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November 23, 2010

Jamie Connell
State Director
5001 Southgate Drive
Billings, MT 59101

Bureau of Land Management

NOV 24 2010

Montana State Office
Billings, Montana

Re: **CLIMATE HAWKS' PROTEST OF DECEMBER 9, 2010 BLM OIL & GAS LEASE SALE**

Dear State Director Connell:

Pursuant to 43 C.F.R. § 3120.1-3, the Montana Environmental Information Center, Earthworks' Oil & Gas Accountability Project, and WildEarth Guardians ("Climate Hawks") protest the entire December 9, 2010 oil & gas lease sale for Montana, North Dakota, and South Dakota. This protest is premised on serious, unresolved concerns regarding climate change and inefficient, wasteful oil & gas production operations that must be addressed *before* the U.S. Bureau of Land Management ("BLM") sells and issues further oil and gas leases. At this juncture, the Climate Hawks are frustrated with BLM's response to their climate change and waste concerns.

As background, the Climate Hawks effort to engage BLM on this issue stretch back to 2008, where we protested BLM's April 8, 2008, June 17, 2008, August 26, 2008, and November 4, 2008 oil & gas lease sales. Once BLM unpersuasively rejected these protests, we asserted our rights in federal court, a legal challenge that was resolved in a court-approved settlement agreement reached with BLM in March 2010. *See Mont. Env'tl. Info. Ctr. v. BLM*, 08-CV-178 DWM (Dkt # 54). Subsequent to this settlement agreement, we protested BLM's April 13, 2010 oil & gas lease sale on the basis of the same arguments we had asserted in our litigation. BLM thereafter chose to defer its lease sale pending the environmental review required by the March 2010 settlement agreement.

It is the Climate Hawks' sincere hope that BLM takes meaningful action to address climate change concerns implicated by BLM's sale and issuance of oil and gas leases for Montana and the Dakotas. As the Climate Hawks noted to BLM in their June 10, 2010 scoping comments ("June 10th Comments"), IN* have high hopes that BLM will exercise leadership on the very critical issue of climate change" and that BLM's leasing decisions presented "an essential opportunity to prevent waste and inefficiencies in the production of federal oil and gas resources and to address the cumulative impacts of large-scale oil and gas development and climate change to our environment." June 10th

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Comments at 1.

Unfortunately, that meaningful action — and commensurate BLM leadership — remains elusive. BLM, in justifying the proposed December 9, 2010 oil & gas lease sale, has endeavored to obscure the lack of action and leadership by producing a large volume of paper. The volume of an analysis is, of course, irrelevant; what matters is the quality of the analysis and how the decision-maker uses that analysis to inform his or her decision. Here, BLM's large volume of paper actually undercuts BLM's decision to move forward with this lease sale as presently designed, demonstrating BLM's missed opportunities to:

- Safeguard the climate;
- Produce more energy for consumers — e.g., homes, schools, and businesses;
- Make oil and gas companies money;
- Increase federal and state oil and gas royalties; and:
- Prevent waste and improve the efficiency of oil and gas development operations.

We are, frankly, baffled by BLM's lack of action and leadership. We have provided BLM with an opportunity to take action and exercise leadership by adopting reasonable, common sense solutions that provide significant crosscutting benefits to the environment and thus ensure responsible oil & gas leasing and development. According to BLM's own estimates, which are in our view quite conservative, 1.8 billion standard cubic feet ("Bcf") of methane are estimated to be emitted to the atmosphere from oil and gas development in Montana and the Dakotas per year. Methane is, of course, a commercial product as well as an extremely potent greenhouse gas ("GHG") pollutant 105 times stronger than carbon dioxide over a 20-year time frame.¹ Thus, a cubic foot of methane released to the atmosphere is a cubic foot of methane that cannot warm a home or power a business, a cubic foot of methane that federal and state governments cannot collect royalties on, and a cubic foot of methane that will further exacerbate our climate crisis and deteriorating climate. If, however, BLM eliminated these methane emissions, BLM would, using EPA's figures, produce the following benefits:

- Additional natural gas sales of \$9,000,000 each year.
- Eliminate the equivalent CO2 emissions from electricity used by 94,737 homes for one year.
- Eliminate the equivalent annual GHG emissions from 134,211 passenger vehicles.

See Climate Hawks' September 13, 2010 Comments at 19-20 (providing calculations) ("September 13th Comments").

¹ Shindell et al., *Improved Attribution of Climate Forcing to Emissions*, Science 2009 326 (5953), p. 716 (www.sciencemag.org/cgi/content/abstract/326/5953/716).

This potential is by no means illusory. At an August 31, 2009 EPA Natural Gas STAR conference held in Billings, Montana, Devon Energy and Newfield Exploration — both of which operate and produce in the State of Montana — touted their success in cost-effectively reducing methane emissions. More broadly, the Environmental Protection Agency reported, for 2008 alone, that its Natural Gas STAR Program eliminated 114 Bcf of domestic methane emissions. Highlighting the multiple benefits of GHG emissions reductions, EPA calculated (www.epa.gov/gasstar/accomplishments/index.html#three) that these emissions reductions were the equivalent of:

- The additional revenue of more than \$802 million in natural gas sales (assumes an average natural gas price of \$7.00 per thousand cubic feet).
- The avoidance of 46.3 million tonnes CO2 equivalent.
- The CO2 emissions from the electricity use consumption of more than 6 million homes for one year.
- The annual greenhouse gas emissions from 8.5 million passenger vehicles.
- The carbon sequestered annually by 10.5 million acres of pine or fir forests

There is, notably, no reason to shortcut environmental safeguards and the public's rights to a fair, thorough process by proceeding with the December 9th lease sale under the pretext that development of these leases is immediately necessary or appropriate to provide energy or a boost to our economy. According to BLM's Fiscal Year 2009 data, in Montana, there are already 4,093 active BLM oil & gas leases totaling 3,975,577 acres, yet only 769,515 acres are under production. BLM Public Lands Statistics for Fiscal Year 2009 (attached as Exhibit 1). In North Dakota, there are already 1,772 active leases totaling 982,998 acres, yet only 377,152 acres are under production. *Id.* In South Dakota, there are 181 active leases totaling 150,086 acres, yet only 42,591 acres are under production. *Id.*

Given this data, it would seem wise for BLM to focus its limited resources on ensuring responsible oil & gas production on existing leases rather than the issuance of ever more leases with only dubious prospects of production. Indeed, by focusing on responsible development by using the GHG reduction technologies we have proposed, BLM might be able to displace further leasing and production demand through improved efficiency and the prevention of methane waste. This is particularly important in the natural gas context, where there is a dearth of meaningful analysis of the greenhouse gas pollution emitted by the production, processing, transmission, distribution, and combustion of natural gas. While often touted as a 'cleaner' alternative to dirty coal, recent evidence indicates that this may not, in fact be the case — and, at the least, indicates that we must first take immediate, common sense action to reduce GHG pollution from natural gas before it can be safely relied on as an effective tool to transition to a clean energy economy (a noted priority of this Administration). Howarth, Robert W., *Assessment of the Greenhouse Gas Footprint of Natural Gas from Shale Formations Obtained by High-Volume, Slick-Water Hydraulic Fracturing* (Nov. 15, 2010) (attached

as Exhibit 2).

