receptor activities to provide a more complete endocrine-disrupting profile associated with natural gas drilling.</p> <p>Operational accidents also pose a significant threat to public health. For example in August 2008, Newsweek reported that an employee of an energy-services company got caught in a fracking fluid spill and was taken to the emergency room, complaining of nausea and headaches.²⁶⁸ The fracking fluid was so toxic that it ended up harming not only the worker, but also the emergency room nurse who treated him. Several days later, after she began vomiting and retaining fluid, her skin turned yellow and she was diagnosed with chemical poisoning.</p> | |

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| | | <p>Harmful chemicals are also found in the flowback fluid after well stimulation events. Flowback fluid is a key component of oil-industry wastewater from stimulated wells. A survey of chemical analyses of flowback fluid dating back to April 2014 in California revealed that concentrations of benzene, a known carcinogen, were detected at levels over 1,500 times the federal limits for drinking water. Of the 329 available tests that measured for benzene, the chemical was detected at levels in excess of federal limits in 320 tests (97 percent). On average, benzene levels were around 700 times the federal limit for drinking water. Among other carcinogenic or otherwise dangerous chemicals found in flowback fluid from fracked wells are toluene and chromium-6. These hazardous substances were detected in excess of federal limits for drinking water in over one hundred tests. This dangerous fluid is commonly disposed of in injection wells, which often feed into aquifers, including some that could be used for drinking water and irrigation.</p> <p>Acidizing presents similarly alarming risks to public health and safety. In acidizing operations, large volumes of hydrochloric and hydrofluoric acid are transported to the site and injected underground. These chemicals are highly dangerous due to their corrosive properties and ability to trigger tissue corrosion and damage to sensory organs through contact.</p> <p>While many risks are known, much more is unknown about the hundreds of chemicals used in fracking. The identity and effects of many of these additives is unknown, due to operators' claims of confidential business information. But, as the EPA recognizes, chemical identities are "necessary to understand their chemical, physical, and toxicological properties, which determine how they might move through the environment to drinking water resources and any resulting effects." Compounds in mixtures can have synergistic or antagonistic effects, but again, it is impossible to know these effects without full disclosure.²⁷⁵ The lack of this information also precludes effective remediation: "Knowing their identities would also help inform what chemicals to test for in the event of suspected drinking water impacts and, in the case of wastewater, may help predict whether current treatment systems are effective at removing them."</p> <p>Even where chemical identities are known, chemical safety data may be limited. In EPA's study of the hazards of fracking chemicals to drinking water, EPA found that "[o]ral reference values and oral slope factors meeting the criteria used in this assessment were not available for the majority of chemicals used in hydraulic fracturing fluids [87%], representing a significant data gap for hazard identification." Without this data, EPA could not adequately assess potential impacts on drinking water resources and human health. Further, of 1,076 hydraulic fracturing fluid chemicals identified by the EPA, 623 did not have estimated physiochemical properties reported in EPA's toxics database, although this information is "essential to predicting how and where it will travel in the environment." The data gaps are actually much larger, because EPA excluded 35% of fracking chemicals reported to FracFocus from its analysis because it could not assign them standardized chemical names.</p> | |

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| | | <p>The EIS should incorporate a literature review of the harmful effects of each of the chemicals known to be used in fracking and other unconventional oil and gas extraction methods. Without knowing the effects of each chemical, the EIS cannot accurately project the true impact of unconventional oil and gas extraction.</p> <p>The EIS should also study the human health and safety impacts of noise pollution, light pollution, and traffic accidents resulting from oil and gas development. A recent study found that automobile and truck accident rates in counties in Pennsylvania with heavy unconventional oil and gas extraction activity were between 15 and 65 percent higher than accident rates in counties without unconventional oil and gas extraction activities. Rates of traffic fatalities and major injuries may be higher in areas with heavy drilling activity than areas without.</p> | |
