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Defending the West www.westernlaw.org

Western Environmental Law Center

June 29, 2015

Submitted via e-mail and U.S.P.S.

Bureau of Land Management
Director (210)
Attn: Protest Coordinator
P.O. Box 71383
Washington, DC 20024-1383
Email: protest@blm.gov

Re: Protest of Buffalo Field Office's Proposed Resource Management Plan and Final Environmental Impact Statement

Dear Bureau of Land Management:

The Western Environmental Law Center, along with WildEarth Guardians, Powder River Basin Resource Council, Sierra Club, and Natural Resources Defense Council ("Conservation Groups"), submit the following protest on the Bureau of Land Management's ("BLM") Proposed Resource Management Plan ("Proposed RMP") and associated Final Environmental Impact Statement ("FEIS") for the Buffalo Field Office. The revised RMP covers 7.4 million acres managed by BLM and will replace and update the 1985 Buffalo RMP. As required by 40 C.F.R. § 1610.5-2(a)(2), the names, mailing addresses, and telephone numbers for each organization filing this protest are listed below:

Western Environmental Law Center
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Eugene, Oregon 97401
(541) 485-2471

WildEarth Guardians
1536 Wynkoop, Suite 310
Denver, CO 80202
(303) 437-7663

Powder River Basin Resource Council
934 N Main St.
Sheridan, WY 82801
(307) 672-5809

Sierra Club
85 Second Street, 2nd Floor
San Francisco, CA 94105
(415) 977-5610

Natural Resources Defense Council
40 West 20th Street
New York, NY 10011
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I. INTERESTS AND PARTICIPATION OF PROTESTING PARTIES

The Conservation Groups, both collectively and individually, have significant interests in the 7.4 million-acre area in northeastern Wyoming affected by BLM's Proposed RMP and Final EIS. As BLM is well aware, the planning contains massive deposits of coal, oil, and natural gas, and the public lands governed by the plan provide a wealth of recreational opportunities enjoyed by our members. Each of our organizations has a long history of advocating for increased protections for conservation and recreational values throughout the Powder River Basin and for greater consideration of the climate impacts of the resource management decisions made there. Many of our members hike, camp, and recreate throughout the 800,000 acres of BLM-managed public lands affected by the RMP, and these interests in the scenery, wildlife, and solitude of the area have been repeatedly recognized by federal courts as sufficient for purposes of Article III standing.

The Conservation Groups have consistently participated in the planning process for the revisions to the Buffalo Field Office's RMP. On at least five separate occasions, the signors to this protest and other conservation organizations submitted comments to BLM raising concerns with various aspects of BLM's proposed revisions and the important resources at stake. *See* letters submitted to BLM dated September 26, 2013 regarding the Draft EIS (hereinafter "Draft Comments") (attached hereto as Exhibit 1), and again on February 3, 2014, March 13, 2014, June 19, 2014, and April 15, 2015 (attached as Exhibits 2, 3, 4, and 5) (hereinafter "Supplemental Comments"). NRDC's comment letter dated September 26, 2013 is attached at Exhibit 23.

Western Environmental Law Center ("WELC") uses the power of the law to defend and protect the American West's treasured landscapes, iconic wildlife and rural communities. WELC combines legal skills with sound conservation biology and environmental science to address major environmental issues in the West in the most strategic and effective manner. WELC works at the national, regional, state, and local levels; and in all three branches of government. WELC integrates national policies and regional perspective with the local knowledge of our 100+ partner groups to implement smart and appropriate place-based actions.

WildEarth Guardians WildEarth Guardians is a Santa Fe, New Mexico-based nonprofit organization with offices throughout the western U.S., including in Utah. WildEarth Guardians is dedicated to protecting and restoring wild places, wildlife, wild rivers, and the health of the American West and has over 44,000 members. As part of its Climate and Energy Program, Guardians works to combat climate change by advancing clean energy and aiding a transition away from fossil fuels, the key source of the greenhouse gases fueling global warming, particularly on our pubic lands. In doing so, Guardians defends the public interest by safeguarding clean air, pure water, vibrant wildlife populations, and protected open spaces.

Powder River Basin Resource Council ("PRBRC") has a long history of involvement working for responsible energy development in the Powder River Basin. PRBRC was formed in 1973 by ranchers and concerned citizens of Wyoming to address the impacts of strip mining on rural people and communities. Today, PRBRC works for the preservation and enrichment of Wyoming's agricultural heritage and rural lifestyle; the conservation of Wyoming's unique land,

mineral, water, and clean air resources, consistent with the responsible use of those resources to sustain the livelihood of present and future generations; and the education and empowerment of Wyoming's citizens to raise a coherent voice in the decisions that will impact their environment and lifestyle. PRBRC members live, work, recreate, and travel throughout the Powder River Basin.

Sierra Club is America's largest grassroots environmental organization, with more than 2.4 million members and supporters nationwide. In addition to creating opportunities for people of all ages, levels and locations to have meaningful outdoor experiences, the Sierra Club works to safeguard the health of our communities, protect wildlife, and preserve our remaining wild places through grassroots activism, public education, lobbying, and litigation. Sierra Club is dedicated to exploring, enjoying, and protecting the wild places of the Earth; to practicing and promoting the responsible use of the Earth's resources and ecosystems; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Wyoming Chapter of the Sierra Club has approximately 900 members, many of whom live, work, or recreate in the Powder River Basin.

Natural Resources Defense Council ("NRDC") is a non-profit environmental membership that uses law, science, and the support of more than two million members and activists throughout the United States to protect wildlife and wild places and to ensure a safe and healthy environmental for all living things. Almost 1,000 of our members reside in Wyoming. NRDC members use and enjoy public lands in Wyoming, including the specific lands at issue, for a variety of purposes, including: recreation, solitude, scientific study, and conservation of natural resources. NRDC has a long established history of working to protect public lands and clean air in Wyoming and addressing climate change by promoting clean energy and reducing America's reliance on fossil fuels.

II. ISSUES PRESENTED AND PARTS OF THE PLAN UNDER PROTEST

This protest focuses on BLM's failure to adequately analyze and disclose the direct, indirect, and cumulative impacts of coal, oil and gas development called for by BLM in the Proposed RMP and Final EIS, and, correspondingly, the impact that such development will have on air quality and climate change. These issues are addressed in the following sections of the Proposed RMP and Final EIS:

- Consideration of alternatives (discussed in chapter 2); and
- Consideration of environmental consequences (discussed in chapter 4).

As Conservation Groups have previously explained to BLM and the Department of Interior, finalizing the Buffalo RMP as proposed would commit more than 15 billion tons of unnecessary carbon pollution to the Department of Interior's ledger and cement BLM's place as an agency that is dramatically out of step with the Obama Administration's stated climate objectives. Not only does BLM persist with a business-as-usual approach to fossil fuel extraction in the Proposed RMP, BLM refuses to even consider any alternative that would restrict coal, oil and gas development on public lands that BLM manages.

Since our organizations submitted our initial comments on the Draft Environmental Impact Statement ("DEIS") in September 2013, new studies have come to light that reinforce the urgency of the climate problem and the need for federal agencies to address difficult climate questions head on. For example, in January 2015, Nature published a peer-reviewed study concluding that in order to meet internationally-accepted climate targets (and keep global mean temperatures within 2 °C of preindustrial times), globally a third of all oil reserves, half of all gas reserves and more than 80 percent of coal reserves must remain in the ground through 2050.[1] Additionally, a recent report from the Center of American Progress and The Wilderness Society found that greenhouse gas emissions from federal oil, gas, and coal account for more than 20 percent of all U.S. greenhouse gas emissions and 24 percent of all U.S. energy-related emissions.[2] Regarding the planning area, the report found that emissions associated with federal coal from Wyoming and Montana—primarily in the Powder River Basin—accounts for 10 percent of all U.S. greenhouse gas emissions.[3]

BLM's Proposed RMP, which calls for 10.2 billion tons of coal development and annual development of 9.8 million barrels of oil and 442.2 billion cubic feet of natural gas, continues to stand in opposition to the President's climate agenda. Earlier this year, the President announced a new executive order that requires the federal government to cut greenhouse gas emissions by 40 percent by 2025 from 2008 levels. However, these reductions will be meaningless if they are dwarfed by the substantial emissions that will occur from the leasing, mining, and burning of coal within the Buffalo planning area.

On behalf of our members and supporters that live, work, and recreate in Wyoming, the Conservation Groups reiterate our call that the BLM not finalize the RMP revisions until it has reconsidered the wisdom of unchecked fossil fuel development on the public lands that BLM manages. In March of this year, Secretary Jewell promised the American people an "honest and open" conversation about the federal coal leasing program.[4] By taking a single-minded approach to development of coal, oil and gas development on public lands, and a head-in-the-sand approach to confronting the causes and dangers of climate disruption, BLM's Proposed RMP and Final EIS for the Buffalo Field Office ("BFO") is a fundamentally flawed document that fails to comply with the legal requirements of NEPA.

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[1] The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C, Christophe McGlade and Paul Elkins, 517 Nature 187-90 (Jan. 8, 2015) (attached as Exhibit 6).

[2] Additionally, according to a recently released study by ICF International, natural gas emissions on federal and tribal land account for 12.3% of national methane emissions. *See* ICF International, *Onshore Petroleum and Natural Gas Operations on Federal and Tribal Lands in the United States* (June 22, 2015), available at http://www.edf.org/sites/default/files/content/federal_and_tribal_land_analysis_presentation_6_22_final.pdf.

[3] Claire Moser, et al., Center for American Progress & The Wilderness Society, *Cutting Greenhouse Gas from Fossil-Fuel Extraction on Federal Lands and Waters* (March 19, 2015), available at https://www.americanprogress.org/issues/green/report/2015/03/19/108713/cutting-greenhouse-gas-from-fossil-fuel-extraction-on-federal-lands-and-waters/.

[4] Sally Jewell, Secretary of Interior (March 17, 2015), available at http://www.doi.gov/news/pressreleases/secretary-jewell-offers-vision-for-balanced-prosperous-energy-future.cfm.

III. STATEMENT OF REASONS IN SUPPORT OF CONSERVATION GROUPS' PROTEST OF THE BLM BUFFALO FIELD OFFICE PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT

The National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq*., and its implementing regulations, promulgated by the Council on Environmental Quality ("CEQ"), 40 C.F.R. §§ 1500.1 *et seq*., is our "basic national charter for protection of the environment." 40 C.F.R. § 1500.1. Recognizing that "each person should enjoy a healthful environment," NEPA ensures that the federal government uses all practicable means to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings," and to "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences," among other policies. 43 U.S.C. § 4331(b).

NEPA regulations explain, in 40 C.F.R. §1500.1(c), that:

> Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

Thus, while "NEPA itself does not mandate particular results, but simply prescribes the necessary process," *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 335 (1989), agency adherence to NEPA's action-forcing statutory and regulatory mandates helps federal agencies ensure that they are adhering to NEPA's noble purpose and policies. *See* 42 U.S.C. §§ 4321, 4331.

Below, Conservation Groups detail major flaws under NEPA that remain in the Proposed Buffalo RMP:

- The Buffalo RMP continues to ignore any alternative that would meaningfully reduce climate impacts and protect the environment, such as an alternative with less coal production, an alternative with stipulations to limit oil and gas development, or an alternative that permanently protects critical areas.

- The Buffalo RMP fails to appropriate assess air impacts from development authorized under the plan, including by failing to consider indirect effects from coal combustion and failing to revise its ozone analysis in light of the best science.

- The Buffalo RMP fails to take a hard look at the impacts of climate change, including by underreporting the climate impacts of its proposal, excluding any social cost of carbon analysis, failing to commit to mitigation measures to address the serious issue of methane emissions and waste, and failing to address the impacts of coal, oil, and gas

development on human resiliency.

- The Buffalo RMP fails to take a hard look at hydraulic fracturing.

A. BLM Failed to Consider a Reasonable Range of Alternatives

As explained above, perhaps the biggest flaw in BLM's Buffalo RMP revision process has been the agency's unbending refusal to consider any alternative that would reduce climate impacts and greenhouse gas emissions by limiting fossil fuel development within the planning area. Conservation Groups put forward reasonable proposed alternatives that would have limited coal leasing and required stipulations on oil and gas development in our 2013 comments on the DEIS, and we reiterated the critical importance of the issue in our Supplemental Comments in 2014. *See* Draft Comments (Exhibit 1) at 35-36; September 26, 2013 Comments (Exhibit 23) at 3-6; March 13, 2014 Supplemental Comments (Exhibit 3); and June 19, 2014 Supplemental Comments (Exhibit 4). Unfortunately, in its FEIS BLM persists with a business-as-usual approach to fossil fuel development that presumes extraordinarily high levels of coal, oil, and natural gas production in the planning area over the next twenty years. The Proposed RMP/FEIS failed to consider Conservation Groups' reasonable proposed alternatives, specifically alternatives to coal leasing and required stipulations on oil and gas development. *See* Draft Comments at 35-46.

BLM's failure to consider any reasonable limit to the unchecked expansion of fossil fuel development on public lands is particularly problematic because it assumes such development is a good idea at the very time that it is becoming abundantly clear that we must chart a different energy future. Whether or not BLM agrees with this viewpoint is immaterial for purposes of this protest. NEPA contains no substantive mandate. However, BLM's refusal to even consider the reasonable alternatives put forward by the Conservation Groups prevents BLM from engaging in the reasoned consideration of alternatives that is the very core of NEPA's procedural mandate and renders BLM's FEIS invalid.

1. BLM Failed to Consider an Alternative with Less Coal Production

In its FEIS, BLM violated NEPA by failing to consider *any* alternative that would reduce development or otherwise alleviate impacts to water, air, and land resources, including alternatives raised by the Conservation Groups nearly two years ago. Every alternative considered in the FEIS proposes to authorize extensive energy development, and all of them – including the No Action alternative – call for 10.2 billion tons of coal production and widespread oil and gas development within the planning area.

In comments on the DEIS, Conservation Groups explained BLM's obligation to consider an alternative that calls for less coal development in simple, straight-forward terms:

> [A]ll four alternatives propose 28 new coal leases consisting of approximately 10.2 billion tons of coal. All four alternatives presume full leasing in the high development potential. . . . Moreover, in three out of the four alternatives (including the preferred alternative), the *entire* federal coal estate would be open to leasing, an area consisting of almost 5 million acres.

> …
> BLM needs to consider an alternative that includes leasing a lesser amount of coal. Failing to consider an alternative that would limit development of coal resources leaves BLM without the legally required range of reasonable alternatives in violation of NEPA.

DEIS Comments at 35. *See* Exhibit 23 at 3 (criticizing BLM's "failure to consider a no coal leasing alternative").

Despite Conservation Groups' clear and reasonable proposal that BLM consider at least one alternative that entails less coal mining and combustion, in the FEIS BLM again analyzed only full-production scenarios. In the FEIS – as it did in the DEIS – BLM considered four alternatives, labelled A-D, that are nearly identical by any reasonable measure with respect to coal.