BLM's leasing data also reveals the inevitable oil & gas industry complaints about the pace and scale of BLM leasing as little more than rhetorical, thinly-veiled bullying and posturing, detached from the on-the-ground surplus of undeveloped leases. At present, these undeveloped leases are doing little, apparently, but padding the bottom-line of oil & gas companies and their investors. If oil & gas companies have a thirst for additional development, they can develop existing, undeveloped oil & gas leases. BLM would therefore be wise to remember that onshore oil & gas resources are owned by the American people, not oil & gas companies, and that BLM manages these resources as a trustee for the benefit of the American people, not oil & gas companies.

Given BLM's fundamental failure to address our concerns in a meaningful way, we ask BLM to immediately revisit our June 10th Comments and September 13th Comments, which are incorporated herein by reference.² Upon review, BLM cannot lawfully proceed with this lease sale and must, instead, cancel the lease sale and initiate preparation of an Environmental Impact Statement and amendments or revisions to BLM's land use plans to justify further leasing and any lifting of the suspension of the 2008 leases imposed pursuant to our March 2010 court-ordered settlement agreement. Barring that action, the Climate Hawks will continue to press their rights and protect their interests by enforcing Federal law against BLM transgressions.

I. STATEMENT OF INTEREST

Montana Environmental Information Center ("MEIC") is a 501(c)(3) nonprofit organization founded in 1973 with approximately 3,000 members throughout the United States and the State of Montana. MEIC is dedicated, in part, to the preservation and enhancement of the natural resources and natural environment of Montana and to the gathering and disseminating of information concerning the protection and preservation of the human environment through education of its members and the general public concerning their rights and obligations under local, state and federal environmental

² BLM did, apparently, address concerns by industry groups that the economic benefits of oil & gas development were not taken into account. We appreciate the additional economic data and analysis, but note that it is transparently designed to pad the record in favor of further oil & gas leasing. Assuming BLM would like to complete a meaningful economics analysis which accounts for costs, BLM should address the boom-and-bust cycle associated with oil & gas development caused by the volatile price of oil and gas. <http://tonto.eia.doe.gov/indnaving/hist/n9190us3m.htm> Moreover, BLM should evaluate the economic externalities associated with oil & gas development — such as increased governmental burdens on schools, public health and safety agencies, and road infrastructure, which are strained by the influx of oil and gas companies into a particular area, as well as the economic costs caused by a deteriorating climate — impacts BLM has not addressed. As a starting point for this analysis, BLM should take a hard look at analyses completed by Headwaters Economics and not cherry-pick information to cast oil & gas in the most favorable light possible. www.headwaterseconomics.org/energy/.

protection laws and regulations. MEIC is also dedicated, in part, to assuring that federal officials comply with and fully uphold the laws of the United States that are designed to protect and enhance the environment from pollution. MEIC and its members have intensive, long-standing recreational, aesthetic, scientific, professional, and spiritual interests in the responsible production and use of energy, the reduction of GHG pollution as a means to ameliorate our climate crisis, and the land, air, water, and community impacted by climate change. MEIC brings this protest on its own behalf and on behalf of its adversely affected members.

The Oil & Gas Accountability Project ("OGAP") is a program of Earthworks, a 501(c)(3) nonprofit dedicated to working with communities to reduce and prevent the devastating impacts of drilling, digging, and mining. OGAP/Earthworks works with community groups, landowners, organizations, and individuals to protect our environment, public health, and communities. OGAP/Earthworks provides technical, policy, and organizing assistance, and serves as a clearinghouse of information for organizations and individuals concerned with oil and gas development in Montana and throughout the United States. OGAP/Earthworks has intensive, long-standing recreational, aesthetic, scientific, professional, and spiritual interests in the responsible production and use of energy, the reduction of GHG pollution as a means to ameliorate our climate crisis, and the land, air, water, and community impacted by climate change. OGAP/Earthworks' brings this protest on its own behalf and on behalf of its adversely affected members.

WildEarth Guardians is a non-profit corporation with approximately 9,000 members and supporters throughout the United States. WildEarth Guardians protects and restores wildlife, wild rivers and wild places in the American West. WildEarth Guardians is dedicated to protecting the American West from the dangers it faces from the climate crisis. WildEarth Guardians and its members have intensive, long-standing recreational, aesthetic, scientific, professional, and spiritual interests in the responsible production and use of energy, the reduction of GHG pollution as a means to ameliorate our climate crisis, and the land, air, water, and community impacted by climate change. WildEarth Guardians brings this action on its own behalf and on behalf of its adversely affected members.

II. STATEMENT OF REASONS

A. BLM Failed to Consider Reasonable Alternatives to Reduce GHG Pollution and Protect the Environment in the Face of a Deteriorating Climate

The Climate Hawks have asked BLM to consider two types of alternatives. First, alternatives to reduce GHG emissions from oil & gas development. And, second, alternatives to protect and restore ecological resiliency as a way to best withstand climate change impacts. BLM has considered neither alternative. This is unacceptable, eviscerating the "heart" of the environmental review process. 40 C.F.R. § 1502.14.

We therefore direct your attention to our June 10th and September 13th comments which detail our position regarding BLM's duty to consider lease-stage alternatives. June 10th Comments at 7-10; September 13th Comments at 3-11. In short, BLM has no excuse not to consider these reasonable alternatives. BLM has indicated that it will instead address GHG pollution at the drilling stage through mitigation. BLM's reliance on the speculative promise of site-specific mitigation does not, however, relieve BLM of its lease-stage NEPA duty to consider alternatives to reduce GHG pollution from foreseeable oil & gas development. BLM's reliance on such mitigation is a well-known tactic by BLM to punt on inconvenient issues that perpetuates a shell game regarding oil & gas planning, leasing, and development.³ This shell game does not comply with NEPA and, in so doing, undercuts the public's expectations of reasoned and informed leasing decisions. BLM, fundamentally, must consider reasonable alternatives at the point it still retains its full authority to prevent or, as appropriate, abate GHG pollution and protect the environment from climate change impacts through whatever means are necessary — not just whatever means are consistent with the rights conveyed by executed leases. *See* 43 C.F.R. § 3101.1-2; *see also* 43 U.S.C. § 1732(b) (providing that BLM must take action to prevent "unnecessary or undue degradation").

BLM's promise of site-specific mitigation differs considerably from the Climate Hawks' proposed alternatives regarding the problem of GHG pollution. BLM's decision to approach the problem through site-specific mitigation has not, however, been vetted and considered through alternatives analysis, whether in the Leasing EAs or in the agency's land use plans and accompanying NEPA analyses. Instead, BLM has simply made the decision, without providing a basis or explanation for why site-specific mitigation is appropriate, necessary, compliant with the law, and a better way of dealing with the problem than the ways proposed by the Climate Hawks. However, BLM must first vet its approach to GHG pollution prevention and abatement through the NEPA process by first considering it as an alternative and by comparing that alternative with other reasonable alternatives — such as the Climate Hawks' proposed alternatives, including RMP-stage management decisions or lease-stage stipulations. It is only by comparing and contrasting BLM's approach with other approaches that BLM can evaluate and prove the efficacy of its approach, comply with NEPA, and ensure that its leasing decisions are reasoned and informed.