| 22 | CBD | <p>F. BLM has Failed to Adequately Disclose or Analyze the Seismic Risks Posed by Unconventional Extraction Techniques and Underground Water Disposal within the Proposed Sale Area</p> <p>BLM denies in its PEA that the process of hydraulic fracturing a well poses a high risk for induced seismicity, even though it simultaneously admits that “seismic events caused by or likely related to energy development have been measured and felt in Alabama, Arkansas, California, Colorado, Illinois, Louisiana, Mississippi, Nebraska, Nevada, New Mexico, Ohio, Oklahoma, and Texas.” BLM brushes off its obligation to analyze the issue by characterizing the numerous seismic events induced by oil and gas development as “a very small fraction.”</p> <p>BLM then, once again, claims that the potential for induced seismicity cannot be made at the leasing stage and therefore excuses itself from performing the required analysis.</p> <p>When hydraulic fracking is done, a process commonly used by operators to dispose of waste fluids—underground injection—has been associated with earthquakes in several locations. Research has shown that in regions of the central and eastern United States where unconventional oil and gas development has proliferated in recent years, earthquake activity has increased dramatically. More than 300 earthquakes with magnitude (M) ≥ 3 occurred between 2010 through 2012, compared with an average of 21 per year between 1967 and 2000. Moreover, although earthquakes with magnitude (M) ≥ 5.0 are very uncommon east of the Rocky Mountains, the number per year recorded in the midcontinent increased 11-fold between 2008 and 2011, compared to 1976 to 2007. Mid-continent states experiencing elevated levels of seismic activity include Arkansas, Colorado, New Mexico, Ohio, Oklahoma, Texas, and Virginia. Research has linked much of the increased earthquake activity and several of the largest earthquakes in the U.S. midcontinent in recent years to the disposal of wastewater into deep injection wells, which is well-established to pose a significant seismic risk. Much of the fracking wastewater is a byproduct of oil and gas production and is routinely disposed of by injection into wells specifically designed and approved for this purpose. The injected fluids push stable faults past their tipping points, and thereby induce earthquakes. In 2015, a study published in Science found that, the unprecedented</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause seismic risks to occur.</p> <p>Issuance of an oil and gas lease does not authorize operations on the lease. The possibility or nature of lease development operations cannot be reasonably determined at the leasing stage, nor can impacts realistically be analyzed in more detail at this time. If a lease is issued and development proposed, additional permits will be submitted to the BLM and analyzed in a site-specific NEPA document, which will address resource concerns.</p> |

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| | | <p>increase in earthquakes in the U.S. mid-continent began in 2009 has been caused solely by the instability caused by fluid injection wells associated with fracking waste disposal. To put an exclamation point on this finding, a 4.7 magnitude earthquake struck northern Oklahoma that was felt in 7 additional states, leading the Oklahoma Geological Survey to reiterate the connection between disposal wells and earthquakes and to shut down the most high risk wells.</p> <p>Earthquakes at magnitudes (M) that are felt (M3 and M4) or destructive (M4 and M5) have been attributed to wastewater injection wells in at least five states - Arkansas, Colorado, Ohio, Oklahoma, and Texas. The largest of these was a M5.7 earthquake in Prague, Oklahoma, which was the biggest in the state's history, destroying 14 homes and injuring two people.</p> <p>Other large earthquakes attributed to wastewater injection include an M5.3 in Colorado, M4.9 in Texas, M4.7 in Arkansas, and M3.9 in Ohio.</p> <p>The proliferation of unconventional oil and gas development, including increases in extraction and injection, will increase earthquake risk in Wyoming. Accordingly, the EIS must fully assess the risk of induced seismicity cause by all unconventional oil and gas extraction and injection activities, including wastewater injection wells.</p> <p>The analysis should assess the following issues based on guidance from the scientific literature, the National Research Council,298 and the Department of Energy299:</p> <p>(1) whether existing oil and gas wells and wastewater injection wells in the area for lease have induced seismic activity, using earthquake catalogs (which provide an inventory of earthquakes of differing magnitudes) and fluid extraction and injection data collected by industry;</p> <p>(2) the region's fault environment by identifying and characterizing all faults in these areas based on sources including but not limited to the USGS Quaternary Fault and Fold database. In its analysis, BLM should assess its ability to identify all faults in these areas, including strike-slip faults and deep faults that can be difficult to detect;</p> <p>(3) the background seismicity of oil- and gas-bearing lands including the history of earthquake size and frequency, fault structure (including orientation of faults), seismicity rates, failure mechanisms, and state of stress of faults;</p> <p>(4) the geology of oil- and gas-bearing lands including pore pressure, formation permeability, and hydrological connectivity to deeper faults;</p> <p>(5) the hazards to human communities and infrastructure from induced seismic activity; and</p> <p>(6) the current state of knowledge on important questions related to the risk and hazards</p> | |