On the critical issue of coal production, there appears to be absolutely no distinction among the alternatives. As explained in the FEIS, "BLM has estimated that it would issue 28 coal leases encompassing 106,400 acres with approximately 10.2 billion tons of coal in the two high-potential areas over the next 20 years." FEIS at 823.[5]

The chart below, compiled using information from BLM's DEIS chapter on coal resources, illustrates the lack of any meaningful distinction between BLM's four considered alternatives regarding coal. With regard to coal production, coal exploration, acres affected, and the number of coal leases issued during the planning period, three of the four considered alternatives are identical. Alternative B, as the purported outlier, differs only in whether exploration is allowed on all federal lands or a portion thereof and total acres affected. Even Alternative B calls for the same amount of coal from the same amount of coal leases as the other three alternatives. *See* FEIS § 4.2.2, pp. 822-840.

	Coal Production	**Coal Exploration Allowed On**	**Acres Affected**	**Coal Leases to be Issued**
Alternative A	10.2 billion tons	All federal coal lands	195,700	28
Alternative B	10.2 billion tons	Only on federal coal lands in the two high-potential areas	186,000	28
Alternative C	10.2 billion tons	All federal coal lands	195,700	28
Alternative D	10.2 billion tons	All federal coal lands	195,700	28

[5] BLM elsewhere puts the total at a less specific 9-12 billion tons: "During the planning period, under any of the alternatives, it is expected that approximately 9 to 12 billion tons of coal will be produced by existing mines." FEIS at 843.

The consideration of reasonable alternatives is the "heart" of an agency's NEPA analysis. 40 C.F.R. § 1502.14. In an EIS, the agency must "[r]igorously explore and objectively evaluate *all* reasonable alternatives" 40 C.F.R. § 1502.14(a) (emphasis added). Not only must an EIS consider all reasonable alternatives, it is a bedrock NEPA principle that agencies cannot only consider alternatives that are virtually identical, skewing the decision towards one course of action. *Or. Natural Resource Council v. BLM*, 625 F.3d 1092, 1123 (9th Cir. 2010) (setting aside RMP).

As explained by the Tenth Circuit, "[w]ithout substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded." *New Mexico ex rel Richardson v. BLM*, 565 F.3d 683, 708 (10th Cir. 2009) (holding that agency violated NEPA by failing to consider a reasonable alternative). Here, BLM rejected consideration of any alternative that would result in reduced coal production in the project area. As explained by the Ninth Circuit, "[t]he existence of reasonable but unexamined alternatives renders a [NEPA analysis] inadequate." *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998).

In response to Conservation Groups' comments, BLM attempted to explain away its failure to consider a less coal-intensive alternative with a bevy of excuses. BLM's first proffered explanation was that the purpose of the action is to "provide direction for managing public lands in accordance with BLM's multiple use mandate." FEIS App. Y at 2684. However, BLM's governing statute, FLMPA, does not mandate that every use be accommodated on every piece of land; rather, delicate balancing is required. *See Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 58 (2004). "'Multiple use' requires management of the public lands and their numerous natural resources so that they can be used for economic, recreational, and scientific purposes without the infliction of permanent damage." *Public Lands Council v. Babbitt*, 167 F.3d 1287, 1290 (10th Cir. 1999) (citing 43 U.S.C. § 1702 (c)). As held by the Tenth Circuit, "[i]f all the competing demands reflected in FLPMA were focused on one particular piece of public land, in many instances only one set of demands could be satisfied. A parcel of land cannot both be preserved in its natural character and mined." *Rocky Mtn. Oil & Gas Ass'n v. Watt*, 696 F.2d 734, 738 n. 4 (10th Cir.1982) (quoting *Utah v. Andrus*, 486 F.Supp. 995, 1003 (D. Utah 1979)); *see also* 43 U.S.C. § 1701(a)(8) (stating, as a goal of FLPMA, the necessity to "preserve and protect certain public lands in their natural condition"); *Pub. Lands Council*, 167 F.3d at 1299 (citing § 1701(a)(8)). Indeed, as the Tenth Circuit has held, "an alternative that closes [an area] to development does not necessarily violate the principle of multiple use, and the multiple use provision of FLPMA is not a sufficient reason to exclude more protective alternatives from consideration." *New Mexico*, 565 F.3d at 710.

BLM next attempts to rationalize the narrow selection of coal alternatives by referencing "domestic need" for resources. FEIS App. Y at 2684. But this argument simply exposes BLM's failure to acknowledge that the domestic market for coal is shrinking and is anticipated to shrink

even more over the coming decades.[6] Assuming the United States does not act on its pledge to limit global warming to 2°C,[7] coal-fired electric generating capacity is projected to decline domestically by 15percent.[8] Coal production levels, in the reference case of the U.S. Energy Information Administration's ("EIA") 2015 Annual Energy Court, only maintain level coal production through exports, not steady domestic demand.[9] (And it is far from clear that there is a viable export market for U.S. coal.[10]) Further, again assuming no federal policy to address the crisis of climate change through GHG regulations, low natural gas prices could still cause a 13percent decline in coal production in the coming decades, obviating the need for almost all coal production in the planning area.[11] *See* FEIS at 399 (coal from planning area accounts for "approximately one-fifth of total U.S. [coal] production").

On the other hand, if the United States adopts some policy to limit GHG pollution, such as the Clean Power Plan, domestic coal consumption is projected to decline by nearly 40percent.[12] EIA projects that when the Clean Power Plan takes effect, the decline in coal production in the Western region (including the Powder River Basin) will "represent[] a drop of 130 million tons" per year.[13] Indeed, research shows that for the United States to meet its commitment to limiting global warming to 2°C and thereby avoid "dangerous anthropogenic interference with the climate system,"[14] 95percent of recoverable coal reserves in the United States must not be mined.[15] All alternatives contemplate approximately 50percent of the "25 billion tons of economically recoverable coal resources [i.e., reserves]" in the planning area. FEIS at 400, 843 (anticipating 9-12 billion tons will be mined "under any of the alternatives").

Here, even BLM acknowledges that the Clean Power Plan will require a sharp reduction in GHG emissions, which will affect existing coal-fired power plants in the planning area. FEIS at 323. Yet, despite this recognition, the agency insists that projected domestic energy demand requires all alternatives to maintain current coal production rates. This is text book arbitrary and capricious decisionmaking. *See, e.g.*, *Nat'l Parks Conservation Ass'n v. EPA*, No. 12-73710, slip op. at 23 (9th Cir. June 9, 2015) (inconsistency in agency analysis is "the hallmark of arbitrary action").

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[6] EIA, Annual Energy Outlook 2015 at 22-26 (attached as Exhibit 7).
[7] U.N. Climate Change Conference 2009, Copenhagen, Den., Dec. 7-19, 2009, Rep. of the Conference of the Parties on its Fifteenth Sess., FCCC/CP/2009/11/Add.1 (Mar. 30, 2010) (hereinafter, Copenhagen Accord).
[8] EIA, Annual Energy Outlook 2015 at 26.
[9] *Id.* at 23.
[10] Anthony Yuen, The Unimaginable: Peak Coal in China, Citi Research (Sept. 4, 2013) (attached as Exhibit 8) (explaining expected decrease in coal consumption in China and global ripple effects); Christian Lelong et al., Goldman Sachs, Rocks & Ores, The Window for Thermal Coal Investment Is Closing 3 (July 24, 2013) (attached as Exhibit 9).
[11] EIA, Annual Energy Outlook 2015 at 23.
[12] EIA, Annual Energy Outlook 2015 at 22; EIA, Analysis of the Impacts of the Clean Power Plan at 47 (2015) (attached as Exhibit 10).
[13] *Id.* at 50.
[14] Copenhagen Accord at 5, ¶ 1.
[15] McGlade & Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C*, 517 Nature 187, 189 & tbl. 1 (2015) (attached above as Exhibit 6)

BLM also attempts to justify its failure to consider *any* alternative reducing coal production because over a decade ago the agency applied the four coal screens enumerated at 43 CFR § 3420.1-4(e) to the coal resources in the area. FEIS App. Y at 2702. But the coal screens at § 3420.1-4(e) do not mandate any level of leasing and do not mandate BLM to make any given area of land available to coal leasing. The screens provide BLM with broad discretion to affirm the multiple-use objectives of FLMPA and "eliminate additional coal deposits from consideration to protect other resource values." 43 C.F.R. § 3420.1-4(e)(3). Just as in *New Mexico*, the coal screens "leave open" the question of whether any coal deposits in the planning area should be made available for development. 565 F.3d at 710-11. And BLM itself acknowledges that climate change, caused in significant part by the combustion of coal, threatens "many resource uses on BLM-administered land." FEIS at 322. As the FEIS states:

> Climate change also poses challenges for many resource uses on BLM-administered land. Increased temperatures, drought and evaporation may reduce seasonal water supplies for livestock and could impact forage availability. . . . Shifts in wildlife habitat due to climate change may influence hunting and fishing activities, and early snowmelt may impact winter and water-based recreational activities. Drought and resulting stress on vegetation is likely to increase the frequency and intensity of mountain bark beetle and other insect infestations, which further increases the risk of fire and reduces the potential for sale of forest products on BLM-administered lands.

Id. The U.S. government, via the Clean Power Plan and Copenhagen Accord, has determined that in order to limit these impacts to resources to an acceptable level and avoid the most serious impacts from climate change, coal combustion (and therefore production) must be significantly reduced. As noted above, research shows that to accomplish this 95percent of U.S. coal reserves must remain in the ground. BLM's excuses for failing to consider alternatives that would reduce coal production from current levels lack merit.

Finally, BLM seems to suggest that its refusal to consider *any* alternative that would lead to reduced levels of coal production was needed to assure compliance with "federal laws, guidelines, and policies." FEIS App. Y at 2684. But BLM's suggestion is mistaken. As noted, the Copenhagen Accord committed the United States to reducing GHG emissions sufficiently to limit global warming to 2°C and the Clean Power Plan seeks to reduce GHG emissions by 30percent by 2030. Further, as the FEIS also recognizes, Secretarial Order 3289 establishes BLM policy to "protect the nation from the impacts of climate change" by, among other things, identifying "ways to reduce the Department's carbon footprint" when "developing multi-year management plans" and "decisions regarding potential uses of resources under the Department's purview." Sec. Or. 3289, §§ 1-2; FEIS at 323. Thus, contrary to BLM's suggestion, federal policy endorses actions to abate the impacts of climate change, including by addressing the issue in resource management planning. As such, BLM had no excuse for failing to consider *any* alternative that would reduce levels of coal production in the Buffalo Field Office. As such, the range of alternatives considered by BLM was impermissibly narrow, in violation of NEPA.

2. BLM Failed to Consider Stipulations to Limit Oil and Gas Development

The BFO must take a hard look in the RMP at methods to reduce GHG emissions and at how authorizations and management activities will ensure implementation of feasible GHG emission reduction strategies. The BFO may not wait to address GHG emissions at the APD stage, while ignoring them at the RMP and subsequent leasing stages. In our Draft Comments, we proposed different sets of BMPs for reducing methane emissions from oil and gas operations that have been endorsed by the BLM, a BLM contractor, the EPA Natural Gas Star Program, and non-profit research and advocacy organizations. *See* Draft Comments at 36-43.[16]

These BMPs identify methods to reduce GHG emissions that offer the BFO tried and true measures which, if required for oil and gas development, would ensure feasible GHG emission reduction strategies. Many of the methane emission reduction technologies and practices are common across the different sources of BMPs, increasing confidence in their effectiveness. These BMPs provide best-available-technology-and-practice-based standards to reduce methane emissions from oil and gas activity in the planning area and should be considered by the BLM. An additional approach that BLM should consider is adoption of a performance standard-based approach that would establish maximum leak and vent rates for oil and gas activity.

In the FEIS, the BFO failed to consider the multiple effective and environmentally sustainable methods and practices to reduce methane waste. As noted in our Draft Comments, while BLM has in the past claimed that it will impose methane mitigation measures at the site-specific stage, it has failed to do so. Moreover, the RMP-stage is the appropriate place to address these measures to ensure consistency, put the oil and gas industry on notice of what leasing on BLM lands will look like, and meet its duties to address this issue as required by NEPA, the Federal Land Policy and Management Act ("FLPMA"), the Mineral Leasing Act, and Secretarial Order 3226.

3. BLM Failed to Consider an Alternative that Permanently Protects Certain Critical Areas

The BLM also continues to fail to consider an alternative that provides permanent protection for critical areas. BLM is uniquely empowered to remove certain lands from further coal, oil and gas leasing and development through the pending RMP, and, as codified in the agency's organic act, the Federal Land Policy and Management Act ("FLPMA") of 1976, 43 U.S.C. § 1701 *et. seq*., taking such action is part of BLM's mandate. FLPMA's congressional declaration states:

> It is the policy of the United States that … the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values;

[16] BMPs are constantly evolving, and new studies exist now that BLM should also take into consideration. *See, e.g.*, ICF International, *Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries* (March 2014), available at https://www.edf.org/sites/default/files/methane_cost_curve_report.pdf.

> that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use;

43 U.S.C. § 1701(a)(8) (emphasis added).

Indeed, BLM is duty bound to develop and revise land use plans according to this congressional mandate, so as to "observe the principles of multiple use." 43 U.S.C. § 1712(c)(1). As described in more detail in our Draft Comments, at 43-46, in order to fulfill its multiple use mandate, BLM must consider, on equal footing, the value of permanent protection and preservation of public lands in the Buffalo planning area, along with industry pressure to lease and develop these lands. The RMP revision process is the perfect opportunity for BLM to re-evaluate these competing resources and give suitable weight to FLPMA's mandate to, where appropriate, preserve and protect public lands in their natural condition. *See* 43 U.S.C. § 1701(a)(8).

For example, the BLM should consider alternatives to minimize the wasteful and polluting practice of flaring, either by requiring gas reinjection, or by closing public lands to oil and gas development until either such infrastructure is in place or development is planned to ensure that such infrastructure will be in place to accommodate the pace of oil and gas development. BLM's BFO cannot continue its practice of prioritizing coal, oil and gas leasing and development above the other resource values at stake. The Buffalo RMP revision process should be used to provide a framework where BLM can more fully realize its multiple use mandate now and into the future.

B. BLM Failed to Take a Hard Look at Impacts to Air Quality

The BFO must consider foreseeable impacts to visibility and air quality degradation that will result from development authorized by the Buffalo RMP and EIS. In particular, the Buffalo Field Offices must consider the air quality impacts from coal, oil and gas development in the planning area. Much of air pollution from fossil fuel development and operations, which is specifically discussed, below, also degrades visibility. Section 169A of the Clean Air Act ("CAA"), 42, U.S.C. § 7401 *et seq.* (1970) sets forth a national goal for visibility, which is the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from manmade air pollution." Congress adopted the visibility provisions in the CAA to protect visibility in "areas of great scenic importance." H.R. Rep. No. 294, 95th Cong. 1st Sess. at 205 (1977). In promulgating its Regional Haze Regulations, 64 Fed. Reg. 35,714 (July 1, 1999), the U.S. Environmental Protection Agency ("EPA") provided:

> Regional haze is visibility impairment that is produced by a multitude of sources and activities which emit fine particles and their precursors and which are located across a broad geographic area. Twenty years ago, when initially adopting the visibility protection provisions of the CAA, Congress specifically recognized that the "visibility problem is caused primarily by emission into the atmosphere of SO2, oxides of nitrogen, and particulate matter, especially fine particulate matter,

> from inadequate[ly] controlled sources." H.R. Rep. No. 95-294 at 204 (1977). The fine particulate matter (PM) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) that impairs visibility by scattering and absorbing light can cause serious health effects and mortality in humans, and contribute to environmental effects such as acid deposition and eutrophication.