We also note that BLM is addressing climate change through its preparation of Rapid Ecoregional Assessments and that, in addition, "BLM is working to mitigate climate change by reducing greenhouse gas emissions."⁴ While we appreciate this work,

³ Given the fact that BLM has been on notice of these climate change concerns for years, and even signaled an intent to address these issues through site-specific mitigation, we were surprised to find that BLM's most recent drilling-stage NEPA analyses fail to even mention the problem of climate change and GHG pollution from oil & gas development, let alone consider or impose measures to mitigate climate change by preventing or abating climate change. *See* BLM, Environmental Assessment for Application for Permit to Drill (APD) NFR Well # Federal 31-25-20B (Attached as Exhibit 3).

⁴ www.blm.gov/wo/st/en/prog/more/climatechange/intro.html

it merely underscores BLM's failure, here, to take real, meaningful action by considering and, if necessary or appropriate, adopting reasonable alternatives to address climate change. Critically, these Rapid Ecoregional Assessments "do not make management decisions or allocate resource uses" and thus do not obviate the importance of addressing climate change in BLM's leasing actions — actions that are "management decisions" and "allocate resource uses."⁵ Thus, BLM's research into climate change is welcome, but does little to alleviate our concerns about ongoing management decisions and resource allocation.

Federal law — including Secretarial Order 3289 — and existing science (such as the research compiled and evaluated by the U.S. Global Change Research Program⁶ which BLM itself references and cites to support its climate work) underscore the magnitude and threat of climate change and compel the conclusion that the time for action is *now* — not some uncertain point in the future. Indeed, pending the completion of these Rapid Ecoregional Assessments, it seems that it would be in BLM and the public's best interest to forgo further leasing to ensure that BLM retains flexibility to fully address climate change — flexibility that is reduced by the execution of oil & gas leases. C.f. 40 C.F.R. § 1506.1 (providing that agencies should not, pending the completion of NEPA analyses, take action that would "[l]imit the choice of reasonable alternatives" or "prejudice the ultimate decision on the program ... when it tends to determine subsequent development or limit alternatives"). Selling and issuing more and more leases when there is already a surplus of leases strikes us as the definition of unlawful, arbitrary and capricious action. 5 U.S.C. §§ 706(2)(A), (C), (D).

B. BLM Failed to Prepare an Environmental Impact Statement and Failed to Revise or Amend its Land Use Plans

We are troubled by BLM's statement that "[w]e anticipate finalizing our decision records *after* the December oil and gas lease sale, but prior to lease issuance. Upon finalization, the decision records and accompanying findings of no significant impact (FONSI) will be posted below."⁸ This, of course, demonstrates that the decision to proceed on the basis of an EA has already been made and, moreover, that BLM does not intend to revise or amend its land use plans. If this is the case, we do not understand why BLM has not issued its decision records and FONSI prior to the lease sale to help inform the Climate Hawks protest. Decision records and FONSI are critically important documents that explain BLM's reasoning why impacts are insignificant and why,

⁵ www.blm.gov/wo/st/en/prog/more/climatechange/assessmentsqa.html#whatdo

⁶ www.globalchange.gov/

⁷ www.blm.gov/wo/st/en/prog/more/climatechange/intro.html

⁸ www.blm.gov/mt/st/en/prog/energy/oil_and_gas/leasing/leasingEAs.html (emphasis added).

therefore, an Environmental Impact Statement ("EIS") — which acknowledges significant impacts — is unnecessary. *See* 40 C.F.R. § 1508.27 (NEPA's significance criteria).

Our concern is exacerbated by BLM's limited 30-day public comment period on BLM's eight separate EAs, each with separate lease parcels and site-specific issues, as well as the lengthy SIR and its nine appendices. In fact, BLM rejected the Climate Hawks' request for an additional 60 days for public comment. BLM's procedure, in short, undermines the public's ability to understand and thereby protest BLM's December 9th oil and gas lease sale. "An agency, when preparing an EA, must provide the public with sufficient environmental information, considered in the totality of circumstances, to permit members of the public to weigh in with their views and thus inform the agency decision-making process." *Bering Strait Citizens for Responsible Resource Dev. v. U.S. Army Corps of Engrs.*, 524 F.3d 938, 953 (9th Cir. 2008).

Regardless, all the evidence the Climate Hawks has reviewed to date demonstrates that an EIS is in fact necessary and, moreover, that BLM needs to revise or amend its land use plans. We again direct your attention to our yet-unresolved concerns as articulated in our previous comment letters for our reasoning. June 10th Comments at 22-23; September 13th Comments at 11-16. In short, an EIS is required because of:

- Uncertainties and controversy regarding the magnitude of GHG emissions from oil and gas development;
- The global warming potential of methane over the 20-year planning and environmental review horizon, the horizon most appropriate to ensure the proper hard look at impacts and, moreover, the horizon used by the Leasing EAs themselves for gauging impacts other than climate change (for climate change, the Leasing EAs and SIR assume a 100-year horizon and, therefore, a lesser warming potential for methane);
- The precedent that these Leasing EAs set for justifying and authorizing BLM's future leasing decisions in Montana and the Dakotas;
- The potential that these GHG emissions are avoidable and thus constitute preventable waste and inefficiencies in how oil and gas resources are developed;
- The cumulative impact of oil and gas development and climate change on the climate.
- BLM's apparent inability to properly oversee the management of federal onshore oil and gas resources at the drilling stage.

C. BLM Failed to Take a Hard Look at Direct, Indirect, and Cumulative GHG Pollution

BLM's analysis of GHG pollution does not satisfy the agency's duty to take a hard look at the direct, indirect, and cumulative GHG pollution associated with the

'upstream' exploration and production of oil & gas resources. Many of the deficiencies in BLM's analysis parallel deficiencies in BLM's decision to proceed on the basis of EAs that, by definition, presume the insignificance of GHG emissions from oil & gas development — a presumption that drives BLM's decision to take a business-as-usual approach to the December 9th lease sale. These are issues that must be addressed through a hard look NEPA analysis — an analysis that must take the form, here, of an EIS.

In particular, BLM has failed to address serious uncertainties involved in current assumptions driving calculations of GHG emissions from oil & gas development. As we noted in our September 13th comments, current EPA emissions factors wildly underestimate the emissions from several oil & gas sources. For example, EPA has used an emissions factor of 3 thousand standard cubic feet ("Mcf") of gas emitted to the atmosphere per well completion in calculating its GHG inventory. EPA has, however, conceded that a far more accurate emissions factor is 9,175 Mcf per well.⁹ Moreover, it is important to note that the emissions factor for certain geologic formations is significantly higher, such as the 22,000 Mcf of gas per well reported in the Piceance Basin! These underestimates are, in significant part, caused by a lack of field-level knowledge about GHG emissions from drilling particular geologic formations. These underestimates are also caused by the dispersed nature of oil & gas equipment — rather than a single, easily grasped source, such as a coal-fired power plant, oil & gas production consists of large numbers of wells, tanks, compressor stations, pipelines, and other equipment that, individually, may appear insignificant but, cumulatively, may very well be quite significant. While dispersed, oil & gas development is nonetheless a massive, landscape-scale industrial operation — one that just happens to not have a single roof. BLM, as the agency charged with oversight of onshore oil & gas development, therefore has an opportunity to improve our knowledge base regarding GHG emissions from oil & gas production, providing some measure of clarity to this important issue.¹¹

Furthermore, the potency of a particular GHG depends on the time horizon used in the analysis. September 13th Comments at 13-14. Here, BLM's leasing EAs have assumed a 100-year time frame. A hard look must, however, accept and address the near-term potency of GHGs, in particular methane, which, over a 20-year time frame is 105 times as potent as carbon dioxide. *Id.* This fact elevates the significance of GHG

⁹ EPA, Technical Support Document for GHG Reporting Rule, Appendix B at 79-82 (attached as Exhibit 4 to the Climate Hawks' September 13th Comments).