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| | | <p>of induced seismicity from oil and gas development activities, including:</p> <p>(a) how the distance from a well to a fault affects seismic risk (i.e., locating wells in close proximity to faults can increase the risk of inducing earthquakes);</p> <p>(b) how fluid injection and extraction volumes, rates, and pressures affect seismic risk;</p> <p>(c) how the density of wells affects seismic risk (i.e., a greater density of wells affects a greater volume of the subsurface and potentially contacts more areas of a single fault or a greater number of faults);</p> <p>(d) the time period following the initiation of injection or extraction activities over which earthquakes can be induced (i.e., studies indicate that induced seismicity often occurs within months of initiation of extraction or injection although there are cases demonstrating multi-year delays);</p> <p>(e) how stopping extraction or injection activities affects induced seismicity (i.e., can induced seismicity be turned off by stopping extraction and injection and over what period, since studies indicate that there are often delays—sometimes more than a year—between the termination of extraction and injection activities and the cessation of induced earthquake activity);</p> <p>(f) the largest earthquake that could be induced by unconventional oil and gas development activities in areas for lease, including earthquakes caused by wastewater injection; and</p> <p>(g) whether active and abandoned wells are safe from damage from earthquake activity over the short and long-term.</p> | |
| 23 | CBD | <p>G. BLM has Failed to Adequately Disclose or Analyze the Impacts to Land Use by Fossil Fuel Development</p> <p>Increased oil and gas extraction and production have the potential to dramatically and permanently change the landscape of the High Plains District. Countless acres of land will likely be leveled to allow for the construction and operation of well pads and related facilities such as wastewater pits. Roads may have to be constructed or expanded to accommodate trucks transporting chemicals and the large quantities of water needed for some recovery methods. Transmission lines and other utilities may also be required. The need for new distribution, refining, or waste treatment facilities will expand industrial land use. With new roads and other industrial infrastructure, certain areas could open up to new industrial or extractive activities, permanently changing the character and use of the land.</p> <p>Such changes would result in a significant cumulative losses of agricultural and conservation lands. Vegetation removal by oil and gas development across central North America between 2000 and 2012 is estimated to be 4.5 tetragrams of carbon or 10</p> | <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause development or degradation of the lands. All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5, and EA WY-070-EA16-66 has adequately analyzed the issues raised by this comment. Site-specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>The Mineral Leasing Act of 1920, as amended [30 U.S.C. § 181 et seq.], and the Mineral Leasing Act for Acquired Lands of 1947, as amended [30 U.S.C. § 351 et seq.], give the BLM responsibility for oil and gas leasing on about 564 million acres of BLM, national forest, and other federal lands, as well as State</p> |

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| | | <p>tetragrams of dry biomass. This is equivalent to more than half of annual available grazing on public lands managed by BLM or 6% of the wheat produced in 2013 within the region (120.2 million bushels of wheat). This loss of “net primary production” (amount of carbon fixed by plants and accumulated as biomass) is “likely long-lasting and potentially permanent, as recovery or reclamation of previously drilled land has not kept pace with accelerated drilling.” The total surface disturbance by oil and gas development within this time period is 3 million hectares, the equivalent of three Yellowstone National Parks. As noted above, the fragmented nature of this surface disturbance negatively impacts wildlife by severing migratory pathways, altering wildlife behavior and mortality, and increasing susceptibility to ecologically disruptive species.</p> <p>The conversion of substantial acreages from rural or natural landscapes to industrial sites will also mar scenic views throughout the planning area. Given BLM’s failure to ensure full reclamation of idle wells and the difficulty of restoring sites to their original condition, scenic resources may be permanently impaired</p> | <p>and private surface lands where mineral rights have been retained by the federal government. The BLM works to ensure that mineral resources are developed in an environmentally responsible manner.</p> <p>Consistent with IM WO-2004-110, Change 1, more extensive/expansive/restrictive mitigation, including adaptive management, could be developed during the site-specific NEPA analysis that would be required to address any specific post-lease exploration or development actions that are proposed.</p> |
