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September 2, 2016

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BLM-WY STATE OFFICE

**By Hand Delivery**

Mary Jo Rugwell  
State Director  
U.S. Bureau of Land Management  
Wyoming State Office  
5353 Yellowstone Road  
Cheyenne, WY 82003

**Re: Protest of November 2016 Competitive Oil and Gas Lease Sale**

Dear Ms. Rugwell:

Pursuant to 43 C.F.R. § 3120.1-3, WildEarth Guardians hereby protests the Bureau of Land Management’s (“BLM’s”) proposal to offer 21 publicly owned oil and gas lease parcels covering 34,422.02 acres of land in the High Desert District Office of Wyoming for competitive sale on November 1, 2016. These lease parcels include the following, as identified by the BLM in its Final November 2016 Notice of Competitive Lease Sales and related Information Notices:<sup>1</sup>

**Parcels to be Auctioned on November 1, 2016 as Identified in the BLM’s Notice of Competitive Lease Sale**

| Lease Number | Acres   | Field Office | County     |
|--------------|---------|--------------|------------|
| WY-1611-001  | 1056.35 | Rawlins      | Carbon     |
| WY-1611-002  | 585.13  | Rawlins      | Carbon     |
| WY-1611-003  | 2549.41 | Rawlins      | Carbon     |
| WY-1611-004  | 1609.34 | Rawlins      | Carbon     |
| WY-1611-005  | 307.59  | Rawlins      | Carbon     |
| WY-1611-006  | 640.00  | Rawlins      | Carbon     |
| WY-1611-007  | 1829.06 | Rawlins      | Sweetwater |
| WY-1611-008  | 947.00  | Rawlins      | Sweetwater |
| WY-1611-009  | 1287.34 | Rawlins      | Sweetwater |
| WY-1611-010  | 1930.20 | Rawlins      | Sweetwater |
| WY-1611-011  | 2548.07 | Rawlins      | Sweetwater |
| WY-1611-012  | 2560.00 | Rawlins      | Sweetwater |

<sup>1</sup> The lease sale notice is available here, [https://eplanning.blm.gov/epl-front-office/projects/nepa/60579/77921/87228/11\\_16sale\\_web.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/60579/77921/87228/11_16sale_web.pdf).

|             |         |              |            |
|-------------|---------|--------------|------------|
| WY-1611-013 | 1936.65 | Rawlins      | Sweetwater |
| WY-1611-014 | 1679.28 | Rawlins      | Sweetwater |
| WY-1611-015 | 480.00  | Rock Springs | Sweetwater |
| WY-1611-016 | 2560.00 | Kemmerer     | Sweetwater |
| WY-1611-017 | 640.00  | Kemmerer     | Lincoln    |
| WY-1611-018 | 2399.00 | Pinedale     | Sublette   |
| WY-1611-019 | 557.56  | Pinedale     | Sublette   |
| WY-1611-020 | 2360.00 | Pinedale     | Sublette   |
| WY-1611-021 | 1960.00 | Pinedale     | Sublette   |

In support of its proposal, the agency prepared an Environmental Assessment (“EA”) for leasing in the High Desert District, DOI-BLM-WY-D040-2016-0138-EA.

### STATEMENT OF INTEREST

WildEarth Guardians is a nonprofit environmental advocacy organization dedicated to protecting the wildlife, wild places, wild rivers, and health of the American West. On behalf of our members, Guardians has an interest in ensuring the BLM fully protects public lands and resources as it conveys the right for the oil and gas industry to develop publicly owned minerals. More specifically, Guardians has an interest in ensuring the BLM meaningfully and genuinely takes into account the climate implications of its oil and gas leasing decisions and objectively and robustly weighs the costs and benefits of authorizing the release of more greenhouse gas emissions that are known to contribute to global warming.

WildEarth Guardians submitted comments on the BLM’s proposed leasing on May 18, 2016. These comments were directed toward the EA and flagged concerns over the BLM’s failure to adequately address the climate and sage grouse impacts of the proposed leasing. As part of these comments, Guardians referenced and attached numerous exhibits. For purposes of this protest, our comments and exhibits are hereby incorporated by reference.

The mailing address to which correspondence regarding this protest should be directed is as follows:

Jeremy Nichols  
Climate and Energy Program Director  
WildEarth Guardians  
2590 Walnut St.  
Denver, CO 80205

### STATEMENT OF REASONS

WildEarth Guardians protests the BLM’s October 2016 oil and gas lease sale over the agency’s failure to adequately analyze and assess the climate impacts and sage grouse impacts of the reasonably foreseeable oil and gas development that will result in accordance with the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4331, *et seq.*, and regulations

promulgated thereunder by the White House Council on Environmental Quality (“CEQ”), 40 C.F.R. § 1500, *et seq.*

NEPA is our “basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). The law requires federal agencies to fully consider the environmental implications of their actions, taking into account “high quality” information, “accurate scientific analysis,” “expert agency comments,” and “public scrutiny,” prior to making decisions. *Id.* at 1500.1(b). This consideration is meant to “foster excellent action,” meaning decisions that are well informed and that “protect, restore, and enhance the environment.” *Id.* at 1500.1(c).

To fulfill the goals of NEPA, federal agencies are required to analyze the “effects,” or impacts, of their actions to the human environment prior to undertaking their actions. 40 C.F.R. § 1502.16(d). To this end, the agency must analyze the “direct,” “indirect,” and “cumulative” effects of its actions, and assess their significance. 40 C.F.R. §§ 1502.16(a), (b), and (d). Direct effects include all impacts that are “caused by the action and occur at the same time and place.” 40 C.F.R. § 1508.8(a). Indirect effects are “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” *Id.* at § 1508.8(b). Cumulative effects include the impacts of all past, present, and reasonably foreseeable actions, regardless of what entity or entities undertake the actions. 40 C.F.R. § 1508.7.

An agency may prepare an EA to analyze the effects of its actions and assess the significance of impacts. *See* 40 C.F.R. § 1508.9; *see also* 43 C.F.R. § 46.300. Where effects are significant, an Environmental Impact Statement (“EIS”) must be prepared. *See* 40 C.F.R. § 1502.3. Where significant impacts are not significant, an agency may issue a FONSI and implement its action. *See* 40 C.F.R. § 1508.13; *see also* 43 C.F.R. § 46.325(2).

Here, the BLM fell short of complying with NEPA with regards to analyzing and assessing the potentially significant climate impacts of oil and gas leasing. In support of its proposed leasing, the agency prepared an EA. However, in this EA, the BLM failed to analyze the reasonably foreseeable greenhouse gas emissions that would result from selling the oil and gas lease parcels, as well as failed to assess the significance of any emissions, particularly in terms of carbon costs.

Not only that, but it appears that the agency fell short of adequately analyzing and assessing the impacts of leasing to the greater sage grouse, both failing to support a FONSI and seeming to contradict agency guidance.

Below, we detail how BLM’s proposal fails to comply with NEPA.

**1. The BLM Failed to Analyze and Assess the Direct, Indirect, and Cumulative Impacts of Greenhouse Gas Emissions that Would Result from Issuing the Proposed Lease Parcels**

In the EA, the BLM completely rejected analyzing and assessing the potential direct and indirect greenhouse gas emissions, including carbon dioxide and methane, that would result from the reasonably foreseeable development of the proposed leases. Although acknowledging that

development of the lease parcels would occur and that greenhouse gas emissions would be produced, no analysis of these emissions was actually prepared.

In the EA, the BLM appears to assert that estimates of emissions are impossible to determine because it is not possible to determinate what reasonably foreseeable development may occur. This is confusing as the BLM has been able to analyze reasonably foreseeable development that would occur from leasing in the Field Offices of the High Desert District under the current resource management plans. As the BLM explains in the EA, for all the Field Offices in the High Desert District, “a total of 12,723 total wells will be developed during the life of the plans.” EA at 56.