The visibility protection program under sections 169A, 169B, and 110(a)(2)(J) of the CAA is designed to protect Class I areas from impairment due to manmade air pollution. The current regulatory program addresses visibility impairment in these areas that is "reasonably attributable" to a specific source or small group of sources, such as, here, air pollution resulting from coal, oil and gas development and operations authorized by the Buffalo RMP. *See* 64 Fed. Reg. 35,714.

Moreover, EPA finds the visibility protection provisions of the CAA to be quite broad. Although EPA is addressing visibility protection in phases, the national visibility goal in section 169A calls for addressing visibility impairment generally, including regional haze. *See e.g.*, *State of Maine v. Thomas*, 874 F.2d 883, 885 (1st Cir. 1989) ("EPA's mandate to control the vexing problem of regional haze emanates directly from the Clean Air Act, which 'declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution.'") (citation omitted).

Here, the Northern Cheyenne Tribal area, located in Montana just north of the Buffalo planning area, along with the Wind Cave National Park and the Badlands National Park, located to the east of the Buffalo planning area, are all designated as Class I air quality areas. *See* FEIS at 289, 309-10. Despite BLM's recognition that "[m]anagement actions and resource uses under each of the alternatives may impact air quality related values (AQRVs) in [these] federal Class I area[s]," the agency takes no meaningful steps in the RMP to stem these impacts. *Id.* at 651. BLM also acknowledges that modeled visibility impacts at Class I and Class II areas in the Powder River Basin would increase by 2020 to up to 60 days per year with impacts above 1 deciview, in comparison to base year 2004, but offers no means to decrease that number. Notably, there are a number of Class II areas in and around the planning area, including the Cloud Peak Wilderness Area, the Bighorn National Forest, and the Thunder Basin National Grassland *in* the planning area, and the Devil's Tower National Monument and the Black Hills National Forest to the east of the planning area. *Id.* at 289, 309-10.

BLM's chosen Alternative D – while touted as the moderate and balanced alternative – does very little to reduce air quality impacts at a planning scale. *Id.* at 675. Indeed, "[a]ll coal lands are open to exploration … resulting in *zero* acres closed to coal exploration and 4,775,136 acres open to coal leasing. *Id.* at 122 (emphasis added). Moreover, Alternative D leaves 2,725,060 acres open to salable mineral exploration and development while leaving only 72,276 acres of the fluid mineral estate unavailable to leasing. *Id.*

In addition, it is particularly troubling that the agency has limited its air quality impact analysis to an "emission comparison approach," rather than a more detailed and trustworthy modeling approach. *Id.* at 650, 653. BLM reasoned that such analysis was not completed because

"[a]ir quality modeling can be used to simulate expected future air quality concentrations and effects on visibility and deposition, but at this stage of the planning process, sufficient project-specific data were not available for such an assessment." *Id.* at 651. Yet, the Technical Support Document ("TSD") for Air Quality "includes detailed information regarding the data and assumptions used to estimate emissions for each project alternative and the emissions totals for each activity per year." *Id.* at 652. With data and detailed emissions projections available, it is unclear why the agency didn't conduct modeling analysis of air quality impacts.

The Buffalo RMP acknowledges that "[f]or the Buffalo planning area, activities associated with oil and natural gas development and coal mining result in the largest emissions for the majority of pollutants." *Id.* at 654. Despite the fact that air quality is considerably impacted by coal, oil and gas extraction and development, BLM fails to conduct a hard look analysis at the cumulative impacts of developing these resources, representing a fatal shortcoming of the RMP and FEIS.

BLM's obligations under NEPA are clear. A cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." *Ocean Advoc. v. U.S. Army Corps of Eng'rs.*, 402 F.3d 846, 868 (9th Cir. 2005); 40 C.F.R. § 1508.7. BLM's cumulative impacts analysis, "must be more than perfunctory; it must provide a 'useful analysis of the cumulative impacts of past, present, and future projects.'" *Ocean Advoc.*, 402 F.3d at 868. BLM must, therefore, "give a realistic evaluation of the total impacts [of the action] and cannot isolate the proposed project, viewing it in a vacuum." *Grand Canyon Trust v. FAA*, 290 F.3d 339, 342 (D.C. Cir. 2002). As noted above, the failure to assess cumulative impacts, particularly, as here, the amassed air quality impacts of coal, oil and gas development in a highly extracted area, "impermissibly subject[s] the decisionmaking process contemplated by NEPA to 'the tyranny of small decisions.' " *Kern*, 284 F.3d at 1078 (citation omitted). Here, the agency has failed to conduct any cumulative analysis of these impacts.

The RMP provides that "[b]ecause no air quality modeling was conducted as part of this analysis, cumulative impacts to air quality over the life of the plan were analyzed for each alternative by comparing cumulative emissions with statewide emissions totals." FEIS at 680. Yet, the agency's air quality discussion under Alternative D includes no such cumulative analysis. While emissions data and projections are provided for fluid minerals (natural gas, coalbed natural gas, and oil development) as well as for coal, no actual analysis of this data is offered.

Of course, these emissions denote far more than figures in a spreadsheet, but represent air quality impacts to important resource values and human health. The RMP specifically recognizes:

> Because of the amount of existing and planned resource development activity, emissions of NO_X, VOC, and CO from coal mining and oil and natural gas development could impact air quality under each of the alternatives. Theses emissions are precursors to ozone (O_3) and fine particulates ($PM_{2.5}$) which are both secondary pollutants and ambient concentrations could increase and also

> affect visibility and atmospheric deposition. Emissions of primary coarse (PM_{10}) and fine ($PM_{2.5}$) particulate from these activities could also affect local and regional air quality by decreasing visibility and increasing deposition.

Id. at 656. Notably, "emissions under [Alternative D] are likely to contribute to ambient O_3 concentrations and total fine particulates, affecting visibility and atmospheric deposition." *Id.* at 675. Further, "[t]he expected level of impacts may possibly contribute to violations of the current 8-hour average ozone standard." *Id.* at 676. In addition to failing to analyze the cumulative impacts on air resources, the Buffalo RMP requires no mitigation to address these impacts, providing only that "[f]or major projects, such as the development of a large natural gas field or mineral development project … the BLM *may* require proponents to demonstrate compliance with ambient air quality standards and other federal, state, and local air quality regulations." *Id.* at 656 (emphasis added).

Research indicates a strong correlation between oil and gas development and increased ozone concentrations – particularly in the summer when warm, stagnant conditions yield an increase in O_3 from oil and gas emissions.[17] Particularly in areas of significant existing oil and gas development – such as the area researched by Rodriguez, the San Juan Basin in the Four Corners region, but also relevant, here – summertime "peak incremental O_3 concentration of 10 ppb" have been simulated. *Id.* at 1118. This study indicates a "clear potential for oil and gas development to negatively affect regional O_3 concentrations in the western United States, including several treasured national parks and wilderness areas in the Four Corners region. It is likely that accelerated energy development in this part of the country will worsen the existing problem." *Id.* Although these findings are a based on a case study in the Four Corners region, the applicability of this research is far broader and should be considered by the BFO, here, particularly because of the notable coal development in the planning area. Additionally, oil and gas production in the mountain west has recently been linked to *winter* ozone levels that greatly exceed the National Ambient Air Quality Standards ("NAAQS").[18]

Despite these impacts – and indeed the BFO's acknowledgment of these impacts – the Buffalo RMP's preferred alternative calls for coal, oil and gas activity that would be the largest emission sources for each of the identified criteria and hazardous air pollutants. FEIS at 654. As the Endocrine Disruption Exchange has noted:

> In addition to the land and water contamination issues, at each stage of production and delivery tons of toxic volatile compounds, including benzene, toluene, ethylbenzene, xylene, etc., and fugitive natural gas (methane), escape and mix with nitrogen oxides from the exhaust of diesel-driven, mobile and stationary

[17] Marco A Rodriguez, et al., *Regional Impacts of Oil and Gas Development on Ozone Formation in the Western United States*, JOURNAL OF AIR & WASTE MANAGEMENT ASSOCIATION (Sept. 2009) (Sept 26 2013 Comment Letter) (attached as Exhibit 1).

[18] *See* Gail Tonnesen and Richard Payton, EPA Region 8. *Winter Ozone Formation: Results from the Wyoming Upper Green River Basin Studies and Plans for the 2012, Uintah Basin Study* (seminar abstract) (Jan. 2012), available at: http://www.esrl.noaa.gov/csd/seminars/2012/TonnesenPayton.html (citing, *inter alia*, Schnell, et. al., *Rapid photochemical production ozone at high concentrations in a rural site during winter*, 2 Nature Geosci. 120-122 (2009) (Sept 26 2013 Comment Letter) (attached as Exhibit 1).

> equipment to produce ground-level ozone. Ozone combined with particulate matter less than 2.5 microns produces smog (haze). Gas field produced ozone has created a serious air pollution problem similar to that found in large urban areas, and can spread up to 200 miles beyond the immediate region where gas is being produced. Ozone not only causes irreversible damage to the lungs, it is equally damaging to conifers, aspen, forage, alfalfa, and other crops commonly grown in the West. Adding to this is the dust created by fleets of diesel-driven water trucks working around the clock hauling the constantly accumulating condensate water from well pads to central evaporation pits.[19]

Increases in ground-level ozone not only impact regional haze and visibility, but can also result in dramatic impacts to human health. According to the EPA:

> Breathing ground-level ozone can result in a number of health effects that are observed in broad segments of the population. Some of these effects include:
>
> - Induction of respiratory symptoms
> - Decrements in lung function
> - Inflammation of airways
>
> Respiratory symptoms can include:
>
> - Coughing
> - Throat irritation
> - Pain, burning, or discomfort in the chest when taking a deep breath
> - Chest tightness, wheezing, or shortness of breath
>
> In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.[20]

Oil and gas development is one of the largest sources of VOCs, ozone, and sulfur dioxide emissions in the United States. By excluding from oil and gas development only 72,276 acres in the Buffalo planning area, while allowing fluid minerals development on 2,725,060 acres—as well as coal leasing on 4,775,136 acres—the agency fails to take any meaningful effort to address or mitigate these impacts. Air quality, human health, and compliance or interference with

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[19] The Endocrine Disruption Exchange. Undated. *Chemicals In Natural Gas Operations: Health Effects Spreadsheet and Summary*, available at: http://www.endocrinedisruption.com/chemicals.multistate.php (Sept 26 2013 Comment Letter) (attached as Exhibit 1).

[20] EPA, *Health Effects of Ozone in the General Population,* available at: http://www.epa.gov/apti/ozonehealth/population.html *(*Sept 26 2013 Comment Letter) (attached as Exhibit 1).

the EPA's Regional Haze rules must be analyzed in greater detail in the Buffalo RMP and FEIS. "The agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle Mfrs. v. State Farm Ins.*, 463 U.S. 29, 43 (1983).

1. BLM Failed to Consider the New Ozone Standards

Ozone has long been recognized to cause adverse health effects. Short term exposure to ozone causes multiple negative respiratory effects, from inflammation of airways to more serious respiratory effects that can lead to use of medication, absences from school and work, hospital admission, emergency room visits, and chronic obstructive pulmonary disease ("COPD"). Respiratory harm from ozone exposure, even at current standards, can harm healthy people. The impacts are much more serious for people with lung disease, such asthma. Long-term exposure to elevated levels of ozone results in numerous negative harmful effects, such as permanent lung damage and abnormal lung development in children. Long-term exposure may also increase risk of death from respiratory problems. Short- and long-term exposure to elevated levels of ozone can also harm people's hearts and cardiovascular system. *See* 79 Fed. 75234-311.

On December 17, 2014, EPA published a proposal to revise NAAQS for ozone to 65 to 70 parts per billion ("ppb") from the current 75 ppb. National Ambient Air Quality Standards for Ozone, 79 Fed. Reg. 75,234 (Dec. 17, 2014). This decision was driven by significant recent scientific evidence that the current standard of 75 ppb does not adequately protect public health and that ozone concentrations as low as 72 ppb can cause respiratory harm to young, healthy adults following exposure for less than eight hours. *Id.* at 75249-311 (citing controlled human exposure studies documenting adverse effects to lung function from ozone concentrations of 60 ppb and 72 ppb and epidemiologic panel studies documenting short- and long-term respiratory harms in cities that meet the 75 ppb ozone standard).[21] Recent studies have also documented decreased lung functioning and airway inflammation in young, healthy adults at ozone concentrations as low as 60 ppb; these effects, if repeated, can lead to more serious respiratory impairments. *Id.* at 75280, 75305.

Studies have documented "significant associations with respiratory emergency department visits with children and adults" in places that met the current standard of 75 ppb, but would not have met the proposed standards of 65-70 ppb. *Id.* at 75283-85, 75307 (citing Mar and Koenig, 2009; Dales et al., 2006). The existing standard is plainly insufficient to protect children with asthma and members of other sensitive groups. *Id.* at 75285-87. These impacts will be exacerbated by the worsening impacts of climate change. *Id.* at 75242.

In short, the best science shows that the 75 ppb standard is inadequate to protect public health: "the respiratory effects experienced following exposures to O_3 concentrations lower than

[21] Brown et al., 2008; Kim et al., 2011; Schelegle et al., 2009; Adams 2002; Adams 2008; Brunekreef et al., 1994; Spektor et al., 1988a; Ulmer et al., 1997; Gielen et al., 1997; Mar and Koenig, 2009.

75 ppb could be adverse to some individuals, particularly if experienced by members of at risk populations (*e.g.*, people with asthma, children)." *Id.* at 75280.

Revision of the ozone standard from 75 ppb to 65 or 70 ppb is expected to lead to "meaningful reductions in mean premature mortality." *Id.* at 75308. The Clean Air Scientific Advisory Committee ("CASAC") has noted that even a reduced standard of 70 ppb may not be sufficient to protect public health with an adequate margin of safety, and that a standard as low as 60 ppb would be scientifically justified. *Id.* at 75309-10. CASAC concluded that adverse respiratory effects "almost certainly occur" at lower levels for potentially at risk populations, such as children, the elderly, and people with asthma, people who are active or work outdoors, and people with lung diseases such as COPD. *Id.* at 75305. Thus, a lower level is necessary in order to protect the broader population. *Id.*

NEPA imposes on federal agencies a continuing duty to supplement draft or final environmental impact statements in response to significant new circumstances or information relevant to environmental concerns and bearing on the proposed action. *Idaho Sporting Cong., Inc. v. Alexander*, 222 F.3d 562, 566 n.2 (9th Cir. 2000); 40 C.F.R. § 1502.9(c)(1)(i). Here, EPA's proposal to revise ozone standards, as well as the science supporting the revision, constitute new circumstances and information, which BLM must take account of in its final EIS. The FEIS's conclusions regarding ozone are based on comparison to the existing NAAQS for ozone. EPA's proposed revision of the ozone NAAQS and the abundant science supporting the proposal plainly demonstrate that the current NAAQS are not sufficient to protect public health. Accordingly, the ozone analysis must be revised. The need for BLM to revise its ozone analysis in light of EPA's proposed new standard is especially acute given BLM's acknowledgement that its preferred alternative may contribute to violations of the *existing* standard. *See* FEIS at 676. Further, the FEIS's analysis of ozone neglects to address and consider that the impacts of climate change will worsen ozone pollution.