| 24 | CBD | <p>H. BLM Must Prepare an Environmental Impact Statement</p> <p>NEPA demands that a federal agency prepare an EIS before taking a “‘major [f]ederal action[] significantly affecting the quality’ of the environment.” Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1067 (9th Cir. 2002). In order to determine whether a project’s impacts may be “significant,” an agency may first prepare an Environmental Assessment (“EA”). 40 C.F.R. §§ 1501.4, 1508.9.</p> <p>If an “EA establishes that the agency’s action may have a significant effect upon the . . . environment,” an EIS must be prepared. Nat’l Parks & Conservation Ass’n, 241 F.3d at 730 (emphasis in original; internal quotations omitted); see also Hells Canyon Preservation Council v. Jacoby, 9 F. Supp. 2d 1216, 1232 (D. Or. 1998) (a “plaintiff need not show that significant effects will in fact occur, but if the plaintiff raises substantial questions whether a project may have a significant effect, an EIS must be prepared”). If the agency determines that no significant impacts are possible, it must still adequately explain its decision by supplying a “convincing statement of reasons” why the action’s effects are insignificant. Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998). Further, an agency must prepare all environmental analyses required by NEPA at “the earliest possible time.” 40 C.F.R. § 1501.2. “NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment,” but is “designed to require such analysis as soon as it can reasonably be done.” Kern, 284 F.3d at 1072.</p> <p>BLM is therefore required under NEPA to prepare an EIS to support this proposed project. This is especially true in light of the potential for fracking to occur on the leases. CBD, 937 F. Supp. 2d 1140 (holding that oil and gas leases were issued in violation of NEPA where BLM failed to prepare an EIS and failed to properly address the significance factors for context and intensity in 40 C.F.R. § 1508.27).</p> <p>In considering the potential for the lease sale to result in significant effects on the</p> | <p>As stated in Section 1.4 of EA WY-070-EA16-66, pursuant to 40 CFR 1508.28 and 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary. These EIS documents analyzed the effects of oil and gas leasing and development, and the specific management goals, plans and monitoring actions are addressed in the RMPs.</p> <p>If the analysis in an EA shows the action would not have a significant effect, a “Finding of No Significant Impact” (FONSI) documents that there is no need for an EIS (40 CFR 1508.13). The HPD Environmental Impact Statements (EIS) and Resource Management Plans (RMP) for the Casper and Newcastle field offices have already evaluated potentially significant impacts arising from the BLM’s land use planning decisions, including lands available or unavailable for oil and gas leasing. Therefore, the BLM anticipates a “finding of no new significant impacts” (see 43 CFR § 46.140(c)).</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5. Site-specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> |

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| | | <p>environment, NEPA’s regulations require BLM to evaluate ten factors regarding the “intensity” of the impacts. 40 C.F.R. § 1508.27(b). The Ninth Circuit has held that the existence of any “one of these factors may be sufficient to require preparation of an EIS.” Ocean Advocates, 402 F.3d at 865; Nat’l Parks & Conservation Ass’n, 241 F.3d at 731. Several of these “significance factors” are implicated in the lease sale and clearly warrant the preparation of an EIS:</p> <p>The degree to which the effects on the quality of the human environment are likely to be highly controversial.</p> <p>The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.</p> <p>The degree to which the proposed action affects public health or safety.</p> <p>The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.</p> <p>40 C.F.R. § 1508.27(b)(4), (5), (2) & (9). See CBD, 937 F. Supp. 2d 1140 (holding that BLM failed properly address the significance factors regarding controversy and uncertainty that may have been resolved by further data collection (citing Native Ecosystems Council v. U.S. Forest Serv., 428 F.3d 1233, 1240 (9th Cir. 2005)). Here, individually and considered as a whole, there is no doubt that significant effects may result from the lease sale; thus, NEPA requires that BLM should have prepared an EIS for the action.</p> <p>1. The effects on the human environment will be highly controversial</p> <p>A proposal is highly controversial when “substantial questions are raised as to whether a project . . . may cause significant degradation” of a resource, Nw. Env’tl. Def. Ctr. v. Bonneville Power Admin., 117 F.3d 1520, 1536 (9th Cir. 1997), or when there is a “substantial dispute [about] the size, nature, or effect of the” action. Blue Mtns. Biodiversity, 161 F.3d at 1212. A “substantial dispute exists when evidence, raised prior to the preparation of [a] . . . FONSI, casts serious doubt upon the reasonableness of an agency’s conclusions.” Nat’l Parks & Conserv. Ass’n, 241 F.3d at 736. When such a doubt is raised, “NEPA then places the burden on the agency to come forward with a ‘well-reasoned explanation’ demonstrating why those responses disputing the EA’s conclusions ‘do not . . . create a public controversy.’” Id. See CBD, 937 F. Supp. 2d 1140.</p> <p>Here, the controversy regarding the lease sale is fully evident. This comment letter provides abundant evidence that oil and gas operations can cause significant impacts to human health, water resources, air quality, imperiled species, and seismicity. The potential for these significant impacts to occur is particularly clear in light of the</p> | |