¹⁰ Natural Gas STAR Program Recommended Technologies and Practices for Wells at www.epa.gov/gasstar/tools/recommended.html, and specifically www.epa.gov/gasstar/documents/green_c.pdf (slide 14).

¹¹ In this context, the SIR, while providing a basic literature review of GHG emissions sources, is merely a starting point for BLM's responsibility to take a hard look at GHG emissions in the context of foreseeable drilling operations in the geologic formations proposed for leasing.

emissions from oil & gas development and, further, illuminates the importance of considering lease stage alternatives that ensure near-term GHG reduction measures. *Id.* Early action to prevent or abate our most potent GHG emissions helps slow and, if scaled across our region and various energy sectors, perhaps even halt our otherwise inexorable creep towards irreversible climate tipping points.

D. BLM Failed to Take a Hard Look at Oil & Gas Waste & Inefficiencies

BLM must also take a hard look at methane waste caused by production inefficiencies through NEPA. *See* June 10 Comments at 14; September 13th Comments at 16-21. The emission of methane is not simply a climate and air quality issue, but also a basic mineral resource management issue. However, the Leasing EAs and SIR fail to acknowledge — let alone evaluate — this critically relevant factor. In fact, the Leasing EAs fail to provide any meaningful analysis of how oil & gas production on the leases would transpire or an evaluation of the specific equipment, and how that equipment is used, for that production. While there are general descriptions of the process by which drilling is authorized, and generic, conclusory determinations about impacts (though not with regard to methane waste and inefficiency, where there is no evaluation or determination, period), there is neither a technical nor plain-language explanation of how oil & gas resources are actually extracted out of the ground in terms of how a well location is identified, how it is drilled, how it is produced, how it is maintained, and how it is abandoned, capped, and eventually reclaimed. This information is essential for members of the general public who are not petroleum engineers but want and deserve to understand how development transpires. But it is also essential for more technically-minded members of the public to provide them with the ability to review the EA and gauge whether BLM has provided sufficient environmental safeguards in the lease agreement itself.

BLM's likely response will be to assert that that it does not know whether and where development will take place on the lease. This is a tired canard. "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 Commn.*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)). NEPA's hard look requires "a reasonably thorough discussion of the significant aspects of the probable environmental consequences" to "foster both informed decision-making and informed public participation."¹² *Ctr. for Biological Diversity v. Natl. Hwy. Traffic Safety Admin.*, 538 F.3d 1172, 1194 (9th Cir. 2008) (quotations and citations omitted).

¹² Notably, every single Field Office has witnessed oil & gas development and significant, production-stage oil & gas development is underway across the region. BLM therefore either has or should have a fairly good understanding of production stage operations. Notably, BLM rules require operators to "keep accurate and complete records with respect to all lease operations including, but not limited to, production facilities and equipment, drilling, producing, deepening, plugging back, and abandonment operations, and other matters pertaining to operations." 43 C.F.R. j3162.4-1(a).

Moreover, BLM's complaint that it does not know whether or where development will take place on a particular lease begs the question why BLM is granting surface use rights in the first place through execution of the lease. BLM should, in this situation, retain the authority to preclude, absolutely, drilling pending proper site-specific evaluation as well as the full authority to prevent or, as appropriate, abate GHG pollution through whatever means necessary — not just whatever means are consistent with lease rights. *See* 43 C.F.R. § 3101.1-2. As the D.C. Circuit long ago explained:

The Department asserts that it cannot accurately evaluate the consequences of drilling and other surface disturbing activities until site-specific plans are submitted. If, however, the Department is in fact concerned that it cannot foresee and evaluate the consequences of leasing without site-specific proposals, then it may delay preparation of an EIS provided that it reserves both the authority to *preclude* all activities pending submission of site-specific proposals and the authority to *prevent* proposed activities if the environmental consequences are unacceptable. If the Department chooses not to retain the authority to *preclude* all surface disturbing activities, then an EIS assessing the full environmental consequences must be prepared at the point of commitment — when the leases are issued. The Department can decide, in the first instance, by which it will proceed.

Sierra Club v. Peterson, 717 F.2d 1409, 1415 (D.C. Cir. 1983) (emphasis original). This is particularly the case where BLM is aware of existing on-the-ground development and the likelihood of actual production in the areas subject to the lease sale, which is, here, the case in several locations, such as in the Powder River Basin.

When the Climate Hawks have raised this issue with BLM, BLM has responded that it addresses waste through mitigation and application of its onshore orders and other measures, such as Notices to Lessees. But such mitigation, even if it is actually used in field-level operations, does not obviate BLM's duty, pursuant to NEPA, to take a hard look at methane waste and inefficiency. The NEPA hard look is a prerequisite of effective mitigation, identifying the scale and magnitude of a problem, acceptable (and unacceptable) impact levels, and evaluating alternative means of reducing that impact within those acceptable impact levels. Thus, it is not simply a question of whether mitigation is or is not occurring, but whether that mitigation is actually effective and commensurate to the scale and magnitude of the problem — a problem that the Leasing EAs do not even acknowledge. This is why the Climate Hawks have also recommended that BLM consider alternatives, such as RMP-stage management action and lease-stage stipulations. Problems can be addressed in different ways, but the choice of how to address a problem must be addressed first by taking a hard look at the problem and then comparing and contrasting different solutions.

At bottom, BLM has failed to take a hard look at methane waste caused by oil & gas production inefficiencies and therefore cannot provide a reasoned and informed basis

justifying its decision to offer these leases for sale. That basis must be identified and explained *before* lease rights are sold through the NEPA process.

E. BLM Has Failed to Take a Hard Look at Climate Change Impacts to the Environment

Oil & gas development impacts the environment. Climate change impacts the environment. The direct, indirect, and *cumulative* impacts of oil and gas development and climate change are considerable. *See* June 10th Comments at 15-16, 22-23. While BLM's Leasing EAs and the associated URS Supplemental Information Report ("SIR") have provided general background information regarding climate change impacts, the Leasing **EAs and SIR** are devoid of an actual hard look analysis at oil & gas and climate change impacts.