The failure to analyze and assess reasonably foreseeable greenhouse gas emissions is all the more egregious given that other BLM Field Offices, including, but not limited to, the Four Rivers Field Office in Idaho, the Royal Gorge Field Office of Colorado, and even Field Offices in Montana, including the Miles City Field Office in Montana, have not only estimated reasonably foreseeable greenhouse gas emissions associated with the development of oil and gas leases.

In the Four Rivers Field Office of Idaho, the BLM utilized an emission calculator developed by air quality specialists at the BLM National Operations Center in Denver to estimate likely greenhouse gases that would result from leasing five parcels. *See* Exhibit 1, BLM, “Little Willow Creek Protective Oil and Gas Leasing,” EA No. DOI-BLM-ID-B010-2014-0036-EA (February 10, 2015) at 41, available online at [https://www.blm.gov/epl-front-office/projects/nepa/39064/55133/59825/DOI-BLM-ID-B010-2014-0036-EA\\_UPDATED\\_02272015.pdf](https://www.blm.gov/epl-front-office/projects/nepa/39064/55133/59825/DOI-BLM-ID-B010-2014-0036-EA_UPDATED_02272015.pdf). Relying on a report prepared in 2013 for the BLM by Kleinfelder, the agency estimated that 2,893.7 tons of carbon dioxide equivalent (“CO<sub>2</sub>e”) would be released per well. *Id.* at 35.<sup>2</sup> Based on the analyzed alternatives, which projected between 5 and 25 new wells, the BLM estimated that total greenhouse gas emissions would be between 14,468.5 tons and 72,342.5 tons annually. *Id.*

In the Royal Gorge Field Office of Colorado, the BLM contracted with URS Group Inc. to prepare an analysis of air emissions from the development of seven oil and gas lease parcels. *See* Exhibit 3, URS Group Inc., “Draft Oil and Gas Air Emissions Inventory Report for Seven Lease Parcels in the BLM Royal Gorge Field Office,” Prepared for BLM, Colorado State Office and Royal Gorge Field Office (July 2013). This report estimated emissions of carbon dioxide and methane on a per-well basis and estimated the total number of wells that could be developed in these seven parcels. *See* Exhibit 3 at 3 and 5. This report was later supplanted by the Colorado Air Resource Management Modeling Study, or CARMMS, which estimated reasonably foreseeable emissions of greenhouse gases, criteria pollutants, and hazardous air pollutants associated with oil and gas development throughout Colorado, as well as part of New Mexico, and modeled air quality impacts. *See* Exhibit 4, ENVIRON, “Colorado Air Resource

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<sup>2</sup> This report is attached as Exhibit 2, Kleinfelder, “Air Emissions Inventory Estimates for a Representative Oil and Gas Well in the Western United States,” report prepared for Bureau of Land Management (March 25, 2013), available online at [https://climatewest.files.wordpress.com/2015/03/blm\\_oandg\\_rpt\\_final\\_032613\\_21.pdf](https://climatewest.files.wordpress.com/2015/03/blm_oandg_rpt_final_032613_21.pdf).

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Management Modeling Study (CARMMS) 2021 Modeling Results for the High, Low and Medium Oil and Gas Development Scenarios,” Prepared for BLM Colorado State Office (January 2015), available online at [http://www.blm.gov/style/medialib/blm/co/information/nepa/air\\_quality/Par.97516.File.dat/CARMMS\\_Final\\_Report\\_w-appendices\\_012015.pdf](http://www.blm.gov/style/medialib/blm/co/information/nepa/air_quality/Par.97516.File.dat/CARMMS_Final_Report_w-appendices_012015.pdf). As part of the CARMMS report, the BLM estimated per well emissions, including greenhouse gas emissions, in tons per year, as follows:

| Phase                     | PM <sub>10</sub> | PM <sub>2.5</sub> | VOC   | CO   | NO <sub>x</sub> | SO <sub>2</sub> | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | HAP  |
|---------------------------|------------------|-------------------|-------|------|-----------------|-----------------|-----------------|-----------------|------------------|------|
| Conventional Construction | 5.21             | 0.64              | 0.05  | 0.23 | 0.72            | 0.02            | 108.1           | 0.00            | 0.00             | 0.01 |
| CBM Construction          | 3.37             | 0.44              | 0.03  | 0.12 | 0.36            | 0.01            | 56.58           | 4.06            | 0.00             | 0.00 |
| Conventional Production   | 1.15             | 0.15              | 6.67  | 1.30 | 0.73            | 0.00            | 251.9           | 17.14           | 0.00             | 0.43 |
| CBM Production            | 2.25             | 0.25              | 13.10 | 1.13 | 0.62            | 0.00            | 181.6           | 19.05           | 0.00             | 1.31 |

Using these CARMMS estimates, as well as assumptions used in the agency’s reasonably foreseeable development scenario analyses, it appears relatively straightforward for the agency to have estimated total greenhouse gas emissions based on reasonably foreseeable projection of development, which the BLM has already demonstrated is feasible as evidenced by its disclosure in the EA.

Finally, in Montana, the BLM estimated likely greenhouse gas emissions from development of oil and gas leases. To do so, the agency first calculated annual greenhouse gas emissions from oil and gas activity within the Field Offices. *See* Exhibit 5, BLM, “Environmental Assessment for October 21, 2014 Oil and Gas lease Sale,” DOI-BLM-MT-0010-2014-0011-EA (May 19, 2014) at 51, available online at [http://www.blm.gov/style/medialib/blm/mt/blm\\_programs/energy/oil\\_and\\_gas/leasing/lease\\_sale/s/2014/oct\\_21\\_2014/july23posting.Par.25990.File.dat/MCFO%20EA%20October%202014%20Sale\\_Post%20with%20Sale%20\(1\).pdf](http://www.blm.gov/style/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/lease_sale/s/2014/oct_21_2014/july23posting.Par.25990.File.dat/MCFO%20EA%20October%202014%20Sale_Post%20with%20Sale%20(1).pdf). The BLM then calculated total greenhouse gases by assuming that the percentage of acres to be leased within the federal mineral estate of the Field Office would equal the percentage of emissions. *Id.* Although we have concerns over the validity of this approach to estimate emissions (an “acre-based” estimate of emissions is akin to estimating automobile emissions by including junked cars, which has the misleading effect of reducing the overall “per car” emissions), nevertheless it demonstrates that the BLM has the ability to estimate reasonably foreseeable greenhouse gas emissions associated with oil and gas leasing and that such estimates are valuable for ensuring a well-informed decision.<sup>3</sup>

Although the BLM may assert that greenhouse gas emissions are too speculative to analyze, there is no basis for such a claim. Not only has the agency estimated reasonably foreseeable development and disclosed in the EA that greenhouse gas emissions are a likely

<sup>3</sup> In addition to the Miles City Field Offices, the BLM has estimated greenhouse gas emissions associated with oil and gas leasing in the Billings, Butte, and Dillon Field Offices.

reasonably foreseeable consequence of issuing the leases and conveying the rights for leaseholders to develop, but using the agency's own logic, this would mean any analysis of future environmental impacts would be incredibly uncertain. Of course, this would completely undermine NEPA's mandate that significance be based on "uncertain[ty]." 40 C.F.R. § 1508.27(b)(5). Indeed, if the climate impacts of oil and gas leasing are, as the BLM asserts, so uncertain, then an EIS is justified. As CEQ states, whether or not impacts are significant, and therefore trigger the need to prepare an EIS, are based on whether impacts are "highly uncertain or involve unique or unknown risks." *Id.* The BLM cannot summarily dismiss significant issues, such as climate change, on the basis of uncertainty without assessing whether this uncertainty necessitates preparation of an EIS.