2. BLM Failed to Consider Indirect Air Pollution Impacts from Foreseeable Coal Combustion

Conservation Groups protest BLM's unlawful failure to consider the indirect effects of air pollution from coal combustion. The FEIS discusses air pollution impacts in Chapter 4. The FEIS acknowledges the obligation to consider air pollution that will result indirectly from the proposed action at FEIS 650. The FEIS further responds to comments regarding coal combustion in Appendix Y at Table Y.6. Conservation Groups comments addressing this issue are attached to this protest.

NEPA requires agencies to consider the indirect effects of their actions. 40 C.F.R. § 1502.16(b). Indirect effects are defined as "effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." *Id.* § 1508.8(b). Here, the FEIS and Proposed RMP authorize leasing of between 9 and 12 billion tons of coal through 2030. FEIS at 824, 843. The FEIS and Proposed RMP further recognize that virtually all coal mined in this area will be burned to generate electricity: "Coal produced is expected to be used almost entirely as steam coal for electric generation and other industrial applications." FEIS at 843. Despite actually foreseeing the inevitable combustion of this coal, the FEIS fails entirely

to address the myriad environmental impacts that will result from combustion of 9 to 12 billion tons of coal.

Combustion of coal and disposal of the resulting coal ash causes numerous and widespread harmful impacts.[22] Coal combustion causes tremendous emissions of nitrogen oxides ("NO_x"), sulfur oxides ("SO_2"), particulate matter ("PM"), and mercury, among other deadly pollutants.[23] This pollution causes widespread health impacts.[24] Mercury deposition from coal combustion, for example, is causing widespread health effects across the United States and the planet, particularly brain development in children. [25] One recent study by the Clean Air Task Force found the following health impacts for coal combustion in the United States:

Table 2

Health Impact	**Incidence (annual)**	**Valuation (in $millions)**
Mortality	13,200	$96,300
Hospital Admissions	9,700	$230
ER Visits for Asthma	12,300	$5
Heart Attacks	20,400	$2,230
Chronic Bronchitis	8,000	$3,560
Asthma Attacks	217,600	$11
Lost Work Days	1,627,800	$150[26]

The annual cost to the U.S. economy from these health impacts is staggering: over $100 billion.[27] When all of the externalities of coal are added up, the harm caused by coal to our national economy has been estimated at $175-$860 billion annually.[28] Indeed, it appears that the

[22] *See* Paul R. Epstein et al., *Full Cost Accounting for the Life Cycle of Coal* 1219 Ann. N.Y. Acad. Sci. 73 (2011) (life cycle of costs from coal causes $175 to 523 billion in damages in United States annually) (attached as Exhibit 11)

[23] *Id.* at 86-87.

[24] Clean Air Task Force, The Toll from Coal 10 (Sept. 2010) (13,000 annual mortalities in US) (attached as Exhibit 12); Conservation Action Trust, Urbanemissions.info, Greenpeace, Coal Kills: An Assessment of Death and Disease Caused by India's Dirtiest Energy Source at 1 (2012) (80,000 to 115,000 premature deaths annually) (attached as Exhibit 13); Health and Environment Alliance, The Unpaid Health Bill: How Coal Power Plants Make Us Sick, at 5 (March 2013) (estimating 18,500 premature deaths due to coal pollution annually in European Union) (attached as Exhibit 14); Edward Wong, *Air Pollution Linked to 1.2 Million Premature Deaths in China*, N.Y. Times (Apr. 1, 2013) (reporting 1.2 million premature deaths annually due to air pollution in China), *available at* http://www.nytimes.com/2013/04/02/world/asia/air-pollution-linked-to-1-2-million-deaths-in-china.html.

[25] *See, e.g.*, Bellenger, Economic Benefits of Methylmercury Exposure Control in Europe: Monetary Value of Neurotoxicity Prevention (2012) (monetizing impacts of mercury exposure) (attached as Exhibit 15); UNEP, A Time to Act, *supra*; Environmental Defense Fund, Mercury Alert: Cleaning Up Coal Plants for Healthier Lives (Mar. 2011) (attached as Exhibit 16); Mahaffery, *Adult Women's Blood Mercury Concentrations Vary Regionally in the United States: Association with Patterns of Fish Consumption (NHANES 1999-2004)*, 117 Envtl. Health Perspectives 47 (2009) (attached as Exhibit 17); Collin A. Eagles-Smith, et al., USGS, Mercury in Fishes from 21 National Parks in the Western United States—Inter- and Intra-Park Variation in Concentrations and Ecological Risk, Open-File Report 2014-1051 (2014) (attached as Exhibit 18).

[26] Clean Air Task Force, The Toll from Coal, *supra* at 10.

[27] *Id.*

[28] Epstein, et al., *Full Cost Accounting for the Life Cycle of Coal*, *supra.*

cost of the harms from burning coal is greater than the benefit derived from using coal for energy.[29] These effects of coal combustion should have been acknowledged, addressed, quantified, and monetized in the FEIS, given BLM's recognition that the coal from the planning area provides 20percent of the United States' coal supply. FEIS at 399. The FEIS, however, failed entirely to address these insidious and deleterious, but wholly foreseeable, impacts. There is no question that they are foreseeable. The FEIS specifically foresees that, pursuant to the Proposed RMP, coal production will continue at current rates of "400 and 500 million tons annually" and that the coal is "expected to be used almost entirely as steam coal for electric generation and other industrial applications." FEIS 405, 843. Because the combustion of the coal in the planning area is a reasonably foreseeable indirect effect of the Proposed RMP's decision to make it available for continued leasing and strip-mining, the FEIS was required to assess the air pollution impacts that will result from combustion. 40 C.F.R. § 1502.16(b). As noted, the FEIS expressly recognized its obligation to consider indirect air pollution impacts, FEIS at 650, but despite this recognition, nowhere in the analysis of air pollution effects does the FEIS even mention the word "indirect effect," let alone analyze the significance of continued combustion of 9-12 billion tons of coal.

3. BLM Failed to Adequately Analyze Air Quality Impacts in a Number of Other Regards

The FEIS falls short of complying with NEPA in a number of other regards. Notably, the FEIS relies on inaccurate information and false assumptions in disclosing air quality impacts and inappropriately fails to address the findings of BLM's own reports indicating that impacts will be significant under NEPA due to violations of the NAAQS and other air quality standards.

a. BLM Relied on Wildly Inaccurate Emission Inventory Data and Flawed Assumptions of Future Emissions

In comments on the DEIS, it was pointed out that the BLM was relying on wildly inaccurate emission inventory data and assumptions in analyzing and assessing the air quality impacts of the RMP. In the FEIS, the agency entirely failed to address these inaccuracies and ensure an adequate analysis of air quality impacts.

With regards to coal development, the FEIS indicates that current NOx emissions from coal production are 509 tons per year. *See* FEIS at 655. Yet as noted in comments on the DEIS, the BLM's own recent coal leasing EISs indicate that actual NOx emissions, at least from coal mining in Campbell County, are far higher. Indeed, a review of the BLM's recent EISs shows that, in total, NO_x emissions expected from present leasing activity may be as high as 21,074 tons/year. This is nearly 21 times higher than the BLM's estimate of current total NOx emissions in the planning area of 1,194 tons/year. The coal lease EISs further indicate these emissions will increase by 2020. For example, at the Black Thunder coal mine (including both

[29] Nicholas Z. Muller et al., Environmental Accounting for Pollution in the United States Economy 101 Am. Economic Review 1649 (2011) (cost of economic harm from coal vastly exceeds market value generated by coal) (Sept 26 2103 Comment Letter) (attached as Exhibit 1); Ben Machol & Sarah Razk, Economic Value of U.S. Fossil Fuel Electricity Health Impacts 52 Env't Int'l 75 (2013) (fossil fuel generation costs nation $361-886 billion annually in externalized costs) (attached as Exhibit 19).

the Jacobs Ranch and Black Thunder mines), total NOx emissions are expected to be more than 6,000 tons annually. Below is a table presenting the estimated NOx emissions from the development of current lease proposals in the Powder River Basin. These estimates were taken directly from the BLM's EISs.

NO_x Emissions from Pending Coal Lease Proposals in the Powder River Basin (in tons/year).[30]

Proposed Lease	Low Estimate	High Estimate
North and South Porcupine (North Antelope Rochelle)	3,323	3,856
West Jacobs Ranch (part of Black Thunder)	1,447	1,450
North, South, and West Hilight Field	4,507	4,743
Belle Ayr North (Belle Ayr)	1,333	1,398
West Coal Creek (Coal Creek)	1,033	1,493
Caballo West (Caballo)	1,597	1,830
Maysdorf II (Cordero Rojo)	2,708	3,022
West Antelope II (Antelope)	1,422	1,593
Hay Creek II (Buckskin)	1,625	1,689
TOTALS	**18,995**	**21,074**

This level of NO_x emissions puts surface coal mining activities in the Powder River Basin near the top of the list of highest NO_x emitters in the State of Wyoming, even surpassing many of the State's coal-fired power plants. Importantly, this level of NOx emissions would make coal mining the single largest source of NO_x emissions in Campbell County, Wyoming. According to EPA inventory data, the largest source of NO_x in Campbell County is currently Pacificorp's

[30] For the North and South Porcupine, West Jacobs Ranch, and North, South, and West Hilight Field leases, NO_x emissions data was obtained from the Final EIS for the Wright Area Coal Lease Applications. NO_x emissions data is presented on pages 3-83 (North, South, and West Hilight Field), 3-84 (West Jacobs Ranch), and 3-86 (North and South Porcupine). This EIS is available on BLM's website at http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/Wright-Coal.html.

For the Belle Ayr North, West Coal Creek, Caballo West, and Maysdorf II leases, NO_x emissions data was obtained from the Final EIS for the South Gillette Area Coal Lease Applications. NO_x emissions data is presented on page 3-64 (Belle Ayr North, West Coal Creek), 3-65 (Caballo West), and 3-66 (Maysdorf II). This EIS is available on BLM's website at http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/SouthGillette.html.

For the West Antelope II lease, NO_x emissions data was obtained from the Final EIS for the West Antelope II Coal Lease by Application. NO_x emissions data is presented in Appendix F, page 6. This EIS is available on BLM's website at http://www.blm.gov/wy/st/en/info/NEPA/documents/cfo/West_Antelope_II.html.

For the Hay Creek II lease, NO_x emissions data was obtained from the Draft EIS for the Hay Creek II Coal Lease by Application. NO_x emissions data is presented in Appendix F, page 6. This EIS is available on BLM's website at http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/HayCreekII.html.

Wyodak coal-fired power plant, which releases around 4,600 tons of NO_x annually.[31] Coal mines may release nearly five times as much NO_x as the Wyodak coal-fired power plant.

With BLM's own data showing that NOx emissions from coal mining are far higher, the Agency must revise its air quality analysis and assessment accordingly. Such a significant underestimation of emissions makes it extremely likely that the Agency is underestimating NOx impacts to ambient air quality, in particular the 1-hour NO_2 NAAQS.

We are also concerned that the BLM significantly underestimated oil and gas emissions in the planning area. Recent inventory data for the Powder River Basin prepared by the Western Regional Air Partnership ("WRAP") shows that current oil and gas emissions in Campbell, Johnson, and Sheridan Counties release far more NOx and volatile organic compound ("VOC") emissions than the BLM discloses in the FEIS.[32] For instance, the WRAP estimated that total NOx emissions from oil and gas activities in the planning area in 2006 amounted to 15,367 tons/year. Yet the FEIS asserts that current total emissions from all fluid minerals development (i.e., all oil and gas development) amount to 433 tons/year. The BLM similarly significantly underestimated total VOC emissions. Below are the NOx and VOC inventory results from the WRAP report for years 2006 and 2015.

Oil and Gas NOx and VOC Emissions in Buffalo Field Office, 2006 and 2015.

County	Total NOx 2006	Total VOC 2006	Total NOx 2015	Total VOC 2015
Campbell	9,726	6,608	9,701	8,819
Johnson	4,135	1,658	4,594	2,886
Sheridan	1,506	339	2,118	666
Totals	15,367	8,605	16,413	12,371

This significant discrepancy is difficult to understand. In referencing the WRAP report in the FEIS (cited as ENVIRON 2011), the BLM actually discloses some of the results of the inventory work. *See* FEIS at 297-298. The BLM notes the inventory found that total annual Powder River Basin oil and gas emissions amounted to 21,086 tons of NOx and 14,367 tons of VOCs. *See id*.

The BLM also appears to have underestimated, or completely failed to estimate, emissions from a number of activities in the Buffalo Field Office, indicating the agency did not adequately analyze and assess cumulative impacts. The BLM estimates, for example, that total baseline "non-BLM" NOx emissions in the planning area amount to 261 tons per year and total

[31] *See* Facility Emissions Report—Criteria Air Pollutants, Campbell County, Wyoming, *available at* http://iaspub.epa.gov/airsdata/adnet.ranking?geotype=co&geocode=56005&geoinfo=co~56005~Campbell+Coperce nt2C+Wyoming&pol=NOX&year=2002&fld=percent&fld=plt_name&fld=addr&fld=county&fld=state&fld=sic&rp p=25.

[32] The WRAP inventory is specifically referenced by BLM in the FEIS, indicating the inventory data is a part of the record. For reference, the inventory data is also available on the WRAP's website at http://www.wrapair2.org/pdf/2006_Baseline_Emiss_Powder_River_Basin_092311.pdf (baseline data) and http://www.wrapair2.org/pdf/2015_Proj_Emiss_Powder_River_Basin_112712.pdf (2015 projected data).

SO_2 emissions are 99 tons per year. *See* DEIS at 681. Yet according to data online from EPA, emissions just from coal-fired power plants in the planning area (which are presumably "non-BLM") totaled 5,154.8 tons of NOx and 4,293.7 tons of SO_2 in 2012.[33] Similarly, the BLM estimates that total annual baseline carbon dioxide ("CO_2") emissions in the planning area amount to 171,773 tons. *See* FEIS at 683. However, coal-fired power plants in the planning area emit more than 10.3 million tons of CO_2 annually, nearly 10 times more than BLM's asserted baseline. The table below shows the total NOx, SO_2, and CO_2 emissions from the power plants, which are all located near Gillette. Given that they are within the planning area, they must clearly contribute to cumulative emissions. It is unclear why these emissions were not considered by BLM. Regardless, this oversight is a clear violation of NEPA.