For example, water quality and quantity, and aquatic species and habitat, are impacted by oil & gas development. And water quality and quantity, and aquatic species and habitat, are also impacted by climate change. Yet the Leasing EAs do not adequately acknowledge the direct, indirect, and cumulative impact of oil & gas development and climate change. In particular, the Leasing EAs' discussion of the direct and indirect impacts of climate change is generic and segregated from the Leasing EAs' discussion of direct and indirect impacts to specific resources, such as water quality, water quantity, aquatic species and habitat. *See, e.g.*, Miles City FO Leasing EA at 3.6.1.1 (describing affected environment for special status "Aquatic Wildlife"), 3.7.1 (describing affected environment for "Aquatic Wildlife"), 4.4 (direct and indirect impacts to water resources), 4.6.1.1 (direct and indirect impacts to pallid sturgeon), 4.7.1 (direct and indirect impacts to fish & wildlife).¹³ As an initial matter, the impact analysis does not constitute a "hard look" but, rather, a generic, conclusory analysis that does not pass muster under NEPA. There is no relationship between the basic disclosure that oil & gas would impact a particular resource, the total anticipated scale and magnitude of oil & gas development, and the efficacy of proffered mitigation measures to constrain those impacts within acceptable levels — levels that are not, to our knowledge, actually identified in the Leasing EAs and do not seem to exist.

BLM attempts to justify the lack of any analysis of direct and indirect climate change impacts as follows:

It is currently not possible to know with certainty the net impacts from developing lease parcels on climate. The inconsistency in results of scientific models used to predict climate change at the global scale coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. It is therefore beyond the scope of existing science to relate a specific source of greenhouse gas emission or sequestration with the creation or mitigation of any specific climate-related environmental effects.

¹³ The Miles City Leasing EA is used for purposes of citation, but these arguments extend to all the Leasing EAs, EAs that contain virtually identical language and analysis.

Although the effects of greenhouse gas emissions in the global aggregate are well-documented, it is currently impossible to determine what specific effect GHG emissions resulting from a particular activity might have on the environment. For additional information on environmental effects typically attributed to climate change, please refer to the cumulative effects discussion below.

Miles City Leasing EA at 4.2.2.1.

BLM's justification is unpersuasive and, put simply, wrong. NEPA's hard look requirement is not conditioned on BLM's ability to chase a GHG molecule from its emissions source to a specific impact to the environment. The general mechanics of climate change are already well understood, mechanics that attest to the core problem at the heart of climate change: the total, aggregate, and intensifying concentration of GHG pollution in the atmosphere which causes global warming, deteriorates our climate, and impacts land, water, wildlife, and other resources and values of our public lands. Furthermore, NEPA's hard look requirement is not conditioned on BLM's ability to "quantify" impacts; qualitative analysis is perfectly appropriate, especially here. Again, "[r]easonable 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*, 747 F.2d 1240, 1246 n.9 (citation omitted). NEPA's hard look requires only "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*, 538 F.3d 1172, 1194 (quotations and citations omitted).

BLM does note, in conceding that it has not evaluated direct and indirect impacts, refers the reader to the cumulative impacts analysis. That analysis, however, provides BLM with no harbor as it does not provide any analysis of impacts to specific resources from climate change, whether direct, indirect, or cumulative. Instead, the Leasing EAs explain:

As previously discussed in the Air Quality section of Chapter 4, it is difficult to impossible to identify specific impacts of climate change on specific resources within the project area. As summarized in the Climate Change SIR (2010), climate change impacts can be predicted with much more certainty over global or continental scales. Existing models have difficulty reliably simulating and attributing observed temperature changes at small scales. On smaller scales, natural climate variability is relatively larger, making it harder to distinguish changes expected due to external forcings (such as contributions from local activities to GHGs). Uncertainties in local forcings and feedbacks also make it difficult to estimate the contribution of GHG increases to observed small-scale temperature changes (IPCC 2007b, as cited by the Climate Change SIR 2010). Effects of climate change on resources are described in Chapter 3 of this EA and in the Climate Change SIR (2010).

Miles City Leasing EA at 4.18.2.3. The alleged "difficulty" in conducting this analysis and "[u]ncertainties" do not justify the lack of analysis, as noted above. The Leasing EA's reference to the SIR is also unavailing. The SIR does not supplant BLM's independent duty to address

impacts. Moreover, the SIR is merely a literature review of current climate change science; the SIR is not and does not purport to be a hard look at the impacts of climate change to the specific resources addressed by BLM in its Leasing EAs. For example, the SIR notes that climate change will disrupt current precipitation patterns in Montana, with winter and spring increases in precipitation, and summer declines in precipitation. SIR (updated) at 3-12. Yet the SIR does not explain what these changed patterns mean for water quality in Montana or for aquatic wildlife, such as pallid sturgeon. The SIR, therefore, cannot be the hard look required by law.

Notably, as BLM's Leasing EAs note, "[e]valuating wildlife values at the landscape scale as a first step is key to understanding potential impacts of a project." Miles City FO Leasing EA at 3.7.1. We could not agree more, especially in the context of climate change. Landscape-scale impacts are critical to the identification, evaluation, and selection of commensurate landscape-scale alternatives and measures to ameliorate the cumulative impact of oil & gas development and climate change. Unfortunately, there is no landscape-scale cumulative impacts analysis to specific resources, such as aquatic wildlife, in the Leasing EAs, and no consideration of landscape-scale alternatives or mitigation.

F. BLM Has Failed to Prevent Unnecessary or Undue Degradation and Waste

BLM has a basic duty to prevent unnecessary or undue degradation and, further, a duty to prevent waste pursuant to the Federal Land Policy and Management Act ("FLPMA") and Mineral Leasing Act ("MLA"), as amended. *See* 30 U.S.C. §§ 187, 225; 43 U.S.C. § 1732(b); 43 C.F.R. § 3161.2. It is entirely unclear whether and how BLM has complied with these duties here. The Climate Hawks cannot identify a rational connection between BLM's decision to proceed with this lease sale and BLM's substantive duties, cannot identify a rational connection between BLM's Leasing EAs and these substantive duties, cannot identify any criteria explaining how BLM has actually ensured compliance with these substantive duties, and cannot identify any information indicating that BLM has addressed the Climate Hawks' concerns relative to these duties. In fact, the Climate Hawks could not find a *single* reference in BLM's leasing EAs pertaining to these substantive duties. Degradation and waste is not prevented by virtue of the existence of law; law must be applied and implemented. BLM cannot presume, as it appears to have done here, that whatever it does somehow automatically complies with FLPMA and the MLA. BLM has a basic obligation under law to provide a reasoned and informed basis demonstrating that its decisions comply with federal law that can be tested through judicial review. 5 U.S.C. §§ 706(2)(A), (C), (D). This alone is a fatal deficiency regarding the December 9th lease sale.

G. BLM Failed to Analyze and Assess Related Air Quality Impacts and Comply With Air Quality Standards

BLM's failure to take a hard look at GHG pollution and climate change impacts associated with the proposed leasing is especially troublesome in light of the associated air quality impacts.

Methane is often released with volatile organic compounds ("VOCs"), a pollutant regulated under the Clean Air Act. VOCs react with sunlight to form ground-level ozone, a

poisonous gas that can trigger asthma attacks and lead to other adverse respiratory impacts. EPA has noted, for example, that a number of methane control options achieve the co-benefit of reducing methane.¹⁴ Thus, there is a clear link between the GHG and more traditional air pollution from oil & gas operations.