The BLM seems to attempt to argue that an analysis of greenhouse gas emissions is more appropriate at the drilling stage. We have yet to see the BLM actually prepare such a site-specific analysis in conjunction with an oil and gas lease development proposal. This is confirmed by a number of EAs prepared by the BLM for development proposals in the High Desert District where no actual analysis of greenhouse gas emissions occurred. For instance:

- In an August 2015 EA for several natural gas wells in the Rawlins Field Office targeting development of federal lease WYW-137698, the BLM prepared no analysis or assessment of greenhouse gas emissions. *See* Exhibit 6, BLM, "Environmental Assessment 1692 Catalina D 44-13R, 42-24R, 44-24R, and 31-24R 4 Proposed Coal-Bed Methane Natural Gas Well Pads, Access Roads, Pipelines, and Utility Corridors," EA No. DOI-BLM-WY-030-2015-0080-EA (Aug. 2015), available online at [http://www.blm.gov/style/medialib/blm/wy/information/NEPA/rfodocs/atlantic\\_rim/ea/catalina/PodD.Par.45827.File.dat/CatalinaPodD-EAfinal.pdf](http://www.blm.gov/style/medialib/blm/wy/information/NEPA/rfodocs/atlantic_rim/ea/catalina/PodD.Par.45827.File.dat/CatalinaPodD-EAfinal.pdf). Although this discloses that greenhouse gas emissions will be released, it makes no effort to quantify such emissions; and
- In a July 2016 EA for an oil well in the Rawlins Field Office, the BLM prepared no analysis or assessment of greenhouse gas emissions. *See* Exhibit 7, BLM, "Environmental Assessment GRMR Oil and Gas LLC, Bulleit Federal 1309 Oil Well in Carbon County, Wyoming," EA No. DOI-BLM-WY-D030-2016-0081-EA (July 2016), available online at [https://eplanning.blm.gov/epl-front-office/projects/nepa/58646/77442/86108/DOI\\_BLM\\_WY\\_D030\\_2016\\_0081\\_EA\\_GRMR\\_Bulleit\\_Federal.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/58646/77442/86108/DOI_BLM_WY_D030_2016_0081_EA_GRMR_Bulleit_Federal.pdf). Although this discloses that greenhouse gas emissions will be released, it makes no effort to quantify such emissions;

What's more, BLM's argument has no merit as the agency has proposed no stipulations that would grant the agency discretion to limit, or outright prevent, development of the proposed leases on the basis of greenhouse gas emissions and/or climate concerns. The BLM is effectively proposing to make an irreversible commitment of resources, which is the hallmark of significance under NEPA. *See* 42 U.S.C. § 4332(c)(v) and 40 C.F.R. § 1502.16. The failure to prepare an EIS—or any analysis for that matter—to address the potentially significant reasonably foreseeable greenhouse gas emissions that would result from the proposed leases is contrary to NEPA.

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Not only that, but the BLM's claim that emissions cannot be estimated appears to fly in the face of recent guidance adopted by the CEQ, which requires agencies to disclose reasonably foreseeable direct and indirect greenhouse gas emissions in order to adequately and accurately disclose the climate impacts of their actions. *See* Exhibit 8, CEQ, Memorandum for Heads of Federal Departments and Agencies, "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews" (Aug. 1, 2016), available online at [https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa\\_final\\_ghg\\_guidance.pdf](https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf)

Finally, it is concerning that BLM's refusal to analyze reasonably foreseeable greenhouse gas emissions associated with leasing effectively ignores the potentially significant impacts of similar actions, including related oil and gas leasing and other oil and gas development decisions being proposed by the BLM. Under NEPA, an analysis of environmental impacts must consider the impacts of "similar actions," or other reasonably foreseeable proposed BLM actions that have common timing and geography, and that pose similar environmental impacts. 40 C.F.R. § 1508.25(a)(3). Here, it is concerning that the BLM did not even address in a single NEPA document the reasonably foreseeable greenhouse gas emissions that would result from leasing in other Districts and Field Offices in Wyoming, as well as emissions resulting from other concurrent oil and gas leasing development proposals in other states, including, but not limited to, Colorado, Montana, New Mexico, and Utah.

**2. The BLM Failed to Analyze the Costs of Reasonably Foreseeable Carbon Emissions Using Well-Accepted, Valid, Credible, GAO-Endorsed, Interagency Methods for Assessing Carbon Costs that are Supported by the White House**

Compounding the failure of the BLM to analyze the greenhouse gas emissions that would result from reasonably foreseeable oil and gas development is that the agency also rejected analyzing and assessing these emissions in the context of their costs to society. It is particularly disconcerting that the agency refused to analyze and assess costs using the social cost of carbon protocol, a valid, well-accepted, credible, and interagency endorsed method of calculating the costs of greenhouse gas emissions and understanding the potential significance of such emissions.

The social cost of carbon protocol for assessing climate impacts is a method for "estimat[ing] the economic damages associated with a small increase in carbon dioxide (CO2) emissions, conventionally one metric ton, in a given year [and] represents the value of damages avoided for a small emission reduction (i.e. the benefit of a CO2 reduction)." *See* Exhibit 10 to Guardians' May 18, 2016 Comments, EPA, "Fact Sheet: Social Cost of Carbon" (Nov. 2013) at 1, available online at <http://www.epa.gov/climatechange/Downloads/EPAactivities/scc-fact-sheet.pdf>. The protocol was developed by a working group consisting of several federal agencies, including the U.S. Department of Agriculture, EPA, CEQ, and others.

In 2009, an Interagency Working Group was formed to develop the protocol and issued final estimates of carbon costs in 2010. *See* Interagency Working Group on Social Cost of

Carbon, “Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866” (Feb. 2010), available online at <https://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>. These estimates were then revised in 2013 by the Interagency Working Group, which at the time consisted of 13 agencies. *See* Interagency Working Group on Social Cost of Carbon, “Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866” (May 2013), available online at [https://www.whitehouse.gov/sites/default/files/omb/inforeg/social\\_cost\\_of\\_carbon\\_for\\_ria\\_2013\\_update.pdf](https://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf). This report and the social cost of carbon estimates were again revised in 2015. *See* Exhibit 13 to Guardians’ May 18, 2016 Comments, Interagency Working Group on Social Cost of Carbon, “Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866” (July 2015), available online at <https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf>.

Depending on the discount rate and the year during which the carbon emissions are produced, the Interagency Working Group estimates the cost of carbon emissions, and therefore the benefits of reducing carbon emissions, to range from \$11 to \$220 per metric ton of carbon dioxide. *See* Chart Below. In its most recent update to the Social Cost of Carbon Technical Support Document, the White House’s central estimate was reported to be \$36 per metric ton. *See* Exhibit 9 to this Protest, White House, “Estimating the Benefits from Carbon Dioxide Emissions Reductions,” website available at <https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>. In July 2014, the U.S. Government Accountability Office (“GAO”) confirmed that the Interagency Working Group’s estimates were based on sound procedures and methodology. *See* Exhibit 16 to Guardians’ May 18, 2016 Comments, GAO, “Regulatory Impact Analysis, Development of Social Cost of Carbon Estimates,” GAO-14-663 (July 2014), available online at <http://www.gao.gov/assets/670/665016.pdf>.

**Revised Social Cost of CO<sub>2</sub>, 2010 – 2050 (in 2007 dollars per metric ton of CO<sub>2</sub>)**

| Discount Rate | 5.0% | 3.0% | 2.5% | 3.0% |
|---------------|------|------|------|------|
| Year          | Avg  | Avg  | Avg  | 95th |
| 2010          | 10   | 31   | 50   | 86   |
| 2015          | 11   | 36   | 56   | 105  |
| 2020          | 12   | 42   | 62   | 123  |
| 2025          | 14   | 46   | 68   | 138  |
| 2030          | 16   | 50   | 73   | 152  |
| 2035          | 18   | 55   | 78   | 168  |
| 2040          | 21   | 60   | 84   | 183  |
| 2045          | 23   | 64   | 89   | 197  |
| 2050          | 26   | 69   | 95   | 212  |

**Most recent social cost of carbon estimates presented by Interagency Working Group on Social Cost of Carbon. The 95th percentile value is meant to represent “higher-than-expected” impacts from climate change.**

Although often utilized in the context of agency rulemakings, the protocol has been recommended for use and has been used in project-level decisions. For instance, the EPA recommended that an EIS prepared by the U.S. Department of State for the proposed Keystone

XL oil pipeline include “an estimate of the ‘social cost of carbon’ associated with potential increases of GHG emissions.” Exhibit 14 to Guardians’ May 18, 2016 Comments, EPA, Comments on Supplemental Draft EIS for the Keystone XL Oil Pipeline (June 6, 2011).