Power Plant	**2012 NOx Emissions**	**2012 SO_2 Emissions**	**2012 CO_2 Emissions**
Dry Fork	619.6	691.5	3,555,712.9
Neil Simpson II	502.6	419.6	790,343.2
Wygen I	558.8	394	895,126
Wygen II	222.1	164.8	745,459.2
Wygen III	200.6	325.9	1,004,747.8
Wyodak	3,051.1	2,297.9	3,315,332.3
TOTALS	5,154.8	4,293.7	10,306,721.4

Overall, it appears that BLM's assessment of current emissions in the planning area in the FEIS is completely baseless. To put into context how erroneous the emission inventory calculations are, BLM's estimate of total baseline NOx emissions in the planning area of 1,194 tons/year is more than 30 times lower than the total emissions just from coal mines (using high emission projections), oil and gas, and coal-fired power plants in the Buffalo Field Office. It similarly appears that BLM grossly underestimated (or outright failed to address) VOC, SO_2, and CO_2 emissions.

This in turn indicates that BLM's projections of future emissions under the proposed RMP and the other action alternatives are entirely baseless. For instance, the FEIS discloses that coal mining under the proposed RMP will lead to the emission of 630 tons per year of NOx. *See* FEIS at 677. This projection is completely unsupported and contradictory to the BLM's own disclosures in its coal leasing EISs.

In light of this, BLM was required to revise its DEIS in accordance with 40 C.F.R. § 1502.9(a) because it was so inadequate as to preclude meaningful analysis. The agency did not, and therefore the current FEIS violates NEPA due to its failure to analyze and assess potentially significant impacts.

[33] Coal-fired power plant emissions data can be queried from the EPA's online Air Markets Program Database, http://ampd.epa.gov/ampd/. For purposes of querying emissions data from coal-fired power plants in the planning area, we assessed emissions from the Dry Fork, Wyodak, Wygen I, II, and II, and Neil Simpson II coal-fired power plants.

b. BLM Failed to Analyze Emissions Outside of the Planning Area that May Affect Air Quality Inside the Planning Area

Although the planning area emissions inventories disclosed in the FEIS are fatally flawed, BLM further did not analyze or assess emissions outside the planning area that may affect air quality in the Buffalo Field Office. We are concerned that BLM has not adequately analyzed or assessed cumulative air quality impacts given this oversight.

As stated in comments on the DEIS, part of the problem is that BLM seems to have arbitrarily defined the cumulative effects area as the boundary of the Buffalo Field Office. This is wholly unsupported as it fails to account for emissions outside of the planning area that could reasonably affect air quality within. These emissions include, but are not limited to, emissions from nearby coal-fired power plants (including the Colstrip power plant directly north of the planning area in Colstrip, Montana and the Dave Johnston power plant directly south of the planning area near Glenrock, Wyoming), as well as oil and gas development activities, including exploration, production, and processing in Converse, Crook, Natrona, Niobrara, and Weston Counties, Wyoming, as well as Big Horn, Carter, Powder River, and Rosebud Counties, Montana.

BLM defined an arbitrary cumulative effects boundary that prevented the agency from adequately analyzing and assessing the cumulative impacts of the RMP. This violates NEPA.

c. BLM Failed to Address Modeling Completed for the Powder River Coal Review Showing Violations and Exceedances of NAAQS

The FEIS references and addresses the 2009 and 2014 Powder River Basin Coal Review air quality reports, cited as ENSR 2009b and PRB II, respectively. *See* FEIS at 295-297. These reports modeled future air quality impacts of activities within the Powder River Basin of northeastern Wyoming and southeastern Montana, including the entire Buffalo Field Office, with an emphasis on the impacts of coal mining. These reports were notable because, as BLM itself acknowledges in the FEIS, they not only found that current air quality values exceeded the 24-hour $PM_{2.5}$ and 24-hour PM_{10} NAAQS, but also projected air quality values greater then NAAQS for the 24-hour PM_{10}, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$ NAAQS by 2020. *See* FEIS at 296-297. What BLM does not acknowledge is that these modeling reports also reported current air quality values greater than the 1-hour NO_2 NAAQS, as well as projected air quality values greater than the 1-hour NO_2 and 1-hour SO_2 NAAQS.

The table below, prepared using data from the 2009 Powder River Coal Review report, demonstrates that current and projected air quality conditions are of significant concern. Given that air quality concentrations are already exceeding the NAAQS, as well as projected to worsen, it appears that the impacts of the Buffalo RMP will significantly strain air quality and fail to ensure compliance with federal air quality standards.

Baseline and Projected Levels of NAAQS Pollutants[34]

NAAQS	Standard	2004 Baseline Concentration	2020 Lower Coal Development Scenario	2020 Upper Coal Development Scenario
1-hour NO_2	100 ppb	217.43 ppb	233.97 ppb	235.35 ppb
Annual $PM_{2.5}$	15 $\mu g/m^3$	13.4 $\mu g/m^3$	16.3 $\mu g/m^3$	16.3 $\mu g/m^3$
24-hour $PM_{2.5}$	35 $\mu g/m^3$	87.6 $\mu g/m^3$	218.4 $\mu g/m^3$	218.4 $\mu g/m^3$
24-hour PM_{10}	150 $\mu g/m^3$	250.4 $\mu g/m^3$	624.1 $\mu g/m^3$	624.3 $\mu g/m^3$
1-hour SO_2	75 ppb	62.5 ppb	90.9 ppb	97.01 ppb

Similarly, the 2014 Powder River Basin Coal Review 3A report cites violations of the ozone, $PM_{2.5}$, and PM_{10} NAAQS in a number of Class I and sensitive Class II areas in the region. *See* PRB II at 3-7—3-18. These results are not cited in the FEIS or addressed in the analysis and assessment of impacts. In the FEIS, BLM asserts that the 2014 report "will not be" used to inform planning decisions because of unaccounted for oil and gas development in the Buffalo Field Office and adjacent areas. FEIS at 297. Yet if anything, the fact that the 2014 found violations of NAAQS even without considering additional emissions from future oil and gas development underscores the need for BLM to utilize the report in order to effectively disclose impacts and make an informed decision. The agency cannot simply reject information under NEPA because it believes it may underestimate impacts.

Amazingly, despite the reported data and its reference in the FEIS, the analysis and assessment of air quality impacts does not even attempt to analyze actual impacts to air quality in the context of air quality standards. Instead, the FEIS only compares emissions data. It is unclear why this modeling data was not addressed in the actual analysis and assessment of impacts, or why BLM did not attempt to analyze air quality impacts in light of the dire predictions of the Powder River Basin Coal Review. Nevertheless, it further underscores that BLM failed to comply with NEPA by refusing to analyze and assess how current and projected emissions from reasonably foreseeable development will directly, indirectly, and cumulatively affect air quality.

BLM's failure to address the results of the 2009 and 2014 Powder River Basin Coal Review report are compounded by the fact that both reports suffers from a number of flaws indicating its modeling projections fail to demonstrate the full scope of potentially significant air quality impacts.

In 2013, WildEarth Guardians commissioned an expert to review the air quality impacts analysis in the 2010 Final Environmental Impact Statement for Wright Area Coal Lease

[34] *See* Powder River Basin Coal Review report, cited as ENSR 2009b, at ES-6. Data for NO_2 and SO_2 are presented in the report in terms of microgram/cubic meter concentrations. For ease of comparison with the NAAQS for these pollutants, which are expressed in terms of parts per billion, the microgram/cubic meter concentrations were converted to parts per billion. Additionally, 1-hour NO_2 and SO_2 concentrations were only modeled for the Montana portion of the Powder River Basin.

Applications, which analyzed the impacts of issuing six new coal leases in the Powder River Basin of Wyoming, all of which are located in the Buffalo Field Office. This report was attached to comments submitted on the DEIS. As part of their review, the expert assessed the 2009 Powder River Basin Coal Review report, which informed much of BLM's analysis and assessment of air quality impacts in the FEIS for the Wright Area Coal Leases. In sum, the report (hereafter referred to as the "2009 PRB Coal Review Expert Report") found that the report suffered from a number of flaws, including:

- That the cumulative air quality analysis under-predicts impacts to both the 1-hour and annual NO_2 NAAQS and does not even analyze impacts to the 1-hour NO_2 NAAQS in Wyoming (instead only analyzing impacts in Montana). The Review also utilized insufficient background concentration data and failed to use accurate emissions inventory data. The review also fails to utilize the AERMOD model to appropriately analyze and assess near-field NO_2 impacts. *See* 2009 PRB Coal Review Expert Report at 14-19.

- The Powder River Basin Coal Review fails to analyze and assess impacts to the 8-hour ozone NAAQS in any way, providing no insight at all into how future development in the region will affect ozone concentrations in the air in light of all reasonably foreseeable direct, indirect, and cumulative air quality impacts. *See* 2009 PRB Coal Review Expert Report at 19-25.

- That the Powder River Basin Coal Review fails to accurately model $PM_{2.5}$ impacts, notably in that it fails to utilize the AERMOD model to assess near-field particulate matter impacts, fails to utilize appropriate background $PM_{2.5}$ concentration data, fails to rely on an accurate $PM_{2.5}$ emissions inventory (including a regional inventory of emissions outside the Powder River Basin that affect air quality within the Basin), and fails to address secondary $PM_{2.5}$ formation in the analysis of air quality impacts. *See* 2009 PRB Coal Review Expert Report at 30-34.

Furthermore, in 2014, WildEarth Guardians commissioned an expert critique of BLM's 2014 Powder River Basin Coal Review report, which similarly found that, in spite of the dire findings of the report, the air quality impacts of present and reasonably foreseeable development have been grossly underestimated by BLM.[35] This report (hereafter referred to as the "2014 PRB Coal Review Expert Report") was submitted by WildEarth Guardians in supplemental comments on the Buffalo RMP on August 6, 2014. In sum, the report found that:

- The monitoring data presented in the reports does not include all of the currently operating monitoring sites in the Powder River Basin, and as a result, elevated pollutant concentrations are not disclosed;

[35] *See* Copeland, C., "Technical Comments on the Bureau of Land Management's Air Quality Assessment Portion of the Powder River Basin Coal Review, Task 1A and 3A Reports," comments prepared for WildEarth Guardians (July 7, 2014).

- The NOx emissions inventory continues to underestimate current emissions by at least 25,000 tons per year;

- The modeling analysis under-predicts ozone and other air quality impacts due to significantly underestimated NO_X emissions;

- The EPA had commented to BLM that the modeling analysis is seriously flawed due to underestimation of modeling results;

- The modeling analysis does not follow EPA's modeling criteria for ozone and $PM_{2.5}$;

- The modeling fails to utilize proper methods for analyzing impacts to the NO_2 NAAQS; and

- Greenhouse gas emissions from present and reasonably foreseeable development are significantly underestimated.

That BLM did not address the air quality findings of the 2009 and 2014 Powder River Basin Coal Review in its analysis and assessment of air quality impacts indicates the agency did not rely on "high quality" information and "accurate" scientific analysis in accordance with NEPA. 40 C.F.R. § 1500.1(b). If anything, BLM rejected valid and credible scientific data indicating the air quality impacts are significant. Such selective dismissal of information reflects a lack of scientific and professional integrity, which are critical for effective NEPA implementation. 40 C.F.R. § 1502.24. The fact that expert critique indicates that the coal review reports underestimate the air quality impacts of reasonably foreseeable actions that will be implemented under the RMP further underscores that the agency fell far short of complying with NEPA in its FEIS.

C. BLM Failed to Comply with FLPMA's Air Quality Protection Mandate

The failure of BLM to adequately analyze and assess air quality impacts indicates the agency has fallen short of ensuring compliance with state and federal air quality standards in accordance with FLPMA. *See* 43 U.S.C. § 1712(c)(8). FLPMA, as well as regulations implementing FLPMA, specifically state BLM shall, in the process of developing and revising RMPS, "provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standard or implementation plans." *Id*.; *see also* 43 C.F.R. § 1601.0-8 (stating that approval of RMPs shall be consistent with 43 U.S.C. § 1712).

Here, because BLM refused to analyze and assess air quality impacts, and worse presented inaccurate information regarding present and reasonably foreseeable direct, indirect, and cumulative emissions, the proposed RMP fails to ensure protection of state and federal air quality standards. The fact that the agency refused to address its own reports demonstrating that air quality standards, including several NAAQS, would be violated as a result of reasonably foreseeable development further underscores that the proposed RMP fails to meet FLPMA's air quality protection mandate. Although BLM may assert that future development will comply with state and federal emission rules, such blind deference to other agencies' rules does not serve

to affirmatively demonstrate that activities directly under the regulatory authority of BLM will comply with federal air quality standards.

D. BLM Failed to Take a Hard Look at Climate Impacts

BLM failed to take a hard look at the climate impacts of its proposed RMP—perpetuating a disconnect between the agency's recognition of the effects of climate change and the agency's decisionmaking that allows for the continued leasing and development of massive quantities of coal, oil and gas. BLM failed to analyze cumulative and incremental effects of coal, oil, and gas development on climate change, and failed to consider the Conservation Groups detailed Comments and Supplemental Comments on the Draft EIS addressing climate change and GHG emissions, especially our Draft Comments at 18-34, September 26, 2013 Comments at 3-6, February 3, 2014 Supplemental Comments, and our April 15, 2015 Supplemental Comments, incorporated herein as Exhibits 1, 23, 2, and 5. 40 C.F.R. § 1506.6.

Agency decisionmaking at the RMP stage, where fundamental land use choices are made, must account for the full lifecycle of coal, oil and gas production. BLM's failure to account for lifecycle emissions and impacts represents a serious deficiency in the Proposed RMP and FEIS. As discussed below, BLM not only has the authority, but an obligation, to fully address GHG emissions and methane waste. Furthermore, BLM must consider not only the cumulative impact of the GHG emissions authorized by the Proposed RMP, it must also consider those emissions combined with other activities in the area. As noted above, "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct." *Ctr. for Biological Diversity*, 538 F.3d at 1217.

1. BLM Failed to Disclose the CO_2 Emissions from Burning 10.2 Billion Tons of Coal Made Available By the Proposed RMP

In its Proposed RMP/FEIS, BLM failed to adequately analyze and disclose the climate impacts of its proposal, particularly regarding the impact of burning 10.2 billion tons of coal. BLM significantly under reported the climate impacts of its proposed plan, misleading the public first by failing to account for the vast majority of the greenhouse gas emissions that will result from BLM's decision, then by failing to fully account for the harm those emissions will cause, and finally by asserting that these emissions do not matter because they account for only a small percentage of statewide totals. Each of these errors, standing alone, would be enough to condemn BLM's FEIS to reversal. Taken together, they reveal significant flaws in BLM's analysis and give the impression of an agency that is determined not to fully evaluate or disclose the climate impacts of what it is doing.

According to the U.S. Supreme Court, the mandatory disclosure of impacts is the "key requirement of NEPA." *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 96 (1983). According to the Tenth Circuit, an agency's NEPA review will be set aside where the agency (1) "entirely failed to consider an important aspect of the problem," (2) "offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view of the product of agency expertise," (3) "failed to base its decision on consideration of the relevant factors," or (4) made "a clear error of judgment." *Utah Envtl. Cong. v. Troyer*, 479 F.3d 1269, 1280 (10th Cir. 2007).