Regardless, there are also number of traditional air pollution concerns associated with oil & gas development in Montana and the Dakotas that BLM has not properly addressed. Recent inventories from the Western Regional Air Partnership and cited by the EPA show that the oil and gas industry releases thousands of tons of pollutants regulated under the Clean Air Act, including not only VOCs but, also, nitrogen oxides ("NOx"), sulfur dioxide ("SO2") and others.¹⁵ This report indicates that production-related emissions increased by 75% between 2002 and 2006.¹⁶

2006 Oil and Gas Industry Emissions in Montana and the Dakotas (in tons/ ear).¹⁷

| State | VOCs | NOx | SO2 |
|--------------|---------------|---------------|--------------|
| Montana | 9,596 | 13,536 | 396 |
| North Dakota | 9,596 | 9,307 | 3,544 |
| South Dakota | 302 | 378 | 6 |
| TOTAL | 19,494 | 23,221 | 3,946 |

These emissions come from a variety of sources and practices, including compressor engines, well venting, dehydrators, pneumatic controllers, separators, tanks, truck loading, completions, leaking pipes, and more. Despite these potentially significant impacts, BLM has not taken a hard look at the air quality impacts of issuing the proposed oil and gas leases. This is both a procedural deficiency pursuant to NEPA but, also, a substantive deficiency pursuant to FLPMA. FLPMA obligates BLM to "provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards[.]" 43 U.S.C. § 1712(c)(8). In particular, the BLM is proposing to move forward with the proposed leases without providing for compliance with federal air quality standards, in this case National Ambient Air Quality Standards ("NAAQS") for ozone, particulate matter, and nitrogen dioxide, calling into question not only the legal adequacy of BLM's leasing decisions but, also, BLM's reliance on its existing land use plans to justify these leasing decisions.

¹⁴ **See e.g.**, Fernandez, R., *et al.*, "Cost-effective methane emissions reductions for small and midsize natural gas producers," *Journal of Petroleum Technology* (June 2005) (www.epa.gov/gasstar/documents/workshops/2005-annual-conf/robinson.pdf) (noting that methane control technologies and practices also achieve reductions in VOCs).

¹⁵ See U.S. EPA, *An Assessment of the Environmental Implications of Oil and Gas Production: A Regional Case Study* (Sept. 2008) (www.epa.gov/sustainableindustry/pdf/oil-gas-report.pdf).

¹⁶ *Id.* at 3-6.

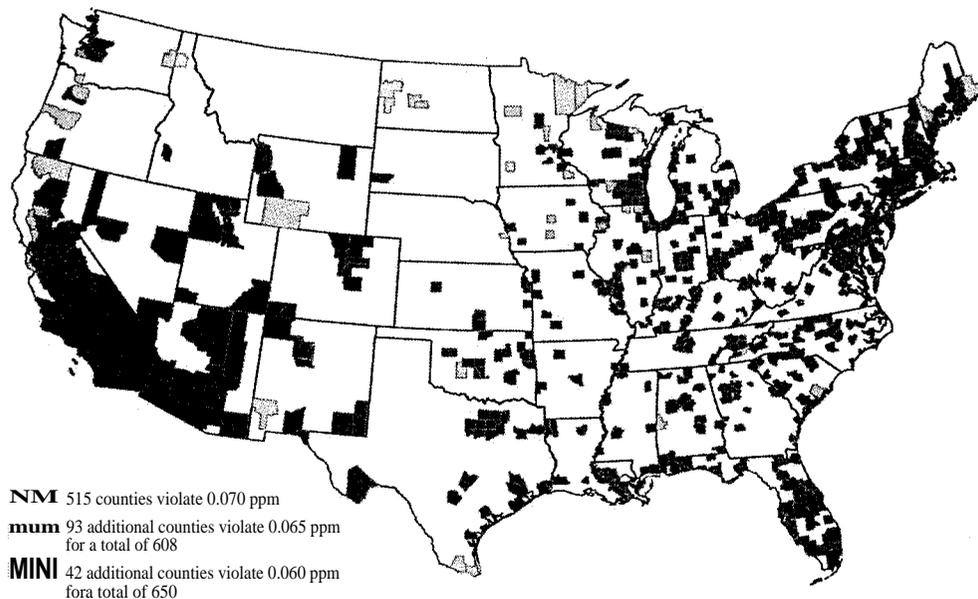
¹⁷ *Id.*

With regard to ozone, oil and gas extraction, processing, transportation and use contribute to ground level ozone via the emission of ozone precursors, NOx and VOCs. According to EPA, ozone is especially harmful to children, seniors, those with asthma and other respiratory conditions, and even active adults.¹⁸ The pollutant is linked to asthma attacks, can aggravate lung disease, send children and seniors to the emergency room, cause heart attacks, and even premature death.¹⁹ EPA finalized revised NAAQS for ozone in 2008, which limited ozone concentrations to no more than 0.075 parts per million over an eight hour period and has since proposed to update these standards to limit ozone to no more than between 0.060 and 0.070 parts per million.²⁰ There are numerous indicators that ozone levels are already problematic throughout the American West. For one thing, the EPA's map of areas likely to violate the proposed NAAQS show that a number of Counties in North Dakota, South Dakota, and neighboring Wyoming are likely to violate: *See* Image below (This map is available online at <http://www.epa.gov/air/ozonepollution/pdfs/20100104maps.pdf>).

**Counties With Monitors Violating Proposed Primary 8-hour Ground-level Ozone Standat
0.060 - 0.070 parts per million**

(Based on 2006 — 2008 Air Quality Data)

EPA will not designate areas as nonattainment on these data, but likely on 2008 — 2010 data which are expected to show improved air qu

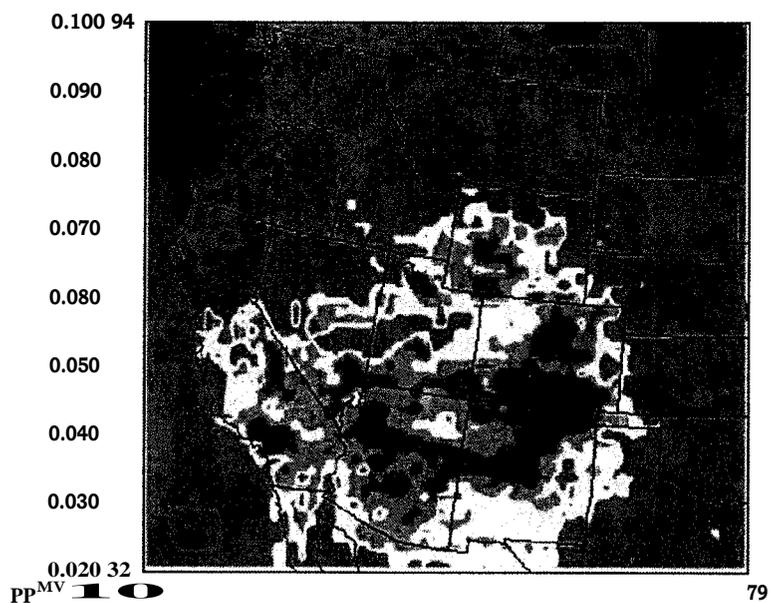


¹⁸ *See* U.S. EPA, "Smog—Who Does it Hurt? What You Need to Know About Ozone and Your Health," EPA-452/K-99-001 (July 1999) (<http://www.epa.gov/airnowilhealth/smog.pdf>).