More importantly, the BLM has also utilized the social cost of carbon protocol in the context of oil and gas approvals. In recent EAs for oil and gas leasing, the agency estimated “the annual SCC [social cost of carbon] associated with potential development on lease sale parcels.” Exhibit 5 at 76. In conducting its analysis, the BLM used a “3 percent average discount rate and year 2020 values,” presuming social costs of carbon to be \$46 per metric ton. *Id.* Based on its estimate of greenhouse gas emissions, the agency estimated total carbon costs to be “\$38,499 (in 2011 dollars).” *Id.* In Idaho, the BLM also utilized the social cost of carbon protocol to analyze and assess the costs of oil and gas leasing. Using a 3% average discount rate and year 2020 values, the agency estimated the cost of carbon to be \$51 per ton of annual CO<sub>2</sub>e increase. *See* Exhibit 1 at 81. Based on this estimate, the agency estimated that the total carbon cost of developing 25 wells on five lease parcels to be \$3,689,442 annually. *Id.* at 83.

To be certain, the social cost of carbon protocol presents a conservative estimate of economic damages associated with the environmental impacts climate change. As the EPA has noted, the protocol “does not currently include all important [climate change] damages.” Exhibit 10 to Guardians’ June 14, 2016 Comments. As explained:

The models used to develop [social cost of carbon] estimates do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research.

*Id.* In fact, more recent studies have reported significantly higher carbon costs. For instance, a report published this month found that current estimates for the social cost of carbon should be increased six times for a mid-range value of \$220 per ton. *See* Exhibit 12 to Guardians’ May 18, 2016 Comments, Moore, C.F. and B.D. Delvane, “Temperature impacts on economic growth warrant stringent mitigation policy,” *Nature Climate Change* (January 12, 2015) at 2. In spite of uncertainty and likely underestimation of carbon costs, nevertheless, “the SCC is a useful measure to assess the benefits of CO<sub>2</sub> reductions,” and thus a useful measure to assess the costs of CO<sub>2</sub> increases. Exhibit 10 to Guardians’ May 18, 2016 Comments.

That the economic impacts of climate change, as reflected by an assessment of social cost of carbon, should be a significant consideration in agency decisionmaking, is emphasized by a recent White House report, which warned that delaying carbon reductions would yield significant economic costs. *See* Exhibit 10, Executive Office of the President of the United States, “The Cost of Delaying Action to Stem Climate Change” (July 2014), available online at [https://www.whitehouse.gov/sites/default/files/docs/the\\_cost\\_of\\_delaying\\_action\\_to\\_stem\\_climate\\_change.pdf](https://www.whitehouse.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf). As the report states:

[D]elaying action to limit the effects of climate change is costly. Because CO<sub>2</sub>

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accumulates in the atmosphere, delaying action increases CO<sub>2</sub> concentrations. Thus, if a policy delay leads to higher ultimate CO<sub>2</sub> concentrations, that delay produces persistent economic damages that arise from higher temperatures and higher CO<sub>2</sub> concentrations. Alternatively, if a delayed policy still aims to hit a given climate target, such as limiting CO<sub>2</sub> concentration to given level, then that delay means that the policy, when implemented, must be more stringent and thus more costly in subsequent years. In either case, delay is costly.

*Id.* at 1.

The requirement to analyze the social cost of carbon is supported by the general requirements of NEPA, specifically supported in federal case law. As explained, NEPA requires agencies to analyze the consequences of proposed agency actions and consider include direct, indirect, and cumulative consequences. In terms of oil and gas leasing, an analysis of site-specific impacts must take place at the lease stage and cannot be deferred until after receiving applications to drill. *See New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 717-18 (10th Cir. 2009); *Conner v. Burford*, 848 F.2d 1441 (9th Cir.1988); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1227 (9th Cir.1988).

To this end, courts have ordered agencies to assess the social cost of carbon pollution, even before a federal protocol for such analysis was adopted. In 2008, the U.S. Court of Appeals for the Ninth Circuit ordered the National Highway Traffic Safety Administration to include a monetized benefit for carbon emissions reductions in an Environmental Assessment prepared under NEPA. *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172, 1203 (9th Cir. 2008). The Highway Traffic Safety Administration had proposed a rule setting corporate average fuel economy standards for light trucks. A number of states and public interest groups challenged the rule for, among other things, failing to monetize the benefits that would accrue from a decision that led to lower carbon dioxide emissions. The Administration had monetized the employment and sales impacts of the proposed action. *Id.* at 1199. The agency argued, however, that valuing the costs of carbon emissions was too uncertain. *Id.* at 1200. The court found this argument to be arbitrary and capricious. *Id.* The court noted that while estimates of the value of carbon emissions reductions occupied a wide range of values, the correct value was certainly not zero. *Id.* It further noted that other benefits, while also uncertain, were monetized by the agency. *Id.* at 1202.

More recently, a federal court has done likewise for a federally approved coal lease. That court began its analysis by recognizing that a monetary cost-benefit analysis is not universally required by NEPA. *See High Country Conservation Advocates v. U.S. Forest Service*, 52 F.Supp.3d 1174 (D. Colo. 2014), citing 40 C.F.R. § 1502.23. However, when an agency prepares a cost-benefit analysis, “it cannot be misleading.” *Id.* at 1182 (citations omitted). In that case, the NEPA analysis included a quantification of benefits of the project. However, the quantification of the social cost of carbon, although included in earlier analyses, was omitted in the final NEPA analysis. *Id.* at 1196. The agencies then relied on the stated benefits of the project to justify project approval. This, the court explained, was arbitrary and capricious. *Id.* Such approval was based on a NEPA analysis with misleading economic assumptions, an approach long disallowed by courts throughout the country. *Id.*

Most recently, the U.S. Court of Appeals for the 7<sup>th</sup> Circuit solidly upheld the federal government's consideration of climate costs to society when assessing the overall costs and benefits of an action. See Exhibit 11, *Zero Zone, Inc., et al. v. U.S. Department of Energy*, No. 14-2147, slip op. (7<sup>th</sup> Cir. 2016).

A recent op-ed in the New York Times from Michael Greenstone, the former chief economist for the President's Council of Economic Advisers, confirms that it is appropriate and acceptable to calculate the social cost of carbon when reviewing whether to approve fossil fuel extraction. See Exhibit 12, Greenstone, M., "There's a Formula for Deciding When to Extract Fossil Fuels," *New York Times* (Dec. 1, 2015), available online at [http://www.nytimes.com/2015/12/02/upshot/theres-a-formula-for-deciding-when-to-extract-fossil-fuels.html?\\_r=0](http://www.nytimes.com/2015/12/02/upshot/theres-a-formula-for-deciding-when-to-extract-fossil-fuels.html?_r=0).

In light of all this, it appears more than reasonable to have expected the BLM to take into account carbon costs as part of its NEPA analyses. The agency did not. Instead, the BLM rejected the notion that analyzing climate impacts was even possible, implicitly concluding that there would be no climate impacts and no climate costs associated with the proposed oil and gas leasing. This renders the EA fatally flawed and unable to support a FONSI.

Although the BLM may claim it is not obligated to conduct a cost-benefit analysis under NEPA, the EA in numerous places discloses the potential economic costs associated with not leasing the proposed oil and gas leases and touts the likely economic benefits associated with leasing. See EA at 76-77. The BLM cannot selectively analyze and assess only certain costs and benefits under NEPA.