As explained in Section B.2., above, NEPA requires agencies to consider the indirect effects of their actions. 40 C.F.R. § 1502.16(b). Indirect effects are defined as "effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." *Id.* § 1508.8(b).

BLM's Proposed RMP and FEIS make available for leasing between 9 and 12 billion tons of coal through 2030, (which BLM also pegs specifically at 10.2 billion tons). FEIS at 823, 824, 843. The FEIS and Proposed RMP further recognize that virtually all coal mined in this area will be burned to generate electricity: "Coal produced is expected to be used almost entirely as steam coal for electric generation and other industrial applications." FEIS at 843. Given that BLM acknowledges that all of the coal made available by its plan will be burned, it is unlawful for BLM to then fail to account for the emissions that will result from combustion. In the context of the climate impacts of the plan, those emissions are not just part of the equation – they are basically the whole equation. By not even acknowledging that those emissions will occur – as BLM must given the indirect effects requirement of NEPA – BLM makes it appear as though the climate impacts of its proposal are comparatively minor, when in fact the opposite is true.

In comments on the draft RMP revision, the Conservation Groups explained BLM's error, noting that BLM's initial draft "does not include the subsequent combustion of these resources," and that the RMP calls for "a huge amount of fossil fuel production, which the agency's analysis leaves completely detached from the reality that these resources are being produced for the sole purpose of combustion." DEIS Comments at 21. As we explained in DEIS Comments, "[a]gency decisionmaking – particularly at the RMP stage, where fundamental land use choices are made – must be reflective of this broader reality," and that BLM's "failure to account for the full life cycle of coal, oil, and gas production represents an incurable deficiency in the Draft RMP and EIS." *Id.*

In response to comments received regarding climate impacts, BLM took a shockingly cavalier approach. Instead of attempting to justify its failure to include indirect emissions in its climate analysis, BLM simply asserted that it did all it could to disclose climate impacts: "BLM can only reasonably quantify and disclose GHG emissions for the alternatives and . . . BLM has disclosed the additional GHG contribution that would result from the planning area alternatives." FEIS, App. Y at 2693.

It is certainly true that BLM disclosed direct greenhouse gas emissions emitted during the mining process, which the agency calculated to be between 9.74 and 9.81 million metric tons of CO_2-e in 2024 for the various alternatives. FEIS at 683, Table 4.14. BLM, however, never addressed its decision not to calculate CO_2 emissions from the combustion of coal from the planning area, even though BLM and other federal agencies have been calculating CO_2 emissions from combustion for coal mining proposals for years. *See, e.g.*, BLM, Wright Area EIS (2010); BLM, Alton Coal Mine DEIS (2011) and SEIS (2015); Forest Service, West Elk Coal Lease Modification EIS (2013); BLM, West Antelope EA (2014); OSM, Bull Mountain EA (2014); Forest Service, Greens Hollow EA (2015).

Conservation Groups maintain that BLM did not, in fact, disclose all of the additional GHG emissions that would result from the planning area alternatives. When taking into account direct, indirect, and cumulative impacts, as BLM must, it becomes clear that BLM improperly downplayed the climate impacts of the plan by omitting the key component of the equation when tallying up the greenhouse gas emissions. When evaluating the climate impacts of a federal coal lease, CO_2 emissions from combustion are by far the biggest component, and they are also the component that BLM omitted here.

BLM's failure to give the public a true sense of the scale of climate harms becomes clear when one compares the magnitude of the climate emissions that BLM included in the FEIS with those it did not. For those direct climate emissions that BLM decided to disclose, taking the high end of BLM's 2024 estimates (9.81 million metric tons of CO_2e) and multiplying by the twenty year planning timeframe yields a total of 196.2 million metric tons of CO_2 over the life of the RMP.

By way of comparison, the total amount of CO_2 released during combustion of the 10.2 billion tons of coal that the four BLM alternatives make available is orders of magnitude higher than what BLM disclosed from direct emissions. To convert from "tons of coal mined" to "tons of CO_2 emitted during combustion," BLM and other agencies use a conversion factor that takes into account specific aspects of the coal seam, such as sulfur content and heat generating capacity, among other factors. In the past, for coal mines in the Wyoming portion of the Powder River Basin (which includes the planning area), BLM has used 1.659 as the conversion factor,[36] meaning that for every ton of coal mined, there will be 1.659 tons of CO_2 emitted when that same coal is burned in coal fired power plants. Using BLM's Wyoming PRB conversion factor, the result is that the 10.2 billion tons of coal called for in the RMP will generate 16.9 billion tons of CO_2 during combustion.

BLM may consider that to be a lot of CO_2, or it may not. The key consideration for purposes of NEPA, however, is that BLM told the public that its plan would result in up to 196.2 million tons of CO_2e, but the reality is that the combustion alone will generate 16.9 billion tons of CO_2. Put another way, the actual climate emissions are at least 86 times greater than what BLM disclosed to the public.

By not calculating *any* of the CO_2 emissions from combustion of the 10.2 billion tons of coal made available by the Proposed RMP, BLM has omitted from consideration the vast majority of the greenhouse gasses associated with the plan.[37] NEPA requires agencies to analyze and disclose the direct and indirect impacts of their decisions. BLM's failure to meet this simple, clear, and long-standing mandate renders BLM's Final EIS both misleading and legally invalid. With regard to the climate impacts of the proposal, and the 10.2 billion tons of coal that the plan calls for burning in coal-fired power plants, BLM has thus "entirely failed to consider an

[36] BLM, WRIGHT AREA FEIS at 4-140 (2010), available at http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/Wright---Coal.html.

[37] *See*, *e.g.*, OSM, Environmental Assessment for the Bull Mountain Mine, estimating combustion-related CO_2 emissions account for roughly 96 percent of the total CO_2 emissions from the mine, factoring in mining, transportation, and combustion-related emissions.

important aspect of the problem," *Utah Envtl. Cong.*, 479 F.3d at 1280, and the FEIS must be set aside.

2. BLM Failed to Consider the Social Cost of Carbon

In addition to failing to calculate the indirect CO_2 emissions that will result from burning coal from the planning area, BLM also failed to take the next step and tell the public what impact those emissions will have on the environment. Instead, BLM relied solely on the *amount* of CO_2e as a proxy for disclosing the *impact* of those emissions. In doing so, BLM violated NEPA by failing to utilize the social cost of carbon – a tool created by federal agencies and generally accepted in the scientific community – that would have allowed the agency to analyze the impact of these emissions.

Conservation Groups raised this issue, and the social cost of carbon specifically, in comments on the draft RMP. Conservation Groups explained that impacts to human health and climate change must be evaluated under NEPA, and asserted that merely quantifying the emissions that cause those impacts is insufficient. As Conservation Groups explained, "[t]here is no discussion or analysis of how emissions will impact specific resources in the Buffalo planning area. . . . It is not enough to simply identify an issue of concern, such as GHG pollution." DEIS Comments at 25. Moreover, the comment letter then flagged the fact the federal working group, which created the social cost of carbon in 2010, had recently revised its estimates of the damage caused by each additional ton of carbon pollution to around $43 per ton. *Id.*

In response to these comments, BLM asserted only that it did not have the ability to analyze climate impacts from incremental GHG pollution caused by coal, oil, and gas development in the planning area, stating, "BLM does not have the tools or resources to analyze climate change impacts." FEIS, App. Y at 2693.

This position is flatly unsupported as the social cost of carbon is just such a tool. NEPA specifically requires federal agencies to analyze and disclose the environmental effects of their actions, including "ecological . . . aesthetic, historic, cultural, economic [and] health" impacts.[38] Where "information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known," NEPA regulations direct agencies to evaluate a project's impacts "based upon theoretical approaches or research methods generally accepted in the scientific community."[39] The social cost of carbon is based on generally accepted research methods and years of peer-reviewed scientific and economic studies. As such, it is the best tool now available for agencies to use in predicting and analyzing the climate impacts of proposed federal actions. BLM's failure to use the social cost of carbon thus violates the requirement that agencies use the generally accepted tools available to them in order to evaluate the impacts of their decisions.

This failure is far more than a mere flyspeck. Using any of the interagency working group's ("IWG") social cost of carbon ("SCC") values demonstrates that the production of coal,

[38] 40 C.F.R. § 1508.8.
[39] 40 C.F.R. § 1502.22(b)(4).

oil, and gas as called for BLM's plan will likely result in massive economic damages associated with climate change. The updated interagency SCC estimates for 2020 are $12, $43, $65 and $129 (in 2007$).[40] The IWG does not instruct federal agency which discount rate to use, suggesting the 3 percent discount rate ($43 per ton of CO_2) as the "central value," but further emphasizing "the importance and value of including all four SCC values[;]" i.e., that the agency should use the range of values in developing NEPA alternatives.[41]

The agency's obligation to analyze the costs associated with GHG emissions through NEPA was directly affirmed by the court in *High Country Conservation Advocates v. U.S. Forest Service*, 52 F. Supp. 3d 1174 (D.Colo. 2014). In his decision, Judge Jackson identified the IWG's SSC protocol as a tool to "quantify a project's contribution to costs associated with global climate change." *Id.* at 1190.[42] "The critical importance of [climate change]…tells me that a 'hard look' has to include a 'hard look' at whether this tool, however imprecise it might be, would contribute to a more informed assessment of the impacts than if it were simply ignored." *Id.* at 1193. To fulfill this mandate, they agency must disclose the "ecological[,] … economic, [and] social" impacts of the proposed action. 40 C.F.R. § 1508.8(b).

The CEQ Guidance also recently affirmed the inclusion of this type of economic assessment.

> If tools or methodologies are available to provide the public and the decision-making process with information that is useful to distinguishing between the no-action and proposed alternatives and mitigations, then agencies should conduct and disclose quantitative estimates of GHG emissions and sequestration.
>
> Federal social cost of carbon, which multiple Federal agencies have developed and used to assess the costs and benefits of alternatives in rulemakings, offers a harmonized, interagency metric that can provide decisionmakers and the public with some context for meaningful NEPA review.

CEQ Guidance at 15, 16; *see also* 40 C.F.R. § 1508.23.

According to BLM, total combined production emissions in the planning area for 2015 is 9.55 million metric tons of CO_2e, FEIS at 683—this alone results in a social cost of carbon of **$410,650,000** per year. However, and as detailed below, this figure is depressed based on BLM's reliance on the outdated global warming potential ("GWP") for methane of 21. FEIS at 682.

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[40] *See* 2013 TSD at 3 (including a table of revised SCC estimates from 2010-2050). To put these figures in perspective, in 2009 the British government used a range of $41-$124 per ton of CO_2, with a central value of $85 (during the same period, the 2010 TSD used a central value of $21). WRI Report at 4. The UK analysis used very different assumptions on damages, including a much lower discount rate of 1.4percent. The central value supports regulation four times a stringent as the U.S. central value. *Id.*

[41] *See* 2013 TSD at 12.

[42] *See also id.* (noting the EPA recommendation to "explore other means to characterize the impact of GHG emissions, including an estimate of the 'social cost of carbon' associated with potential increases in GHG emissions.") (citing Sarah E. Light, *NEPA's Footprint: Information Disclosure as a Quasi-Carbon Tax on Agencies*, 87 Tul. L. Rev. 511, 546 (Feb. 2013)).

Applying the IPCC's 20-year GWP for methane of 87 results in total combined production emissions of 38.7 $MMTCO_2e$, or a social cost of carbon of **$1,666,178,448**.

Critically, this figure fails to consider the downstream combustion emissions of fossil fuel production in the planning area, as discussed above. *See* CEQ Guidance ("emissions from activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate from the agency action (often referred to as upstream emissions) and as a consequence of the agency action (often referred to as downstream emissions) should be accounted for in the NEPA analysis.") (citing 40 C.F.R. § 1508.8). According to BLM, annual fossil fuel production in the planning area is as follows: 461 million tons of coal production (FEIS at 2250); 9.8 million barrels of oil (FEIS at 410); and a combined 442.2 billion cubic feet of natural gas[43] (FEIS at 410-11). After converting existing production into tons of CO_2e from combustion emissions, this results in: 1.3 billion tons of CO_2e of coal; 4.2 $MMTCO_2e$ of oil; and 23.4 $MMTCO_2e$ of gas. This results in a social cost of carbon from downstream fossil fuel combustion of: **$56,693,780,000 in coal; $181,202,000 in oil; and $1,008,154,092 in gas**; or a combined social cost of carbon from combustion of fossil fuels from the planning area of **$57,883,136,092**. Thus, the combined social cost of planning area emissions from fossil fuel production and downstream combustion is **$59,549,314,540,** each year.

BLM's failure to consider the $59.5 billion in annual costs of GHG emissions from the planning area effectively assumes a price of carbon that is $0. *High Country,* 52 F. Supp. 3d at 1192 (holding that although there is a "wide range of estimates about the social cost of GHG emissions[,] neither BLM's economist nor anyone else in the record appears to suggest the cost is as low as $0 per unit. Yet by deciding not to quantify the costs as all, the agencies effectively zeroed out the cost in its quantitative analysis.").

An agency must "consider every significant aspect of the environmental impact of a proposed action." *Baltimore Gas & Elec. Co.*, 462 U.S. at 107 (quotations and citation omitted). This includes the disclosure of direct, indirect, and cumulative impacts of its actions, including climate change impacts and emissions. 40 C.F.R. § 1508.25(c). The need to evaluate such impacts is bolstered by the fact that "[t]he harms associated with climate change are serious and well recognized," and environmental changes caused by climate change "have already inflicted significant harms" to many resources around the globe. *Massachusetts v. EPA*, 549 U.S. 497, 521 (2007); *see also id.* at 525 (recognizing "the enormity of the potential consequences associated with manmade climate change."). Among other things, the agency's analysis must disclose "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity[,]" including the "energy requirements and conservation potential of various alternatives and mitigation measures." 42 U.S.C. § 4332(c); 40 C.F.R. § 1502.16(e). *See also* Executive Order 13514, 74 Fed. Reg. 52,117 (Oct. 5, 2009) (requiring government agencies to disclose emissions information annually from direct and indirect activities). Failing to perform such analysis undermines the agency's decisionmaking process and the assumptions made.

[43] This includes 13.2 bcf of natural gas, and 429 bcf of CBNG.

Applying the SCC, as provided above, takes abstract emissions and places them in concrete, economic terms. It also allows the agency to easily perform the cost-benefit analysis envisioned by EO 12866, as well as BLM's own policy. Specifically, Instruction Memorandum No. 2013-131 (Sept. 18, 2013) is reflective of BLM's attempt to internalize the costs of such emissions:

> All BLM managers and staff are directed to utilize estimates of nonmarket environmental values in NEPA analysis supporting planning and other decision-making where relevant and feasible, in accordance with the attached guidance. At least a qualitative description of the most relevant nonmarket values should be included for the affected environment and the impacts of alternatives in NEPA analyses….
>
> Nonmarket environmental values reflect the benefits individuals attribute to experiences of the environment, uses of natural resources, or the existence of particular ecological conditions that do not involve market transactions and therefore lack prices. Examples include the perceived benefits from hiking in a wilderness or fishing for subsistence rather than commercial purposes. The economic methods described in this guidance provide monetary estimates of nonmarket values. Several non-economic, primarily qualitative methods can also be used to characterize the values attributed to places, landscapes, and other environmental features. Guidance on qualitative methods for assessing environmental values, including ethnography, interviews, and surveys, is in preparation.
>
> Ideally, economic analysis for resource management should consider all relevant values, not merely those that are easy to quantify. Utilizing nonmarket values provides a more complete picture of the consequences of a proposed activity than market data alone would allow. The BLM's Land Use Planning Handbook, Appendix D encourages inclusion of information on nonmarket values, but does not provide detail.