¹⁹ *Id.*

²⁰ *See* National Ambient Air Quality Standards for Ozone, Final Rule, 73 Fed. Reg. 16,436, 16,436 (Mar. 27, 2008) (establishing current ozone standard); EPA, "National Ambient Air Quality Standards for Ozone, Proposed Rule," 75 Fed. Reg. 2930-3052 (Jan. 19, 2010) (discussing proposed lower standard).

Furthermore, there are signs that ozone is becoming a greater problem throughout the American West. For instance, a large region in Western Wyoming has been declared a nonattainment area because the region violated the ozone NAAQS in 2008.²¹ The likelihood of high ozone levels in the region is also consistent with recent modeling prepared for the Western Regional Air Partnership ("WRAP"), which further indicates that large areas of the Rocky Mountain West are projected to exceed and/or violate the ozone NAAQS by 2018. In a 2008 presentation given at a WRAP Technical Analysis Meeting in Denver, it was reported that the modeling "predicts exceedance of the 8-hour average ozone standard in much of the southwestern US, mostly in spring."²² In particular, since NAAQS will likely be lowered to some number between 0.60 and 0.70 ppm soon, this area is predicted to violate new NAAQS for ozone. The image below, presented at the WRAP Technical Analysis Meeting (slide 28), shows areas projected to exceed and/or violate the current and future ozone NAAQS. Under EPA's proposed ozone NAAQS, areas projected to exceed and/or violate the NAAQS include yellow and green. Importantly, much of Montana, North Dakota, and South Dakota are expected to exceed and/or violate the EPA's proposed NAAQS of between 0.060 and 0.070 ppm, depending on where the level is ultimately established.



Projected eight-hour ozone concentrations in Western U.S.

²¹ See Map of Wyoming nonattainment area and March 13, 2009 Wyoming Department of Environmental Quality news release (http://deq.state.wy.us/aqd/Ozone/Press%20Release_nonattainmentmarch12_3%2520CE.p_d_f).

²² Tonnesen, G., Z. Wang, M. Omary, C. Chien, Z. Adelman, and R. Morris, et al., *Review of Ozone Performance in WRAP Modeling and Relevance to Future Regional Ozone Planning*, presentation given at WRAP Technical Analysis Meeting (July 30, 2008) at unnumbered slide 30 (http://wrapair.org/forums/toc/meetings/080729m/RMC_DenverOzoneMPE_Final2.pdf).

These findings are bolstered by a recent article published in the Journal of Air and Waste Management assessing the impacts of oil and gas development on regional ozone levels in the western United States.²³ The study found:

A regional air quality model has been applied to the western United States to investigate the impacts of emissions from oil and gas development on O₃ [ozone] concentrations. Incremental O₃ increases (8-hr average) ranging from less than 1 to 7 ppb were predicted at several western Class I areas, and a peak incremental O₃ concentration of 10 ppb was simulated in the Four Corners region. *This study, although not exhaustive, does indicate a clear potential for oil and gas development to negatively affect regional O₃ 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.'*

This study further indicates that the impacts of oil and gas development to ozone levels must be analyzed and assessed before proceeding with this lease sale.

In addition, recent scientific studies show that ozone in the Western United States is uniquely influenced by atypical factors. For instance, the National Oceanic and Atmospheric Administration ("NOAA") recently completed a study finding that ozone air pollution can be problematic in winter in the Rocky Mountain West. After studying the phenomenon in Western Colorado, NOAA stated in a press release that:

The NOAA team found ozone was rapidly produced on frigid February days in 2008 when three factors converged: ozone-forming chemicals from the natural gas field, a strong temperature inversion that trapped the chemicals close to the ground, and extensive snow cover, which provided enough reflected sunlight to jump-start the needed chemical reactions.²⁵

NOAA reported, "the problem could be more widespread," explaining: "Rapid production of wintertime ozone is probably occurring in other regions of the western United States, in Canada, and around the world." *Id.*

There is also increasing evidence that global warming is affecting ambient ozone concentrations. As the United Nations Environmental Programme (UNEP) notes, global

²³ [www.wrapair.org/forums/amc/meetings/09_111111Nox/Rodriguez et al OandG Impacts JAWMA9 09.pdf](http://www.wrapair.org/forums/amc/meetings/09_111111Nox/Rodriguez%20et%20al%20OandG%20Impacts%20JAWMA9%2009.pdf).

²⁴ *Id.* at 1118 (emphasis added).

²⁵ NOAA Press Release (Jan. 18, 2009) (www.noaa.gov/newsroom/stories/2009/20090118_ozone.html).

warming is an increasingly significant factor "promot[ing] the formation of surface ozone."²⁶ One of the principal effects of global warming is an increase in the "frequency and intensity of heat waves."²⁷ As a result of the tendency of global warming to produce longer and hotter summer peak temperatures, the Intergovernmental Panel on Climate Change projects increases in July mean ozone concentrations over the industrialized continents of the northern hemisphere will climb above 0.07 ppm by the year 2100.²⁸ Further, a 2007 study by scientists at Harvard, NASA, and Argonne National Laboratory specifically reported that global warming is likely to increase maximum eight-hour ozone concentrations by 2-5 parts per billion (0.02-0.05 ppm) over large swaths of the United States, including in Montana and the Dakotas, by mid-century.²⁹

Even EPA has noted the need for federal land management agencies to quantify impacts to ambient ozone concentrations in the area in response to large scale oil and gas development proposals. In comments to the BLM regarding the West Tavaputs Plateau natural gas development project in Utah, EPA stated that "additional cumulative and project-specific air impact modeling should be completed" to address ozone impacts.³⁰ In comments to BLM regarding expansion of oil and gas drilling and production operations in the Pinedale Anticline Project Area of Wyoming, EPA commended BLM for "using the photochemical grid model, CAMx" in analyzing ozone impacts and noted: "This level of analysis is particularly important given the elevated ozone levels that have been recorded at ambient air monitoring stations neighboring the [project area]."³¹

²⁶ UNEP, *How Will Global Warming Affect My World: A Simplified Guide to the IPCC's "Climate Change 2001: Impacts, Adaptation and Vulnerability,"* 14, GE.03-03327-December 2003-2,000.

" *Id.* at 14.

²⁸ IPCC, *Climate Change 2001: Working Group II: Impacts, Adaptation and Vulnerability, Technical Summary* at Part 3.5.

²⁹ Wu, S., *et al.*, "Effects of 2000-2050 changes in climate and emissions on global tropospheric ozone and the policy-relevant backgrounds surface ozone in the United States," *Journal of Geophysical Research*, Vol. 113 (2008)
(<http://citeseerx.st.psu.edu/viewdoc/download?doi=10.1.1.142.8550&rep=rep1&type=pdf>)

³⁰ Letter from Robert E. Roberts, EPA Region 8 Administrator, to Selma Sierra, Utah BLM State Director, re: West Tavaputs Plateau Natural Gas Full Field Development Plan, Draft Environmental Impact Statement Carbon County, Utah CEQ #20080028 (May 23, 2008)
([http://yosemite.epa.gov/oeca/webeis.nsf/\(PDFView\)/20080028/\\$file/20080028.PDF?OpenElement](http://yosemite.epa.gov/oeca/webeis.nsf/(PDFView)/20080028/$file/20080028.PDF?OpenElement)).