BLM's response, however, ignores the fact that social cost of carbon isn't solely a means of monetizing the potential climate costs of its proposed action, it is also a means of properly assessing the significance of the climate impacts of its action. Here, a social cost of carbon analysis would have provided a useful measure of significance for the public and the decisionmaker, shedding clearer light on just how bad—or how good—the proposed leasing may be from a climate standpoint. Simply because it requires a calculation of "dollars" does not, under NEPA, mean that the agency is now somehow thrust into preparing an unwieldy, useless, or unnecessary cost-benefit analysis. Here, the gist of the BLM's response seems to be that the agency simply won't like what the results of its analysis will mean. However, simply because an agency dislikes the outcome of an environmental analysis does not allow it to forego its duty under NEPA.

The failure of the BLM to analyze and assess the social cost of carbon indicates that the agency failed to appropriately analyze and assess the climate impacts of the proposed leasing, further undermining any assertion that a FONSI is appropriate.

### **3. The BLM Failed to Appropriately Analyze and Assess Impacts to Sage Grouse**

We specifically protest Parcels 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21, which are completely or partially within sage grouse Core Areas ("PHMAs") or

General Habitat Management Areas (“GHMAs”) according to our GIS map screening information. We protest the parcels proposed for leasing in sage grouse PHMAs and GHMAs (together, “sage grouse parcels”) because sage grouse stipulations prescribed in BLM land-use plan amendments and revisions to protect greater sage grouse are scientifically unsound, legally invalid, and fail to grant an adequate level of protection to allow for the survival of greater sage grouse in the context of development on oil and gas leases.

We also protest the sage grouse parcels because the leasing of PHMA and GHMA lands is inconsistent with the new plan amendments’ direction to prioritize oil and gas leasing and development outside designated sage grouse habitats. Under BLM’s greater sage grouse plan amendments (“RMPAs”), the agency made an explicit commitment to prioritize oil and gas leasing and development outside PHMAs (which include SFAs) and GHMAs. Particularly relevant to this lease sale:

“Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, and subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG.” Casper, Kemmerer, Newcastle, Pinedale, Rawlins, and Rock Springs Field Offices Approved RMP Amendment for Greater Sage-Grouse at 24.

It is notable that this plan direction does not include any loopholes for lands of less than 11 unleased and contiguous square miles under federal surface or mineral ownership. To comply with this direction, BLM needs to require leaseholders to diligently explore for and develop all existing fluid mineral leases, prioritizing those outside sage grouse habitats, before any new leases are offered at auction inside designated sage grouse habitats. Thus, all sage grouse parcels in both Core Area and General Habitat Management Area (“GHMA”) in this lease sale must therefore be removed from the auction.

Parcels 1, 2, 3, 6, 7, and 8 are completely or partially within sage grouse Core Areas. ‘No leasing in Core Areas’ is one reasonable alternative. National Technical Team recommendations must be analyzed in detail as an alternative, and leasing Core Area lands regardless of what screening mechanisms they have been subjected to will violate CEQ guidance and the RMP direction to prioritize leasing and development outside Core Areas and GHMAs. Please note that the National Technical Team did not recommend screening parcels inside Core Areas for at least 11 square miles of unleased federal mineral estate before closing federal lands to future leasing.

We agree with BLM’s recommendations to defer in whole or in part the offering of the majority of parcels proposed for this lease sale that fall entirely or partially within Core Areas. It is a wise decision to defer the long-term commitment of mineral leases in areas that are sensitive sage grouse habitats. This is consistent with the Presidential Memorandum of November 6, 2015 titled “Mitigating Impacts on Natural Resources From Development and Encouraging Related Private Investment,” which directs federal agencies “to avoid and then minimize harmful effects to land, water, wildlife, and other ecological resources (natural resources) caused by land- or

water-disturbing activities... .” 80 Fed. Reg. 68743, 68744. This Presidential Memorandum also directs agencies to identify areas “where natural resource values are irreplaceable;” sage grouse habitats clearly fall into this category, as there is no demonstrated possibility of creating or restoring sage grouse habitats once they have been destroyed due to the fragility and long recovery times of the sagebrush habitats upon which the grouse depend.

Parcels 1, 2, 3, 6, 7, and 8 fall entirely or partially within Core Areas based on our leasing screens, yet are not earmarked for even partial deferral. Regardless of whether these parcels are within 11 square miles of contiguous unleased federal estate or not, BLM should defer leasing on these parcels as well in conformance with direction in the Wyoming Approved Greater Sage-grouse Resource Management Plan Amendment establishing enhanced protections for sage grouse habitats. For this reason, these parcels should be deferred as well.

All parcels listed above should be deferred from the lease sale. BLM should do its best to keep largely unleased areas of public land in designated sage grouse habitats unleased, regardless of mineral ownership patterns. Since 1965, grouse populations have declined significantly, and these declines continue in recent years, with the risk of sage grouse extirpation a sizeable threat over large portions of the species’ range.<sup>4</sup> These declines are attributable at least in part to habitat loss due to mining and energy development and associated roads, and to habitat fragmentation due to roads and well fields. Oil and gas development poses perhaps the greatest threat to sage grouse viability in the region. The area within 5.3 miles of a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. In a study near Pinedale, Wyoming, sage grouse from disturbed leks where gas development occurred within 3 km of the lek site showed lower nesting rates (and hence lower reproduction), traveled farther to nest, and selected greater shrub cover than grouse from undisturbed leks.<sup>5</sup> According to this study, impacts of oil and gas development to sage grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. These impacts have not been thoroughly evaluated with full NEPA analysis.

All parcels listed above should be deferred from the lease sale, and to the extent they are not deferred, we protest them. BLM should do its best to keep largely unleased areas of public land in designated sage grouse habitats unleased, regardless of mineral ownership patterns. Since 1965, grouse populations have declined significantly, and these declines continue in recent years, with the risk of sage grouse extirpation a sizeable threat over large portions of the species’

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<sup>4</sup> Garton, E.O., A.G. Wells, J.A. Baumgardt, and J.W. Connelly. 2015. Greater sage-grouse population dynamics and probability of persistence. Final Report to Pew Charitable Trusts, 90 pp. Online at <http://www.pewtrusts.org/~media/assets/2015/04/garton-et-al-2015-greater-sagegrouse-population-dynamics-and-persistence-31815.pdf>.

<sup>5</sup> Lyon, A.G. 2000. The potential effects of natural gas development on sage-grouse (*Centrocercus urophasianus*) near Pinedale, Wyoming. M.S. Thesis, Univ. of Wyoming, 121 pp.

range.<sup>6</sup> These declines are attributable at least in part to habitat loss due to mining and energy development and associated roads, and to habitat fragmentation due to roads and well fields. Oil and gas development poses perhaps the greatest threat to sage grouse viability in the region. The area within 5.3 miles of a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. In a study near Pinedale, Wyoming, sage grouse from disturbed leks where gas development occurred within 3 km of the lek site showed lower nesting rates (and hence lower reproduction), traveled farther to nest, and selected greater shrub cover than grouse from undisturbed leks.<sup>7</sup> According to this study, impacts of oil and gas development to sage grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. These impacts have not been thoroughly evaluated with full NEPA analysis.

In addition, Parcels 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21 are wholly or in part outside designated Core Areas yet are in habitats of extreme high value as sage grouse habitat, and appear to be within General Habitat Management Area (GHMA) lands. These GHMA parcels should be deferred as well to implement RMPA direction to prioritize leasing and development outside GHMA areas, and due to the scientifically inadequate sage grouse habitat protections applied to GHMA areas under the approved RMPA.

BLM chose not to consider deferring all parcels that fall within sage grouse Core Areas and GHMAs. This alternative is a fully reasonable and well-reasoned option, and BLM provides no explanation for why it was not considered in detail; this failure is inconsistent with the precepts of NEPA. Neither IM referenced precludes BLM from adopting stronger protection measures for sage grouse than are explicitly prescribed under the guidance they contain. Under NEPA, BLM must consider a range of reasonable alternatives, including those that are outside the agency's authority to implement. In this case, such an alternative would be fully within BLM's authority to implement; state office or national Instruction Memoranda are readily replaced without NEPA process.