The agency simply cannot ignore its obligation to consider the costs of GHG emissions in its decisionmaking on the Buffalo Proposed RMP/FEIS.

Nor can the agency tout the benefits of coal, oil and gas development without similarly disclosing the costs. *See* 40 C.F.R. § 1502.23. Here, BLM cites the economic benefits of a project—such as job creation or federal royalties—while failing to discuss the costs. FEIS at 1650, 1652. This type of misleading and one-sided analysis is expressly forbidden. *See Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446-47 (4th Cir. 1996) ("it is essential that the EIS not be based on misleading economic assumptions); *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (agency choosing to "trumpet" an action's benefits has a duty to disclose its costs).

3. BLM Failed to Consider Available Mitigation Measures that Could Avoid GHG Emissions and Reduce Methane Waste

As noted above, NEPA imposes "action-forcing procedures … requir[ing] that agencies take a *hard look* at environmental consequences." *Methow Valley,* 490 U.S. at 350 (citations omitted) (emphasis added). These "environmental consequences" may be direct, indirect, or cumulative. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. BLM is required to take a hard look at those impacts as they relate to the agency action, and the Buffalo RMP fails to provide this hard look analysis. "Energy-related activities contribute 70percent of global GHG emissions; oil and gas together represent 60percent of those energy-related emissions through their extraction, processing and subsequent combustion."[44] Even if science cannot isolate each additional oil or gas well's contribution to these overall emissions, this does not obviate BLM's responsibility to consider oil and gas development in the BFO from the cumulative impacts of the oil and gas sector. In other words, BLM cannot ignore the larger relationship that oil and gas management decisions have to the broader climate crisis that we face. Here, the Proposed RMP conducted no air quality modeling for emissions, and failed to provide a hard look detailed analysis of impacts. *See* FEIS at 680; *see also Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998) ("To 'consider' cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing the [agency's] decisions, can be assured that the [agency] provided the hard look that it is required to provide."). If we are to stem climate disaster—the impacts of which we are already experiencing—the agency's resource management decisions, as provided in the Buffalo Proposed RMP, must be reflective of this reality and plan accordingly.

The Proposed RMP/FEIS fails to do so. BLM provides that "[o]il and gas production is the second major contributor to GHG emissions for all alternatives," after methane emissions from surface coal mining operations. FEIS at 683. The agency then continues, acknowledging that "[t]he largest sources of GHG emissions within the oil and gas sector include CO_2 emissions from natural gas compressors and drill rig engines, and fugitive CH_4 emissions from wellhead equipment, pneumatic devices and tanks." *Id.* While the Buffalo RMP offers that "[c]onsiderable reductions in these estimated emissions may be realized at the time of actual development through control technologies," none of these measures are required. Specifically, Appendix N to the Proposed RMP, the "Buffalo Air Resource Management Plan," aims to reduce emissions through "operator committed measures." *Id.* at 2488. In other words, the proponent of a project will determine what control technologies they want to employ, if any at all. For example, the FEIS states: "BLM *may* require proponents to demonstrate compliance with ambient air quality standards and other federal, state, and local air quality regulations." FEIS at 565 (emphasis added). The agency then offers, at Table N.3, "Sample Emission Reduction Strategies for Oil and Gas Development Projects" as an example of mitigation strategies that could be used. *Id.* at 2490-93; *see National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001) ("A 'perfunctory description,' or 'mere listing of mitigation measures, without supporting analytical data,' is insufficient."). This voluntary and generic approach to GHG emissions, and

[44] International Investors Group on Climate Change, *Global Climate Disclosure Framework for Oil and Gas Companies* (Sept 26 2013 Comment Letter) (attached as Exhibit 1).

specifically the issue of methane waste, fails to satisfy the requirements of SO 3226, NEPA, FLPMA, the MLA, and the Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases (NTL-4A). When commenters to the DEIS raised concerns about the lack of GHG mitigation, BLM's response was dismissive: "The BLM does not require mitigation for GHGs which have no ambient standards by which to establish a compliance threshold." FEIS at 2690, 2692 (Appendix Y). The NEPA process is not only about compliance with federal statutes, rather it mandates that the agency take a "hard look" and evaluate a proposed action's effect on the human environment. 40 C.F.R. § 1508.14 (2015); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). Here, BLM dismissed that "hard look" responsibility and erroneously reduced NEPA analysis to merely compliance enforcement. Near-term reductions in methane emissions offer a critical opportunity to slow down rapid warming and reduce the peak of the warming, as detailed below. If methane emissions continue to significantly increase, they will substantially increase the pace and severity of climate change.

The Proposed RMP's brief discussion of possible GHG emissions mitigation also does not align with the CEQ's Guidance on GHGs. *See* CEQ Guidance at 21. CEQ Guidance—reiterative of existing regulations—directs BLM to analyze the quality of mitigation measures for GHG emissions, which the agency fails to do. *Id.* at 20 (providing that "this evaluation should *carefully* examine the mitigation for its permanence, verifiability, enforceability, and additionality."). BLM failed to even mention these considerations when addressing GHG emissions mitigation, and also fails to do so in Table N.3. FEIS 2490-93. The CEQ additionally outlines that in instances where mitigation measures "address the effects of climate change, the agency's final decision should identify those mitigation measures and the agency should consider adopting an appropriate monitoring program." CEQ Guidance at 21. Here, the BFO again suggests possible mitigation measures, which may or may not actually occur, and fails to provide any qualitative assessment of effectiveness. FEIS 2489-90. While BFO may be "identifying" mitigation measures, the list does not provide any basis to evaluate whether mitigation is actually being carried out. The CEQ Guidance recognizes the benefit of monitoring mitigation based on the agency's final decision and its outline for mitigation. CEQ Guidance at 21. Here, to create a monitoring program, more than a brief list of possible mitigation measures must exist. FEIS 2490-93. A broad list of possible options that may or may not ever be enforced cannot be the basis of a feasible and stable monitoring program.

By making absolutely no commitment on mitigation measures and best management practices ("BMPs") to address the GHG emissions from oil and gas leasing and development, the BFO is missing a critical opportunity and, indeed, obligation, to address the serious issue of methane ("CH_4") emissions and waste. *See* FEIS at 656 ("For major projects . . . BLM *may* require proponents to demonstrate compliance with ambient air quality standards and other federal, state, and local air quality regulations.") (emphasis added); FEIS at 683 ("Considerable reductions in these estimated emissions *may* be realized at the time of actual development through control technologies . . . ."). As detailed in Draft Comments, incorporated herein as Exhibit 1, at 32-33, there are readily available and cost-effective mitigation technologies that can drastically reduce the amount of methane lost during production.

Our concern with methane is particularly acute because BLM uses a scientifically stale global warming potential ("GWP") of 21 for methane on the basis, as we understand it, of EPA's use of the Intergovernmental Panel on Climate Change's ("IPCC's) 1997 Second Assessment

Report ("AR2").[45] FEIS at 682. Even though EPA has since taken action to update methane's warming potential based on the Fourth Assessment Report ("AR4")[46], wherein methane's 100-year warming potential is pegged at 25, federal agencies, like BLM, still lazily adopt EPA's old, scientifically stale warming potential of 21.[47] Moreover, the IPCC has issued a new report, the 2013 Fifth Assessment Report ("AR5"), which supersedes both the AR2 and AR4 reports. The IPCC AR5 explains that fossil methane, over a 100-year time frame and accounting for climate-carbon feedbacks, is 36—*not* 21 or 25—times as potent as carbon dioxide.[48] Over a 20-year time frame, which EPA does not even acknowledge, and again accounting for climate-carbon feedbacks, the IPCC's AR5 report explains that fossil methane's warming potential is 87 times as potent as carbon dioxide.[49] Regarding the difference between the 100- and 20-year warming periods, the IPCC AR5 report explains "there is no scientific argument for selecting 100 years [as a time frame for GWPs] compared with other choices."[50] While both the 100-year or 20-year time frames should be accounted for in NEPA analyses (in particular because doing so involves a simple calculation), we emphasize the 20-year time frame to underscore the importance of near-term GHG reduction opportunities[51] and to better align GHG emissions assessments with the lifetime of Federal projects.

Here, not only does the agency cite dated GWP estimates for methane of 21 times the warming potential of CO_2, FEIS at 682, but BLM also relies on the 100-year time period for these estimates, which fails to recognize the urgency of the climate problems we face. Quite simply, we do not have a century to make the necessary changes. Many climate effects are projected before the end of the century. By looking only at the 100-year figure, BLM's analysis ignores costs that accrue in the interim. Methane emissions factor heavily into how we will address greenhouse gas pollution in the near term. Indeed, the IPCC projects that warming increases may reach 3.6°F (2°C) within decades.[52] It's possible that we will experience this additional average heat well before mid-century. The dramatic climate impacts we've seen to date come from an increase of only about 1.5°F.[53] The dire reality we face was again reiterated in the IPCC's *Climate Change 2014 Synthesis Report* (attached as Exhibit 20), concluding:

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[45] http://epa.gov/climatechange/ghgemissions/gases/ch4.html. EPA's GWP of 21 for methane is, notably, based on the IPCC's 1997 Second Assessment Report that, as discussed herein, has been superseded by the IPCC's Fifth Assessment Report at 8-58.

[46] *See* http://www.epa.gov/ghgreporting/documents/pdf/2013/documents/2013-data-elements.pdf (p. 21 Table 2); http://www.epa.gov/ghgreporting/documents/pdf/2013/documents/memo-2013-technical-revisions.pdf (Attachment A, p. 96).

[47] *See*, *e.g.*, BLM, Environmental Assessment for the Fram Whitewater Unit Master Development Plan, DOI-BLM-CO-130-2012-0003-EA at 59 (June 2014) (www.blm.gov/style/medialib/blm/co/field_offices/grand_junction_field/oil_and_gas.Par.2317.File.dat/Fram_Whitewater__EA_6-13-2014.pdf).

[48] IPCC, *Climate Change 2013: The Physical Science Basis, Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* at Ch. 8, p. 714, Table 8.7 (2013) (www.climatechange2013.org/).

[49] *Id.*

[50] *Id.* at 711.

[51] Shindell, D., *et al*., *Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security*. Science. Vol. 335, no. 6065 pp. 183-189 (Jan. 13, 2012).

[52] *Id.* at 27-28.

[53] *Id.* at 3.

> Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.
>
> Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.

That the BFO failed to make the use of *any* methane mitigation technology a requirement for existing and future oil and gas development in the planning area is inexcusable. For example, the agency provides: "Considerable reductions in these estimated emissions may be realized at the time of actual development through control technologies such as electric compressor engines, 'green completions,' low or no bleed pneumatic devices, and capture and control of leaks and vents." FEIS at 683. Such optional mitigation measures fail to meaningfully address the critical challenge of addressing methane waste. Additionally, having mandatory methane mitigation measures in the RMP that must apply to future leasing and COAs puts oil and gas developers on notice that they must implement these measures and allows them to factor these measures into their investment decisions. BLM's failure to impose mandatory methane mitigation measures in the RMP invites challenges to such measures at the APD stage.

To comply with NEPA, BLM must take a hard look at direct, indirect, and cumulative impacts, as discussed above. 40 C.F.R. §§ 1502.16(a), (b); 1508.25(c). In evaluating impacts, the agency must discuss "[e]nergy requirements and conservation potential of various alternatives and mitigation measures," "[n]atural or depletable resource requirements and conservation potential of various alternatives and mitigation measures," and "[m]eans to mitigate adverse environmental impacts (if not fully covered under 1502.14(f))." 40 C.F.R. §§ 1502.16(e), (f), (h).

We emphasize, again, the "heart" of the NEPA process: BLM's duty to consider "alternatives to the proposed action" and to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. §§ 4332(2)(C)(iii), 4332(2)(E); 40 C.F.R. § 1502.14(a). Alternatives are critical because, "[c]learly, it is pointless to 'consider' environmental costs without also seriously considering action to avoid them." *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Commn.*, 449 F.2d 1109, 1128 (D.C. Cir. 1971).

Moreover, the BFO fails to quantify the magnitude of methane pollution from oil and gas emissions sources within the planning area. Oil and natural gas systems combined are the biggest contributor to methane emissions in the United States, accounting for over one quarter of all methane emissions, or 129.9 million metric tons of CO_2e each year (which does not include CH_4 that has been flared, captured, or otherwise controlled).[54] However, methane emission rates can

[54] *See* U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, at 3-63, EPA 430-R-14-003

differ quite dramatically from one oil and gas field to the next, and, depending on the type of mitigation and emission controls employed, emissions can range anywhere from 1 percent to 12 percent of production.[55] In order to sufficiently understand the scope of methane emission impacts expected from the proposed action, BLM should quantify estimated emission rates and analyze alternatives that would mitigate these impacts. However, even without specific data from the proposed action, we can assume leakage somewhere between these two extremes and, even at the low end, emissions reductions would not be trivial. The agency's refusal to consider any mitigation measures that would reduce these emissions fails to satisfy BLM's NEPA obligations.

Even setting aside the issue of climate change, every ton of methane emitted to the atmosphere from oil and gas development is a ton of natural gas *lost*. Every ton of methane lost to the atmosphere is therefore a ton of natural gas that cannot be used by consumers. Methane lost from federal leases will also not yield royalties otherwise shared between federal, state, and local governments. This lost gas reflects serious inefficiencies in how BLM oil and gas leases are developed. Energy lost from oil and gas production—whether avoidable or unavoidable—reduces the ability of a lease to supply energy, increasing the pressure to drill other lands to supply energy to satisfy demand. 40 C.F.R. §§ 1502.16(e)-(f). In so doing, inefficiencies create indirect and cumulative environmental impacts by increasing the pressure to satisfy demand with new drilling. 40 C.F.R. §§ 1508.7, 1508.8(b).

Despite this fact, and the agency's acknowledgment that, "[a]s the major component of natural gas, CH_4 emissions from oil and gas exploration, production, and transportation can be considerable," FEIS at 682, at 533, the RMP characterizes cumulative GHG emissions from each of the Alternatives as negligible, providing:

> The total estimated GHG emissions for 2015 for Alternative D (Proposed RMP) of 9.17 million metric tons (MMt) are approximately equal to 0.13percent of the total U.S. 2008 GHG emissions of 6,956 MMT.