³¹ Letter from Robert E. Roberts, EPA Region 8 Administrator, to Robert A. Bennett, Wyoming BLM State Director, re: Revised Draft Supplemental Environmental Impact Statement for the Pinedale Anticline Oil and Gas Exploration and Development Project, Sublette County,

Despite all this, BLM made no effort to quantify and assess ozone impacts using readily available modeling methods. Without preparing any modeling whatsoever, the BLM has no basis to conclude that the ozone NAAQS, both current and proposed, will be protected, particularly in light of monitoring data and modeling results that utterly refute this finding.

Moving to the other NAAQSs, particulate matter is one of six "criteria" pollutants regulated under the Clean Air Act. *See* 42 U.S.C. § 7273(b)(4); 40 C.F.R. §§ 50.6, 50.7, and 50.13; *see also* National Ambient Air Quality Standards for Particulate Matter, 71 Fed. Reg. 2,620, 2,620 (January 17, 2006). The NAAQS limit for the maximum 24-hour average of PM_{2.5} is 35 $\mu\text{g}/\text{m}^3$ and 15 $\mu\text{g}/\text{m}^3$ over an annual period. PM_{2.5} includes all particles less than 2.5 microns in diameter, or 1/28th the width of a human hair. Although PM_{2.5} can be directly emitted, it can also form in secondary reactions in the atmosphere.³² According to EPA, the health effects of PM_{2.5} include:

- Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing;
- Decreased lung function;
- Aggravated asthma;
- Development of chronic bronchitis;
- Irregular heartbeat;
- Nonfatal heart attacks; and:
- Premature death.³³

On February 9, 2010, EPA finalized revisions to the nitrogen dioxide NAAQS, supplementing the current annual standard of 53 ppb with a 1-hour standard of 100 ppb.³⁴ These NAAQS became effective on April 12, 2010. Nitrogen dioxide is linked to a number of adverse

Wyoming CEQ #20070542 (Feb. 14, 2008) at 3
(www.law.indiana.edu/publi_cland/files/blm_r8finalletter_pinedale_2-14-08.pdf).

³² www.epa.gov/pmdesignations/basicinfo.htm

³³ U.S. EPA, Health and Environmental Effects of PM-2.5 (www.epa.gov/particles/health.html).

³⁴ Primary National Ambient Air Quality Standards for Nitrogen Dioxide, Final Rule, 75 Fed. Reg. 6474-6537 (Feb. 9, 2010).

health effects?' Recent modeling prepared by the BLM in regards to coal mining in the Powder River Basin indicates that the 1-hour nitrogen dioxide NAAQS is projected to be violated on a cumulative basis in Montana and that particulate matter standards are projected to be violated in the Powder River Basin of Wyoming.³⁶ This modeling bolsters our concerns that BLM failed to adequately analyze and assess the potentially significant air quality impacts.

There are, notably, a number of potential alternatives that the BLM could have required. To begin with, and similar to our recommendations pertaining to GHG prevention and abatement alternatives, the BLM could establish leasing stipulations that require the use of specific technologies and/or practices. With regard to VOC emissions, a number of cost-effective technologies and practices exist to keep emissions in check. A recent article in the Journal of Petroleum Technology identified over a dozen technologies and practices to help reduce methane emissions from wells, completions, tanks, separators, facilities, flowlines, pneumatics, and compressor engines.³⁷ Because methane is emitted with VOCs, reducing methane both retains a valuable product and limits emissions of ozone-forming pollution. Oftentimes, reducing both VOC and methane emissions is simply a matter of enhancing the inspection and maintenance of facilities.³⁸

In 2007, the WRAP released a report detailing a number of methods to reduce both NOx and VOC emissions from oil and gas operations.³⁹ The report detailed opportunities to reduce NOx emissions from compressor engines and drill rig engines, such as post-combustion controls,

³⁵ U.S. EPA, Health Effects of Nitrogen Dioxide (www.epa.gov/iaq/no2.html#Health%20Effects%20Associated%20with%20Nitrogen%20Dioxide).

³⁶ Wyoming BLM, *Final Environmental Impact Statement for Wright Area Coal Leases* at 4-47, available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/hpdo/Wright-Coal/feis.Par.6743.0.File.dat/O.8.chap4.pdf>.

³⁷ Fernandez, R., R. Petrusak, D. Robinson, and D. Zavadil, "Cost-effective methane emissions reductions for small and midsize natural gas producers," *Journal of Petroleum Technology* (June 2005) (www.epa.gov/gasstar/documents/workshops/2005-annual-conf/robinson.pdf).

³⁸ Robinson, D., "Directed Inspection and Maintenance and Infrared Leak Detection," presentation for EPA Natural GasSTAR Program (September 11, 2007) (www.epa.gov/gasstar/documents/2007-06-diminas-productionfacilities.pdf).

³⁹ Bar-Ilan, A., R. Friesen, A. Pollack, and A. Hoats, "Draft Final Report, WRAP Area Source Emissions Inventory Projections and Control Strategy Evaluation, Phase II," Report Prepared for Western Regional Air Partnership (July 2007) at 4-1 thru 4-51 ([www.wrapair.org/forums/ogwg/documents/2007-10_Phase_II_O&G_Final\)Report\(v10-07%20rev.^\).pdf](http://www.wrapair.org/forums/ogwg/documents/2007-10_Phase_II_O&G_Final)Report(v10-07%20rev.^).pdf)).

and a number of opportunities to reduce VOC emissions from glycol dehydrators, pneumatic devices, tanks, and completion/flaring/venting activities. These technologies and practices could form a strong foundation for a rigorous alternatives analysis by the Forest Service, and ultimately the development of appropriate lease stipulations.

Clearly a number of alternatives exist to address the air quality impacts of oil and gas development. Unfortunately, BLM has failed to address such reasonable alternatives in violation of NEPA and ultimately in violation of FLPMA's requirement that the BLM ensure compliance with federal and state air quality standards.

III. CONCLUSION

Given the aforementioned problems associated with this lease sale, we hereby request that BLM cancel — not simply defer — this lease sale pending completion of an EIS which considers alternatives to reduce GHG pollution, takes a hard look at methane waste and climate change impacts, and air quality issues. We also hereby request that BLM advise prospective lessees that this lease sale is under protest and will likely be subject to litigation. In the event BLM proceeds with the lease sale, we hereby request that BLM stay issuance of the leases pending resolution of any litigation. In the event that BLM rejects this request and issues the leases, we hereby request that BLM suspend all activities and operations pertaining to those leases, including lessee unitization and other drilling agreements, pending resolution of any litigation.

Sincerely,



Erik Schlenker-Goodrich
Attorney and Director, Climate & Energy Program
Western Environmental Law Center
208 Paseo del Pueblo Sur, Unit 602
Taos, New Mexico 87571

COUNSEL FOR THE CLIMATE HAWKS:

Montana Environmental Information Center, Earthworks' Oil & Gas Accountability Project, and WildEarth Guardians