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| | | <p data-bbox="321 131 852 159">potential for fracking to result from the lease sale.</p> <p data-bbox="321 191 1272 524">Fracking is among the top, if not the single most controversial energy issue facing America today. The controversy spans the public arena, scientific discourse, local governments, and the halls of Congress. At the request of Congress, EPA is conducting a study into the effects of fracking on drinking and ground water. Similarly, the New York Draft DEC concluded that the health and environmental risks from fracking supports it ban in New York State. In Nevada, several anti-fracking grassroots groups have emerged along with petitions to ban the practice in Nevada, which to date have garnered more than 3200 signatures. However, in addition to the presence of controversy, it is already evident, as discussed above, that fracking is harmful. Clearly, the level of controversy associated with fracking and its expansion in Nevada in association with the lease sale is sufficient to trigger the need for an EIS. 40 C.F.R. § 1508.27(b)(4).</p> <p data-bbox="321 557 963 584">2. The lease sale presents highly uncertain or unknown risks</p> <p data-bbox="321 617 1272 1044">An EIS must also be prepared when an action’s effects are “highly uncertain or involve unique or unknown risks.” 40 C.F.R. § 1508.27(b)(5). As the Ninth Circuit has held, “[p]reparation of an EIS is mandated where uncertainty may be resolved by further collection of data, or where the collection of such data may prevent speculation on potential . . . effects.” Native Ecosystems Council v. U.S. Forest Serv., 428 F.3d 1233, 1240 (9th Cir. 2005) (internal citations omitted); Blue Mtns. Biodiversity, 161 F.3d at 1213-1214 (finding “EA’s cursory and inconsistent treatment of sedimentation issues . . . raises substantial questions about . . . the unknown risks to” fish populations). As one court recently explained regarding oil and gas leasing that may facilitate fracking, “BLM erroneously discounted the uncertainty from fracking that may be resolved by further data collection. ‘Preparation [of an EIS] is mandated where uncertainty may be resolved by further collection of data, or where collection of such data may prevent speculation on potential effects.’” CBD, 937 F. Supp. 2d 1140 (quoting Native Ecosystems Council v. U.S. Forest Serv., 428 F.3d 1233, 1240 (9th Cir. 2005)).</p> <p data-bbox="321 1076 1272 1287">While it is clear that oil and gas activities can cause great harm, there remains much to be learned about the specific pathways through which harm may occur and the potential degree of harm that may result. Additional information is needed, for example, about possible rates of natural gas leakage, the potential for fluids to migrate through the ground in and around the parcels, and the potential for drilling to affect local faults. NEPA clearly dictates that the way to address such uncertainties is through the preparation of an EIS.</p> <p data-bbox="321 1320 930 1347">3. The lease sale poses threats to public health and safety</p> <p data-bbox="321 1380 1260 1498">As discussed in great detail above, oil and gas activities that may occur as a result of the lease sale could cause significant impacts to public health and safety. 40 C.F.R. § 1508.27(b)(2). Fracking would pose a grave threat to the region’s water resources, harm air quality, pose seismic risks, negatively affect wildlife, and fuel climate change.</p> | |

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| | | <p>As a congressional report noted, oil and gas companies have used fracking products containing at least 29 products that are known or possible carcinogens, regulated for their human health risk, or listed as hazardous air pollutants. The public’s exposure to these harmful pollutants alone would plainly constitute a significant impact. So do the many other public health risks associated with unconventional drilling as described above in section “II” subsection “3(E).” Furthermore and as previously discussed, information continues to emerge on the risk of earthquakes induced by wastewater injected into areas near faults. It is undeniable that these earthquakes pose risks to the residents of the area and points beyond.</p> <p>The use of fracking fluid, which is likely to occur as a result of the lease sale, and other risks associated with unconventional drilling, pose a major threat to public health and safety and therefore constitutes a significant impact. BLM therefore must evaluate such impacts in an EIS.