Id. at 683. We reject any notion that the emissions from specific activities in the Buffalo Proposed RMP are so small as to warrant a dismissive analysis. The reality of climate change is that it is caused by myriad, specific sources of GHG pollution. The CEQ Guidance states that comparing agency action's emissions to global emissions is "not an appropriate method for characterizing the potential impacts associated with a proposed action." CEQ Guidance at 9. That comparison does nothing more than outline the challenging nature of climate change and reinforce the "fact that diverse individual sources of emissions each make relatively small addition to global atmospheric GHG concentrations that collectively have huge impact." *Id.* For

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(April 15 2014) , available at http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2014-Main-Text.pdf.

[55] *See, e.g.*, David T. Allen, et. al., *Measurements of methane emissions at natural gas production sites in the United States*, PNAS (Aug. 19, 2013) (finding emissions as low as 1.5percent of production at select cites) (attached as Exhibit 21); Anna Karion, et. al., *Methane emissions estimate from airborn measurements over a western United States gas field*, GEOPHYSICAL RESEARCH LETTERS (Aug. 27, 2013) (finding emissions of 6 to 12 percent, on average, in the Uintah Basin) (attached as Exhibit 22).

BLM, here, to disavow itself of responsibility for these specific emissions is to condemn us to unabated GHG emissions.

BLM has recognized that "CH_4 emissions from surface coal mining operations in the PRB . . . is the largest contributor compared to other activities in the planning area," and "[o]il and gas production is the second major contributor to GHG," involving "CH_4 emissions from wellhead equipment, pneumatic devices and tanks." FEIS at 683. However, the Buffalo Proposed RMP fails to provide any detailed, hard look analysis of the proposed actions' contribution to GHG pollution. While the BFO provides charted emissions estimates under each alternative, this is all the agency offers. There is no discussion or analysis of how these emissions will impact specific resources in the Buffalo planning area, and BLM fails to identify any relationship between this data and its decisionmaking process for the Proposed RMP. It is not enough to simply identify an issue of concern, such as GHG pollution. The CEQ Guidance states that agencies "should consider the extent to which a proposed action and its reasonable alternatives contribute to climate change." CEQ Guidance at 8. To consider the extent of an actions' contribution to climate change takes more than just identifying a point of concern; rather, it requires discussion and analysis. The CEQ goes further, stating that agencies should take into account the climate change implications of a proposed project and how it alters the environment. *Id.* at 8. Again, to take into account the implications of climate change demands more than brief discussion, but encourages thorough analysis of the environmental implications. BLM must take steps beyond laying out information, but should provide detailed analysis (including quantification using the social cost of carbon, as described above) of the proposed actions climate change impacts. The agency's decisionmaking process must be reflective of this data and take meaningful steps to abate and mitigate the identified harm. *See, e.g., Center for Biological Diversity v. National Highway Traffic Safety Admin.*, 538 F.3d 1172 (9th Cir. 2008).

Specifically, the practical applications of BLM's GHG pollution mandate are manifest through the GHG emissions and methane waste that will result from oil and gas development authorized by the Buffalo Proposed RMP and FEIS. To this end, BLM certainly does not provide any consideration of the relationship between GHG emissions and the RMP decision made, and fails to address or identify any alternatives or mitigation of GHG emissions from oil and gas development in the Buffalo RMP. This failure is in direct conflict with SO 3226 as well as BLM's mandate under NEPA, FLPMA, and the MLA.

4. BLM Failed to Identify Ways to Manage for Community and Ecosystem Resiliency

Critically absent from BLM's analysis is any mention of the climate change impacts already affecting specific resources in the planning area. As provided in Draft Comments, Exhibit 1, at 33-34, and according to experts at the Government Accountability Office ("GAO"), federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others, "(1) physical effects, such as droughts, floods, glacial melting, and sea level rise; (2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and (3) economic and social effects, such as adverse impacts on

tourism, infrastructure, fishing, and other resource uses."[56] There is absolutely no mention, much less analysis, in the Proposed RMP/FEIS of these growing impacts or the necessity to employ climate mitigation measures to ensure landscape and human resiliency and their ability to adapt and respond to climate change impacts.

Beyond mitigating climate change by reducing contributions of GHG pollution to the atmosphere, BLM can also help promote ecological resiliency and adaptability by reducing external anthropogenic environmental stressors (like coal and oil and gas development) as a way of best positioning public lands, and the communities that rely on those public lands, to withstand what is acknowledged as ongoing and intensifying climate change degradation. It is crucial for BLM to close the gap in their decisionmaking regarding the cumulative contribution of coal and oil and gas development made available in the planning area, particularly given the conflict between such authorization and the agency's responsibility to manage for healthy, resilient ecosystems. Although BLM has recognized the threat of climate change, the agency's decisionmaking is not reflective of this harm and the agency fails to take the many necessary and meaningful steps to ameliorate the impacts to communities, landscapes, and species. BLM's failure to even mention the relationship between climate change and these impacts is a fundamental deficiency in the Proposed RMP/FEIS, and fails to satisfy the agency's hard look obligation. *See Morris,* 598 F.3d at 681.

Moreover, CEQ Guidance requires that agencies address the impacts of climate change on the environmental consequences of a proposed action. As the CEQ Guidance recognizes, "[c]limate change can increase the vulnerability of a resource, ecosystem, human community, or structure, which would then be more susceptible to climate change and other effects and result in a proposed action's effects being more environmentally damaging." CEQ Guidance at 22.[57] These effects are already occurring and are expected to increase, resulting in shrinking water resources, extreme flooding events, invasion of more combustible non-native plant species, soil erosion, loss of wildlife habitat, and larger, hotter wildfires. These impacts have been catalogued in recent scientific studies by federal agencies, including the National Climate Assessment,[58] and highlighted by President Obama. *See* Exec. Order No. 13,653, § 1. As the CEQ Guidance recognizes, "GHGs already in the atmosphere will continue altering the climate system into the future, even with current or future emissions control efforts." CEQ Guidance at 22. In other words, climate change impacts are and will continue to be part of the new normal, and "managing th[o]se risks requires deliberate preparation, close cooperation, and coordinated planning … to improve climate preparedness and resilience; help safeguard our economy,

[56] GAO Report, *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources* (2007) (Sept 26 2013 Comment Letter) (attached as Exhibit 1); *see also* Committee on Environment and Natural Resources, National Science and Technology Council, *Scientific Assessment of the Effects of Global Climate Change on the United States* (2008) (Sept 26 2013 Comment Letter) (attached as Exhibit 1); Melanie Lenart, et. al. *Global Warming in the Southwest: Projections, Observations, and Impacts* (2007) (Sept 26 2013 Comment Letter) (attached as Exhibit 1) (describing impacts from temperature rise, drought, floods and impacts to water supply on the southwest).

[57] Available at https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf (last visited June 26, 2015).

[58] Available at http://nca2014.globalchange.gov/ (last visited June 26, 2015).

infrastructure, environment, and natural resources; and provide for the continuity of … agency operations, services, and programs." Exec. Order No. 13,653, § 1.

NEPA analyses must account for this reality. While the CEQ Guidance suggests that existing and reasonably foreseeable climate change impacts be considered as part of an agency's hard look at impacts, the guidance must also account for the fact that climate change effects are and will continue to be a key component of the environmental baseline. Agencies are required under NEPA to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The affected environment discussion sets the "baseline" for the impacts analysis and comparison of alternatives. As the Ninth Circuit has recognized, "without establishing…baseline conditions…there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988) (explaining further that "[t]he concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process").

Excluding climate change effects from the environmental baseline ignores the reality that the impacts of proposed actions must be evaluated based on the already deteriorating, climate-impacted state of the resources, ecosystems, human communities, and structures that will be affected. Accordingly, BLM must clarify that existing and reasonably foreseeable climate change impacts as part of the affected environment in the planning area, which then must be assessed as part of the agency's hard look at impacts, and integrated into *each* of the alternatives, including the no action alternative. Put differently, simply acknowledging climate impacts as part of the affected environment is insufficient. BLM must incorporate that information into their hard look at impacts (e.g., the cumulative impact of climate change, the proposed action, and other past, present, and reasonably foreseeable impacts), in particular to help inform the design and consideration of alternatives and mitigation measures.

Critically, the final guidance should emphasize that agencies may not shirk their responsibility to assess climate change merely because of uncertainties. "Reasonable forecasting and speculation is…implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labelling any and all discussion of future environmental effects as 'crystal ball inquiry.'" *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n.9 (9th Cir. 1984 (quoting *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm*., 481 F.2d 1079, 1092 (D.C. Cir. 1973)). NEPA's hard look merely requires "a reasonably thorough discussion of the significant aspects of the probable environmental consequences" to "foster both informed decision-making and informed public participation." *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194 (9th Cir. 2008) (quotations and citations omitted). As here, BLM has refused to address the implications of their actions in the context of climate change on the basis of uncertainties, such as the lack of fine-scale modeling, which has led BLM to take short-sighted, arbitrary, and capricious action that does not, in fact, account for climate change.

In this context, and to accurately account for and integrate climate change impacts into the affected environment, hard look, alternatives, and mitigation analysis, BLM should evaluate the relevant resources, ecosystems, or communities for key vulnerabilities as part of the baseline

assessment. The vulnerability of ecosystems and communities, as well as the species and physical elements they comprise, depends on their inherent qualities and their ability to change or adapt to address new climatic conditions. For example, the vulnerability of certain species can be affected by the tolerance of individual organisms to the direct effects of climate change, the ability of populations to adapt to those conditions through the expression of genetic variability, and the ability to adjust behaviorally to changes in the ecosystem, such as prey shifts. A vulnerability assessment would examine the species and physical elements of existing ecosystems and determine which elements are sensitive, which are resilient, which have the ability to adapt, and what the likely consequences would be of anticipated changes in climate. Human infrastructure—bridges, roads, buildings, etc.—should be assessed similarly.

Because ecosystems (including the human communities that rest within such ecosystems) are so complex, it is impossible to evaluate the vulnerabilities of every population, species, community, or other element of the system in question. Instead, risk assessment must focus on particular, high-priority elements or "key vulnerabilities." In its 5th Assessment Report, the IPCC suggested the following criteria for identifying key vulnerabilities:

- Exposure of society, community or social-ecological system to climate stressors.
- Importance of vulnerable system(s).
- Limited ability of society, community, or social-ecological systems to cope with and build adaptive capacities or limit the adverse consequences of climate related hazard.
- Persistence of vulnerable conditions and degree of irreversibility of consequences.
- Presence of conditions that make societies highly susceptible to cumulative stressors in complex and multiple-interacting systems.

In other words, key vulnerabilities are likely to occur where the effects of climate change are large and intense, imminent, long lasting, highly probable, irreversible, and likely to limit the distribution of highly valued systems or system elements. BLM should clarify that understanding and assessing these vulnerabilities, based on existing information and tools,[59] is a key component of the affected environment, hard look at impacts, and the design and consideration of alternatives and mitigation measures. The Proposed RMP/FEIS is devoid of this type of analysis and consideration.

E. BLM Failed to Take a Hard Look at Impacts from Fracking

The FEIS is further deficient because although the Proposed RMP contemplates extensive oil and gas extraction, the FEIS fails to take a hard look at the impacts of hydraulic fracturing (or "fracking"), the process which will almost certainly be used for some of this activity. 78 Fed. Reg. at 31638/3 (BLM estimates that roughly 90percent of new wells on federal lands are hydraulically fractured). Hydraulic fracturing using a fracturing fluid together with a

[59] Where there is scientific uncertainty, agencies must satisfy the requirements of 40 C.F.R. § 1502.22.

proppant is used to extract oil and gas from shale formations, and a similar process is used for coalbed natural gas extraction.

The FEIS provides no analysis of the extent and impacts of the use of fracking in the planning area. The only mention of fracking in the body of the Proposed RMP/FEIS is a generalized description of the technology. FEIS at 739. The FEIS states that "[a]dditional information on hydraulic fracturing as well as other completion technologies can be found in Appendix V," this appendix provides only a single paragraph on hydraulic fracturing, with no information regarding the environmental impacts of this process. FEIS at 2615. For example, there is absolutely no mention of fracking impacts to air quality from the emission of VOCs emitted during well completion or ambient dust from increased truck traffic, no discussion of impacts to surface and groundwater quality from fracking chemicals or the possibility of spills or accidents, and no discussion of impacts to water quantity from the millions of gallons needed to frack each well, let alone quantification of the amounts of water that are anticipated to be consumed through oil and gas operations..

BLM's failure to adequately address the impacts of hydraulic fracturing is particularly egregious because, concurrent with the NEPA process for the RMP, BLM was separately stating the need to devote additional attention to hydraulic fracturing. In a rule addressing hydraulic fracturing proposed in May 2012, BLM acknowledged that hydraulic fracturing has important environmental impacts but that existing BLM regulations and practices failed to adequately address those impacts. 77 Fed. Reg. 27,691, 27,692 (May 11, 2012). BLM reiterated these observations in a re-proposal of the rule issued in May 2013, and in the final rule issued March 26, 2015. 80 Fed. Reg. 16,128 (Mar. 26, 2015); 40 C.F.R. § 3160 *et seq.* (hereinafter "Fracking Rule"). Because BLM had repeatedly recognized the importance of hydraulic fracturing, BLM was required to discuss the environmental impacts of hydraulic fracturing in the NEPA analysis for the RMP.

The Proposed RMP/FEIS is further deficient for failing to address the fracking rule itself. BLM intended for the Fracking Rule to take effect on June 24, 2015 and to "appl[y] to all wells regulated by BLM," including those within the planning area. *Id.* at 16,131. . These BLM statements from 2012, 2013, and 2015 demonstrate that development of this rule, and application of this rule to the planning area, was reasonably foreseeable and should have been analyzed and included in BLM's NEPA analysis, but was not. For example, the agency recognizes: "Permitting a new well is governed by Onshore Oil and Gas Order No. 1 and other applicable federal and state laws and regulations. This includes new and future laws and regulations such as the residence setback being finalized by the WOGCC." FEIS at 2603. Despite this acknowledgement of "future laws and regulations" BLM fails to even mention the Fracking Rule. BLM should have considered, for example, the fracking rule's requirement to manage recovered fluids in rigid enclosed, covered or netted and screened above-ground storage tanks unless a case-by-case exception is granted. As part of this consideration, BLM should have addressed the likelihood that operators would request exemptions to this requirement in the planning area; if so, the appropriateness of granting any such exemptions, including the impacts of different methods of fluid storage. 80 Fed. Reg. at 16,129-30; 43 C.F.R. § 3160. BLM not only failed to analyze and apply these new requirements to the planning area, but failed to mention these new, reasonably foreseeable requirements altogether.

The failure to address the impacts of hydraulic fracturing is particularly egregious because, in promulgating the fracturing rule, BLM stated that impacts of hydraulic fracturing on "landscapes, air, wildlife, etc., as well as greenhouse gas emissions from oil and gas development," would be analyzed during the "land use planning" process. 80 Fed. Reg. at 16,191. BLM must follow through on that commitment here. Conversely, because BLM failed to consider these impacts in development of the fracking rule, the fracking rule plainly cannot provide a substitute for consideration of these impacts here.

IV. CONCLUSION

The Conservation Groups appreciate your consideration of the information and concerns addressed herein. Should you have any questions about these comments, please do not hesitate to contact us.

Sincerely,

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