BLM's failure to note parcels that overlap with sage grouse GHMAs is a failure of NEPA's baseline information and hard look requirements. All portions of these parcels falling within GHMAs should be deferred as well, in order to implement the Mitigation Policy outlined earlier in these comments. The scientific information outlined elsewhere in these comments applies equally to GHMA, and the potential for significant impacts to sage grouse lek populations from oil and gas development springing from this lease sale is just as legally required in GHMA as in PHMA or SFA areas. In particular, the 0.25-mile 'No Surface Occupancy' buffers and 2-mile Timing Limitation Stipulations prescribed for PHMAs under

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<sup>6</sup> Garton, E.O., A.G. Wells, J.A. Baumgardt, and J.W. Connelly. 2015. Greater sage-grouse population dynamics and probability of persistence. Final Report to Pew Charitable Trusts, 90 pp. Online at <http://www.pewtrusts.org/~media/assets/2015/04/garton-et-al-2015-greater-sagegrouse-population-dynamics-and-persistence-31815.pdf>.

<sup>7</sup> Lyon, A.G. 2000. The potential effects of natural gas development on sage-grouse (*Centrocercus urophasianus*) near Pinedale, Wyoming. M.S. Thesis, Univ. of Wyoming, 121 pp.

BLM plans have explicitly been tested and found to result in significant negative impacts to sage grouse populations in the context of oil and gas development.<sup>8</sup> According to Apa et al. (2008), “Buffer sizes of 0.25 mi., 0.5 mi., 0.6 mi., and 1.0 mi. result in estimated lek persistence of 5%, 11%, 14%, and 30%.”<sup>9</sup> BLM’s own NEPA analysis for a recent Miles City Field Office oil and gas leasing EA<sup>10</sup> provides a thorough synopsis:

“Sage grouse are offered species specific protections through a stipulation. Under Alternative B, ¼ mile NSO buffers and 2 mile timing buffers would apply where relevant. Based on research, these stipulations for sage grouse are considered ineffective to ensure that sage grouse can persist within fully developed areas. With regard to existing restrictive stipulations applied by the BLM, (Walker et al. 2007a) research has demonstrated that the 0.4-km (0.25 miles) NSO lease stipulation is insufficient to conserve breeding sage-grouse populations in fully developed gas fields because this buffer distance leaves 98 percent of the landscape within 3.2 km (2 miles) open to full-scale development. Full-field development of 98 percent of the landscape within 3.2 km (2 miles) of leks in a typical landscape in the Powder River Basin reduced the average probability of lek persistence from 87 percent to 5 percent (Walker et al. 2007a).

According to Walker et al. (2007),<sup>11</sup>

Current lease stipulations that prohibit development within 0.4 km of sage-grouse leks on federal lands are inadequate to ensure lek persistence and may result in impacts to breeding populations over larger areas. Seasonal restrictions on drilling and construction do not address impacts caused by loss of sagebrush and incursion of infrastructure that can affect populations over long periods of time.

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<sup>8</sup> Holloran 2005.

<sup>9</sup> Apa, T., J. Bohne, T. Christiansen, J. Herbert, B. James, R. Northrup, D. Olsen, A. Robinson, P. Schnurr, T.O. Smith, and B. Walker. 2008. Using the Best Available Science to Coordinate Conservation Actions that Benefit Greater Sage-grouse Across States Affected by Oil & Gas Development in Management Zones I-II (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming). Unpublished multi-state report of game and fish agencies, 10 pp. Online at [http://www.ourpubliclands.org/files/upload/ti-State\\_ScienceGroupDocument\\_FINAL\\_01-28-08.pdf](http://www.ourpubliclands.org/files/upload/ti-State_ScienceGroupDocument_FINAL_01-28-08.pdf).

<sup>10</sup> Miles City October 2014 Oil and Gas Leasing EA, Environmental Assessment DOI-BLM-MT-C020-2014-0091-EA, May 19, 2014 at 60.

<sup>11</sup> Walker, B.L., D.E. Naugle, and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71(8):2644-2654.

In its 2010 Final Rule<sup>12</sup> finding the greater sage grouse “warranted, but precluded” for listing under the Endangered Species Act, the U.S. Fish and Wildlife Service made the following observations based on the best available scientific and commercial information:

The rationale for using a 0.4-km (0.25-mi) buffer as the basic unit for active lek protection is not clear, as there is no support in published literature for this distance affording any measure of protection.... this distance appears to be an artifact from the 1960s attempt to initiate planning guidelines for sagebrush management and is not scientifically based (Roberts 1991).

In light of the overwhelming scientific evidence that the application of 0.25-mile NSO buffers and 2-mile timing stipulations are grossly inadequate to conserve sage grouse and their habitats in GHMA (or indeed elsewhere), BLM cannot rely on such current, scientifically unsound and invalid stipulations for the issuance of oil and gas leases in GHMA.

Many parcels in this lease sale are located within 5.3 miles of one or more active sage grouse leks. The lands within 5.3 miles of active leks are typically used for nesting, a sensitive life history period when sage grouse are sensitive to disturbance from oil and gas drilling and production activities. The current standard sage grouse stipulations that apply outside Core Areas are biologically inadequate, and their effectiveness has not been established by BLM. Indeed, scientific studies demonstrate that these mitigation measures fail to maintain sage grouse populations in the face of full-field development, and significant impacts in terms of displacement of sage grouse from otherwise suitable habitat as well as significant population declines have been documented. BLM should not issue these sage grouse parcels unless a rigorous set of stipulations, far stronger than those provided in the EA (such as NSO stipulations), are applied to the parcels. This should include at minimum 4-mile No Surface Occupancy stipulations around active leks as recommended by the BLM National Technical Team. If these stipulations are implemented together with even stronger measures for Core and Connectivity Areas, the BLM could make a credible case that impacts from leasing would not result in significant impacts.

Outside Core Areas, current sage grouse lease stipulations provide an NSO stipulation of ¼ mile around active sage grouse leks. This is a ridiculously inadequate amount of protection for the lekking grouse during the breeding period, nevermind for hens nesting on lands surrounding the lek. Studies have shown that the majority of hens nest within 3 miles of a lek, and that a 5.3-mile buffer would encompass almost all nesting birds in some cases. For Core Areas, the most scientifically supportable metric for NSO buffers would be 2 miles from the lek to protect breeding birds (after Holloran 2005, finding impacts from post-drilling production extend 1.9 miles from the wellsite)<sup>4</sup> and 5.3 miles to protect nesting birds, with the understanding that the impacts of drilling and production activity would extend into the NSO buffer area from wells arrayed along its edge.

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<sup>12</sup> 75 Fed. Reg. 13978, March 23, 2010.

Because leks sites are used traditionally year after year and represent selection for optimal breeding and nesting habitat, it is crucially important to protect the area surrounding lek sites from impacts. In his University of Wyoming dissertation on the impacts of oil and gas development on sage grouse, Matthew Holloran stated, “current development stipulations are inadequate to maintain greater sage grouse breeding populations in natural gas fields.”<sup>13</sup> (Notably, these exact stipulations are being applied by BLM in this lease sale for non-Core Area sage grouse habitat parcels). The area within 2 or 3 miles of a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. Dr. Clait Braun, the world’s most eminent expert on sage grouse, has recommended NSO buffers of 3 miles from lek sites, based on the uncertainty of protecting sage grouse nesting habitat with smaller buffers.<sup>14</sup> Thus, the prohibition of surface disturbance within 3 miles of a sage grouse lek is the absolute minimum starting point for sage grouse conservation.

Other important findings on the negative impacts of oil and gas operations on sage grouse and their implications for the species are contained in three studies recently accepted for publication.<sup>15</sup> Sage grouse mitigation measures have been demonstrated to be ineffective at maintaining this species at pre-development levels in the face of oil and gas development by Holloran (2005) and Naugle et al. (2006). This study found an 85% decline of sage grouse populations in the Powder River Basin of northeastern Wyoming since the onset of coalbed methane development there.