</p> <p>4. The Lease Sale Action Will Adversely Affect Candidate and Agency Sensitive Species and Their Habitat</p> <p>An EIS may also be required when an action “may adversely affect an endangered or threatened species or its habitat.” 40 C.F.R. § 1508.27(b)(9). Although a finding that a project has “some negative effects does not mandate a finding of significant impact,” an agency must nonetheless fully and closely evaluate the effects on listed species and issue an EIS if those impacts are significant. <i>Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.</i>, 373 F. Supp. 2d 1069, 1081 (E.D. Cal. 2004) (finding agency’s conclusion that action “may affect, is likely to adversely affect” species due to “disturbance and disruption of breeding” and “degradation” of habitat is “[a]t a minimum, . . . an important factor supporting the need for an EIS”).</p> <p>Moreover, BLM must undertake consultation with the USFWS regarding the effects of this action on endangered and threatened species and their designated critical habitat. The ESA provides “a program for the conservation [of] endangered species and threatened species” and “a means whereby the ecosystems upon which [such] species depend may be conserved.” 16 U.S.C. § 1531(b). “The plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.” <i>TVA v. Hill</i>, 437 U.S. 153, 184 (1978). To implement the ESA, USFWS lists species that are “endangered” or “threatened” solely on the basis of biological criteria and the best available scientific and commercial data. 16 U.S.C. §§ 1533(b), 1533(c). USFWS must also designate “critical habitat” of listed species. <i>Id.</i> § 1533(a)(3). Critical habitat includes both occupied and unoccupied areas that contain habitat features that are “essential to the conservation of the species[.]” <i>Id.</i> § 1532(5)(A).</p> <p>Section 7(a)(2) of the ESA prohibits federal agencies from undertaking actions that (1) are “likely to jeopardize the continued existence” of any listed species or (2) “result in the destruction or adverse modification of” critical habitat. 16 U.S.C. § 1536(a)(2).</p> | |

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| | | <p>“Jeopardy” results when it is reasonable to expect that the action would “reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. “Adverse modification” is defined as “a direct or indirect alteration that appreciably diminishes the value of critical habitat for ... the survival [or] recovery of a listed species.” Id. An interagency consultation process must occur when a federal agency, like BLM, proposes an “agency action” that “may affect” a listed species or its designated critical habitat. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a); Rio Grande Silvery Minnow v. Bureau of Reclamation, 601 F.3d 1096, 1105 (10th Cir. 2010). During the ESA consultation process, both FWS and BLM must use the best scientific and commercial data available. 16 U.S.C. § 1536(a)(2).</p> <p>In this consultation process, BLM and FWS must analyze the (1) action area, (2) the environmental baseline, and (3) the effects of the action. See 50 C.F.R. §§ 402.02; 402.14(h)(2). The “action area” includes “all areas to be affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02. The “environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area.” Id. The “effects of the action” include the direct, indirect, and cumulative effects to a species from the proposed agency action. Id.</p> <p>Impacts to BLM sensitive and other rare species threatened by the proposed lease have been highlighted in section “III” subsection “3(D)” of these comments. BLM asserts that “There are no direct impacts to wildlife, fish, or wild horse habitat resources through the administrative action of leasing. The BLM manages a variety of habitats that possess the biological and physical attributes important in the life-cycles of many wildlife species. The diversity of habitats and landscapes provide important areas for breeding, birthing, foraging, wintering, and migration. Indirect effects from leasing may occur to the habitat if development were to occur.” The PEA makes no mention of BLM’s Section 7 obligations under which independent consultation is required. The contention that leasing will not affect listed species or habitat contravenes the language of ESA § 7 and its implementing regulations, and has been rejected for nearly thirty years by well-established case law. See Conner, 848 F.2d at 1456-57 (rejecting “incremental-step” approach to ESA consultation for oil and gas leases).</p> <p>ESA regulations define direct impacts as impacts that are caused by the action and occur at the same time and place, 50 C.F.R. § 402.02 (found in definition of “effects of the action”), indirect impacts as those that are caused by the proposed action, but are later in time and reasonably certain to occur. Id. Development of oil and gas leases is a core example of “indirect impacts” that must be subject to consultation at the time of action. FWS has explained that under the “may affect” standard, “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers formal consultation.” 51 Fed. Reg. 19,926, 19,949 (June 3, 1986). FWS’s Consultation Handbook similarly provides the ‘may affect’ standard is satisfied “when a proposed action may pose any effects on listed species or designated critical habitat.” ESA</p> | |