BLM states, “With application of SOPs, applied mitigation, required design features and COAs identified for Greater Sage-grouse under the proposed action and RMP amendments/revision, impacts caused by surface-disturbing and disruptive activities would be minimized.” High Plains EA at 55. There is insufficient information based on the agency’s NEPA analysis, considering the best available science, to support this statement.

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<sup>13</sup> M. Holloran. Dec. 2005. Greater Sage-Grouse Population Response to Natural Gas Field Development in Western Wyoming, at 57. This study is attached to the BCA June 2008 Lease Protest as Exhibit 35.

<sup>14</sup> C. Braun. May 2006. A Blueprint for Sage-grouse Conservation and Recovery. Grouse, Inc. This study is available online at <http://www.voiceforthewild.org/SageGrouseStudies/Braunblueprint2006.pdf>.

<sup>15</sup> Doherty, K.E., D.E. Naugle, B.L. Walker, and J.M. Graham. 2008. Greater sage-grouse winter habitat selection and energy development. *Journal of Wildlife Management* 72:187-195. Attached to the BCA June 2008 Lease Protest as Exhibit 37. Walker, B.L., D.E. Naugle, and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71:2644-2654. Attached to the BCA June 2008 Lease Protest as Exhibit 38. Walker, B.L., D.E. Naugle, K.E. Doherty, and T.E. Cornish. 2007. West Nile virus and greater sage-grouse: estimating infection rate in a wild bird population. *Avian Diseases* 51:In Press. Attached to the BCA June 2008 Lease Protest as Exhibit 39.

BLM has repeatedly failed to provide any analysis, through field experiments or literature reviews, examining the effectiveness of the standard quarter-mile buffers where disturbance would be “avoided.” There is substantial new information in recent studies to warrant supplemental NEPA analysis of the impacts of oil and gas development to sage grouse. It is incumbent upon BLM to consider the most recent scientific evidence regarding the status of this species and to develop mitigation measures which will ensure the species is not moved toward listing under the Endangered Species Act. It is clear from the scientific evidence that the current protections are inadequate and are contributing to the further decline of the bird’s populations.

State agency biologists have reached a consensus that the Timing Limitation Stipulations proposed for sage grouse in this lease sale are ineffective in the face of standard oil and gas development practices. These stipulations have likewise been condemned as inadequate by the U.S. Fish and Wildlife Service and renowned sage grouse expert Dr. Clait Braun. The BLM itself has been forced to admit that “New information from monitoring and studies indicate that current RMP decisions/actions may move the species toward listing...conflicts with current BLM decision to implement BLM’s sensitive species policy” and “New information and science indicate 1985 RMP Decisions, as amended, may not be adequate for sage grouse.”<sup>16</sup> Continued application of stipulations known to be ineffective in the face of strong evidence that they do not work, and continuing to drive the sage grouse toward ESA listing in violation of BLM Sensitive Species policy, is arbitrary and capricious and an abuse of discretion under the Administrative Procedures Act.

The restrictions contained in the recent Wyoming Greater Sage-Grouse Resource Management Plan Amendments and revisions come nowhere close to offering sufficient on-the-ground protection to sage grouse leks. Within Core Areas, the IM allows surface disturbing activity and surface occupancy just six tenths (0.6) of a mile from occupied sage-grouse leks, a far cry from the science-based 4-mile buffer recommended by the BLM’s own National Technical Team, and inconsistent with the findings of Manier et al. (2014), who described the range of appropriate lek buffers as 3.1 to 5 miles.<sup>17</sup> By acreage, a 0.6-mile buffer encompasses less than 4% of the nesting habitat contained within the 4-mile buffer recommended by agency experts, and therefore does essentially nothing to protect sensitive nesting habitats. Even less protective, restrictions outside Core or Connectivity Areas allow surface disturbing activities and surface occupancy as close as one quarter (0.25) of a mile from leks.<sup>18</sup> BLM has too great an abundance of data to the contrary to continue with scientifically unsound stipulations. BLM should apply the recommendations of the National Technical Team instead, and in the meantime

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<sup>16</sup> Sage grouse plan amendment land user information meeting PowerPoint, available online at [http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/bfodocs/sagegrouse.Par.94571.File.dat/May28\\_InfoMtg.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/bfodocs/sagegrouse.Par.94571.File.dat/May28_InfoMtg.pdf). Site last visited 7/16/2008.

<sup>17</sup> Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H. 2014. Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014–1239, 14 p., <http://dx.doi.org/10.3133/ofr20141239>.

<sup>18</sup> *Id.*

defer leasing until these recommendations can be formally adopted through the plan amendment/revision process.

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The vague stipulations included in BLM's Notice of Competitive Oil and Gas Lease Sale for particular parcels do little to clarify to the interested public or potential lessees what restrictions might actually apply to protect sage grouse populations. For example, for some parcels, BLM imposes a Timing Limitation Stipulation and a Controlled Surface Use Stipulation. Such acceptable plans for mitigation of anticipated impacts must be prepared prior to issuing the lease in order to give the public full opportunity to comment, and to abide by the Department of Interior's stated new policy to complete site-specific environmental review at the leasing stage, not the APD stage. Without site-specific review and opportunity for comment, neither the public nor potential lessees can clearly gauge how restrictive or lax "acceptable plans for mitigation" might be, and whether they comply with federal laws, regulations, and agency guidelines and policies. Thus, absent such review, the leases should not issue at all.

BLM has the scientific information needed to recognize that any use of these parcels will result in further population declines, propelling the sage grouse ahead of other "priorities" on the ESA "candidate list." Again, it is in all interested parties favor (conservation groups, potential lessees, BLM and other federal agencies) for BLM to determine specific "modifications" prior to issuing leases, such as NSO restrictions. If the BLM fails to do so through site-specific environmental review before the APD stage, the agency will violate the "jeopardy" prohibition in the Endangered Species Act and will not adhere to the directive of Secretary Salazar and the Department of Interior's announced leasing reforms.

We recommend against the sale of any lease parcels which contain sage grouse leks, nesting habitat, breeding habitat, wintering habitat and brood-rearing habitat. We request that these parcels be withdrawn from the lease sale. Failing withdrawal of the parcels, parcel-by-parcel NEPA analysis should occur (we have seen no evidence of this in the February 2017 Leasing EAs), and NSO stipulations must be placed on all lease parcels with sage grouse leks. In addition, three-mile buffers must be placed around all leks. It is critical that these stipulations be attached at the leasing stage, when BLM has the maximum authority to restrict activities on these crucial habitats for the protection of the species, and that no exceptions to the stipulations be granted. BLM's failure to do so will permit oil and gas development activities which will contribute to declining sage grouse populations and ultimately listing by the U.S. Fish and Wildlife Service as a threatened or endangered species, in violation of BLM's duty to take all actions necessary to prevent listing under its Sensitive Species Manual.

In the past, BLM has noted that the deferral of sage grouse PHMA (sometimes termed "Core Area" in Wyoming) parcels is largely responsible for overall reductions in PHMA acreage leased and therefore reduced threats to sage grouse:

The relatively subdued pace of new leasing in Core Areas is the direct result of the application of the BLM's sage-grouse leasing screen, whereby many parcels in recent sales have been deferred from sale until the sage-grouse RMP amendments and ongoing plan revisions are completed.

Wind River – Bighorn Basin [WY] August 2015 Lease EA at 4-44, and see graph on same page. The cessation of deferral for PHMAs in this lease auction will reverse this progress.

Since the greater sage grouse is a BLM Sensitive Species and remains an open possibility for listing under the Endangered Species Act in 2020, the leasing of these lands under biologically inadequate stipulations is a violation of BLM Sensitive Species Policy, and constitutes undue degradation of sage grouse habitats and populations. Because alternate stipulations that are indeed biologically sufficient are available, and their implementation would avert significant impacts to sage grouse populations, the impacts incurred as a result of developing the leases in question are completely unnecessary.