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| | | <p>Consultation Handbook at xvi (emphasis added). In 1988, the Ninth Circuit decisively rejected BLM’s proposed “incremental-step approach” to ESA Section 7 on Mineral Leasing Act leasing actions: “We conclude that the ESA does not permit the incremental-step approach under the MLA advocated by appellants. The biological opinions must be coextensive with the agency action and T & E stipulations cannot be substituted for comprehensive biological opinions.310 The PEA’s contention that “the act of issuing leases . . . will not affect that respective species” is contrary to the established holding of Conner v. Burford, and appears to represent an attempt to rely on a framework for lease sale consultation that has been recognized as illegal for nearly thirty years.</p> | |
| 25 | CBD | <p>I. BLM must ensure that the Federal Land Policy and Management Act (“FLPMA”) and the Mineral Leasing Act (“MLA”) are not violated</p> <p>The Mineral Leasing Act (“MLA”) requires BLM to demand lessees take all reasonable measures to prevent the waste of natural gas. The MLA states:</p> <p>All leases of lands containing oil or gas, made or issued under the provisions of this chapter, shall be subject to the condition that the lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land, or the entrance of water through wells drilled by him to the oil sands or oil-bearing strata, to the destruction or injury of the oil deposits.</p> <p>30 U.S.C. § 225; see also id. § 187 (stating that for the assignment or subletting of leases that “[e]ach lease shall contain . . . a provision . . . for the prevention of undue waste”). This statutory mandate is unambiguous and must be enforced. <i>Tenn. Valley Auth. v. Hill</i>, 437 U.S. 153, 184 n.29 (1978) (stating that “[w]hen confronted with a statute which is plain and unambiguous on its face,” “it is not necessary to look beyond the words of the statute.”).</p> <p>Pursuant to the Federal Land Policy and Management Act (“FLPMA”), BLM must “take any action necessary to prevent unnecessary or undue degradation of the [public] lands.” 43 U.S.C. § 1732(b). Written in the disjunctive, BLM must prevent degradation that is “unnecessary” and degradation that is “undue.” <i>Mineral Policy Ctr. v. Norton</i>, 292 F.Supp.2d 30, 41-43 (D. D.C. 2003). The protective mandate applies to BLM’s planning and management decisions. See <i>Utah Shared Access Alliance v. Carpenter</i>, 463 F.3d 1125, 1136 (10th Cir. 2006) (finding that BLM’s authority to prevent degradation is not limited to the RMP planning process). Green house gas pollution may cause “undue” degradation, even if the activity causing the degradation is “necessary.” Where green house gas pollution is avoidable, it is “unnecessary” degradation. 43 U.S.C. § 1732(b). 310 <i>Conner v. Burford</i>, 848 F.2d 1441, 1456-58 (9th Cir. 1988); see also <i>Karuk Tribe of Cal. v. U.S. Forest Serv.</i>, 681 F.3d 1006, 1027 (9th Cir. 2012); <i>Colo. Envntl Coalition v. Dept. of Defense</i>, 819 F. Supp.2d 1193, 1221 (D. Colo. 2011)..</p> <p>In addition to being harmful to human health and the environment, the emissions from oil and gas operations are also an undue and unnecessary waste and degradation of</p> | <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5, and are in compliance with FLPMA and MLA. Site-specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>“Unnecessary or undue degradation” is defined in 43 CFR 3802.0-5 and again in 43 CFR 3809. 5, both of which focus on operations under the General Mining Laws, not the Mineral Leasing Act. 43 CFR 3715.0-5 defines unnecessary or undue degradation as it pertain to unauthorized uses associated with operations under the mining laws. The regulations in 43 CFR 3162.5-1 (b) require an oil and gas operator to, “exercise due care and diligence to assure that leasehold operations do not result in <i>undue damage</i> to surface or subsurface resources or surface improvements. (emphasis added) The oil and gas operator is required to comply with all Federal regulation, such as this, at such time as actual operations begin.</p> |

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| | | public lands. Consequently, BLM's proposed gas and oil lease sale violates FLPMA. See 43 U.S.C. § 1732(b). | |
| 26 | CBD | <p>III. Conclusion</p> <p>Unconventional oil and gas development not only fuel the climate crisis but entail significant public health risks and harms to the environment. Accordingly, the EIS should thoroughly analyze the alternative of no new fossil fuel leasing and no fracking or other unconventional well stimulation methods within the HPD planning area. Thank you for consideration of these comments. The Center trusts that you will take our requests for deferrals to protect species and wetlands seriously and in addition will issue a legally adequate EIS for this proposed oil and gas leasing action.</p> | No response needed. |