The No Surface Occupancy stipulation of 0.6 miles surrounding lek locations is insufficient to prevent significant impacts to lek populations based on the best available science. No scientific study has ever recommended a 0.6-mile lek buffer. In Wyoming, Holloran (2005) examined thresholds of distance from oil and gas wells and access roads (accessing 5 or more wellpads), and found that significant impacts to sage grouse lek populations occurred when a well or access road was sited within 1.9 miles of a sage grouse lek, irrespective of whether the intrusion was visible from the lek itself.<sup>19</sup> Manier et al. (2014) reviewed the available scientific literature and determined that buffers in the range of 3.1 to 5 miles from the lek were appropriate based on the best available science.<sup>20</sup> A 0.6-mile NSO buffer does not fall within this range. The agency's own experts conducted an earlier review of the best available science (National Technical Team 2011) and recommended no future leasing in sage grouse Priority Habitats, and applying a 4-mile No Surface Occupancy buffer around leks for previously existing leases.

The programmatic RMP allows a 5% level of surface disturbance within sage grouse Core Areas, a level of surface disturbance that is incompatible with maintaining sage grouse populations and preventing population declines caused by excessive habitat destruction and fragmentation. No scientific study supports this level of surface disturbance. The National Technical Team (2011) recommended a 3% disturbance cap, to be applied on a per-square-mile-section basis. Knick et al. (2013) found that virtually all active leks were surrounded by lands with less than 3% surface disturbance.<sup>21</sup> No scientific study supports the 5% threshold.

The recently adopted Greater Sage-Grouse RMP Amendments and Revisions RMP also prescribe the use of a Disturbance Density Calculation Tool (DDCT) or equivalent method (often

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<sup>19</sup> M. Holloran. Dec. 2005. Greater Sage-Grouse Population Response to Natural Gas Field Development in Western Wyoming, at 57.

<sup>20</sup> Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H. 2014. Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014–1239, 14 p., <http://dx.doi.org/10.3133/ofr20141239>.

<sup>21</sup> Knick, S.T., S.E. Hanser, and K.L. Preston. 2013. Modeling ecological minimum requirements for distribution of greater sage-grouse leks – Implications for population connectivity across their western range, USA. *Ecology and Evolution* 3: 1539-1551.

called “project analysis area”) to arrive at the density of wellsites as well as the overall disturbance percentage. Because the DDCT area is always much larger than the project area when sage grouse leks are present within 4 miles of the project area boundary, this method always underestimates the density of disturbances in cases where sage grouse breeding habitat is potentially affected by development. This allows a density of development inside the project area that far exceeds scientifically determined thresholds at which significant sage grouse population declines occur. No scientific study has ever tested what would be the thresholds of disturbance causing significant impacts to sage grouse populations using a DDCT. The National Technical Team (2011), by contrast, recommends that well and disturbance densities be calculated on a square-mile-section basis, not using a larger area.

Current stipulations to protect sage grouse from oil and gas-related noise are inadequate. Noise can mask the breeding vocalizations of sage grouse (Blickley and Patricelli 2012),<sup>22</sup> displaces grouse from leks (Blickley et al. 2012a),<sup>23</sup> and causes stress to the birds that remain (Blickley et al. 2012b).<sup>24</sup> According to Blickley et al. (2010),

The cumulative impacts of noise on individuals can manifest at the population level in various ways that can potentially range from population declines up to regional extinction. If species already threatened or endangered due to habitat loss avoid noisy areas and abandon otherwise suitable habitat because of a particular sensitivity to noise, their status becomes even more critical.

Noise must be limited to a maximum of 10 dBA above the ambient natural noise level after the recommendations of Patricelli et al. (2012); the ambient noise level in central Wyoming was found to be 22 dBA (Patricelli et al. 2012) and in western Wyoming it was found to be 15 dBA (Ambrose and Florian 2014, Ambrose 2015; Ambrose et al. 2015).<sup>25</sup> Attachment 1 provides a

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<sup>22</sup> Blickley, J.L., and G.L. Patricelli. 2012. Potential acoustic masking of greater sage-grouse (*Centrocercus urophasianus*) display components by chronic industrial noise. *Ornith. Monogr.* 74: 23-35.

<sup>23</sup> Blickley, J.L., D. Blackwood, and G.L. Patricelli. 2012a. Experimental Evidence for the Effects of Chronic Anthropogenic Noise on Abundance of Greater Sage-Grouse at Leks. *Conserv. Biol.* 26:461-471.

<sup>24</sup> Blickley J.L., Word K.R., Krakauer A.H., Phillips J.L., Sells S.N., et al. 2012b. Experimental Chronic Noise Is Related to Elevated Fecal Corticosteroid Metabolites in Lekking Male Greater Sage-Grouse (*Centrocercus urophasianus*). *PLoS ONE* 7(11): e50462. doi:10.1371/journal.pone.0050462.

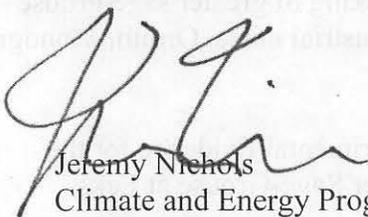
<sup>25</sup> Ambrose, S. 2015. Review of Greens Hollow Sound Study by Tetra Tech (2008), and Summary of Sound Level Measurements at Wildcat Knolls Lek, March 29-31, 2015. Unpublished report, 11 pp.; Ambrose, S., and C. Florian. 2014. Sound levels at greater sage-grouse leks, Pinedale Anticline Project Area, Wyoming, April 2013. Unpublished report prepared for the Wyoming Game and Fish Department, 133 pp. Available online at <http://www.wy.blm.gov/jio-papo/papo/wildlife/reports/sage-grouse/2013GSGacoustic-rpt.pdf>;

review of the relevant literature on noise including analysis that indicates sage grouse lek population declines once noise levels exceed the 25 dBA level. With this in mind, ambient noise levels should be defined as 15 dBA and allowable cumulative noise should be limited to 25 dBA in occupied breeding, nesting, brood-rearing, and wintering habitats, which equates to 10 dBA above the scientifically-derived ambient threshold.

In addition, it is critically important for BLM to identify and protect winter concentration areas. *See* Attachment 2. Oil and gas development has known impacts on sage grouse (Doherty et al. 2008).<sup>26</sup> Thus far, the location of these habitats remains largely undetermined. These lands should be closed to fluid mineral leasing, with Conditions of Approval applying NSO stipulations inside and within 2 miles of these areas. The proposal to simply apply timing stipulations to these areas is insufficient because it allows construction of wellpads and roads known to be deleterious to wintering sage grouse inside these key habitats as long as construction/drilling occurs outside the winter season, and further allows production-related activities throughout winter. Thus, the sage grouse may return to their winter habitats to find an industrialized, fragmented habitat that no longer has any habitat function due to the birds' avoidance of such areas. A recent study (Smith et al. 2016) demonstrates that Wyoming Core Areas do not provide sufficient coverage to protect important winter habitats for sage grouse. *See* Attachment 3.

We remain concerned that development activities on the sage grouse parcels noted above will result in significant impacts to sage grouse occupying these parcels and/or the habitats nearby, and the BLM's programmatic NEPA underlying this lease sale does not adequately address these significant impacts in light of new information. Therefore, the requisite NEPA analysis to support the leasing of the sage grouse parcels listed above in the absence of an Environmental Impact Statement does not exist.

Sincerely,



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Ambrose, S., C. Florian, and J. MacDonald. 2014. Sound levels at greater sage-grouse leks in the Pinedale Anticline Project Area, WY, April 2013-2014. Unpublished report prepared for the Wyoming Game and Fish Department, 79 pp.

<sup>26</sup> Doherty, K.E., D.E. Naugle, B.L. Walker, and J.M. Graham. 2008. Greater sage-grouse winter habitat selection and energy development. *J. Wildl. Manage.* 72:187-195.