



July 6, 2017

Via Hand Delivery

State Director
U.S. Bureau of Land Management
New Mexico State Office
301 Dinosaur Trail
Santa Fe, NM 87509

Re: Protest of September 7, 2017 Competitive Oil and Gas Lease Sale

Dear State Director:

Pursuant to 43 C.F.R. § 3120.1-3, WildEarth Guardians hereby protests the Bureau of Land Management's ("BLM's") proposal to offer 62 publicly-owned oil and gas lease parcels covering 15,731.91 acres of land for competitive sale on September 7, 2017. The parcels are located in Carlsbad and Roswell field offices in the state of New Mexico. The lease parcels include, as identified by the BLM's in its September 7, 2017 Competitive Oil and Gas Lease Sale Notice, the following:¹

Lease Serial Number	Acres	Field Office	County
NM-201707-001	320.00	Carlsbad	Eddy
NM-201707-002	40.00	Carlsbad	Eddy
NM-201707-003	639.28	Carlsbad	Eddy
NM-201707-004	640.00	Carlsbad	Eddy
NM-201707-005	600.00	Carlsbad	Eddy
NM-201707-006	61.53	Carlsbad	Eddy
NM-201707-007	320.00	Carlsbad	Eddy
NM-201707-008	80.00	Carlsbad	Eddy
NM-201707-009	640.00	Carlsbad	Eddy
NM-201707-010	38.90	Roswell	Chaves
NM-201707-011	116.77	Roswell	Chaves
NM-201707-012	160.00	Roswell	Chaves
NM-201707-013	320.00	Roswell	Chaves

¹ The list of lease parcels is available on the BLM's website at https://eplanning.blm.gov/epl-front-office/projects/nepa/69506/108724/133043/Lease_Sale_Notice_508_Compliant_1.pdf.

NM-201707-014	320.00	Roswell	Chaves
NM-201707-015	640.00	Roswell	Chaves
NM-201707-016	37.34	Roswell	Quay
NM-201707-017	640.32	Roswell	Chaves
NM-201707-018	520.00	Roswell	Chaves
NM-201707-019	640.00	Roswell	Chaves
NM-201707-020	440.00	Roswell	Chaves
NM-201707-021	160.00	Carlsbad	Eddy
NM-201707-022	80.00	Carlsbad	Eddy
NM-201707-023	80.00	Roswell	Chaves
NM-201707-024	40.00	Carlsbad	Eddy
NM-201707-025	40.00	Carlsbad	Eddy
NM-201707-026	80.00	Roswell	Chaves
NM-201707-027	120.00	Roswell	Chaves
NM-201707-028	40.00	Roswell	Chaves
NM-201707-029	320.05	Roswell	Chaves
NM-201707-030	40.00	Carlsbad	Eddy
NM-201707-031	160.00	Carlsbad	Eddy
NM-201707-032	640.00	Carlsbad	Eddy
NM-201707-033	160.00	Roswell	Curry
NM-201707-034	80.00	Carlsbad	Lea
NM-201707-035	160.00	Carlsbad	Lea
NM-201707-036	332.86	Carlsbad	Lea
NM-201707-037	320.00	Roswell	Roosevelt
NM-201707-038	320.00	Roswell	Roosevelt
NM-201707-039	40.00	Roswell	Roosevelt
NM-201707-040	80.00	Carlsbad	Lea
NM-201707-041	40.00	Carlsbad	Lea
NM-201707-042	80.00	Carlsbad	Lea
NM-201707-043	320.00	Carlsbad	Lea
NM-201707-044	80.26	Carlsbad	Lea
NM-201707-045	40.00	Carlsbad	Lea
NM-201707-046	160.00	Carlsbad	Lea
NM-201707-047	600.28	Carlsbad	Lea
NM-201707-048	440.00	Carlsbad	Lea
NM-201707-049	360.00	Carlsbad	Lea
NM-201707-050	560.47	Carlsbad	Lea
NM-201707-051	320.00	Carlsbad	Lea
NM-201707-052	40.00	Carlsbad	Lea

NM-201707-053	40.00	Carlsbad	Lea
NM-201707-054	200.00	Carlsbad	Lea
NM-201707-055	51.90	Carlsbad	Lea
NM-201707-056	160.00	Carlsbad	Lea
NM-201707-057	240.00	Carlsbad	Lea
NM-201707-058	200.00	Carlsbad	Lea
NM-201707-059	320.00	Carlsbad	Lea
NM-201707-060	320.00	Carlsbad	Lea
NM-201707-061	376.15	Carlsbad	Lea
NM-201707-062	275.80	Carlsbad	Lea

In support of its proposed leasing, the agency prepared an Environmental Assessment (“EA”), DOI-BLM-NM-P020-2017-0001-EA.

As will be explained, the BLM’s proposal to lease falls short of ensuring compliance with applicable environmental protection laws and is not based on sufficient analysis and assessment of key environmental impacts under the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4331, *et seq.* The agency’s current EA and any future FONSI are therefore deficient. For the reasons below, we request the BLM refrain from offering the 62² proposed lease parcels for sale and issuance.

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 has extensively commented on BLM’s proposed oil and gas leasing in New Mexico, including filing comments and an protest of the July 2016 lease sale (actually held in September 2016), which proposed leasing in exactly the same field offices and which posed virtually identical environmental impacts. Guardians raised similar concerns over the agency’s failure to adequately address climate impacts in our comments and protest over the July 2016 lease sale.³ More broadly, our organization has submitted extensive comments, protests,

² The lease sale notice lists 62 parcels but the EA lists 60. The total acreage is the same for both the notice and EA.

³ Guardians protest is available on the BLM’s website here, https://www.nm.blm.gov/oilGas/leasing/leaseSales/2016/july2016/WildEarth_Guardians.pdf, as well as the BLM’s response, https://www.nm.blm.gov/oilGas/leasing/leaseSales/2016/july2016/July%202016%20Lease%20Sale%20WEG%20Protest%20Response_SOL%20Review_3-31-17%20mew_rklein_rh_final%20for%20signature.pdf.

and other correspondence to the BLM conveying our concerns over the impacts of oil and gas leasing to the climate, air quality, wildlife, and other important western values. The BLM is very aware of our concerns.

BLM regulations at 43 C.F.R. § 3120.1-3 set forth no criteria governing who may file protests or under what circumstances. The BLM's June 7, 2017 Notice of Competitive Lease Sale similarly provides no criteria governing who may file protests, imposing only limited requirements on the content of protests and the deadline for filing. The Notice simply provides that a protest must be timely filed, include a statement of reasons, be filed in hardcopy form or by fax, must be signed, must "state the interest of the protesting party," must include the name and the address of the protesting party, and must reference the lease parcel number identified in the sale notice.⁴ The BLM consistently and routinely reviews protests filed by interested parties.⁵

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

WildEarth Guardians
2590 Walnut St.
Denver, CO 80205

STATEMENT OF REASONS

WildEarth Guardians protests the BLM's September 7, 2017 oil and gas lease sale over the agency's failure to adequately analyze and assess the climate impacts of the reasonably foreseeable oil and gas development that will result in accordance with 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).

⁴ Notice of Competitive Lease Sale at ix.

⁵ For example, the Wyoming State Office of the BLM reviewed protests filed by the City of Casper and Wyoming Land Acquisition Partners over the inclusion of parcels in the agency's February 2016 Notice of Competitive Lease Sale, even though the BLM acknowledged, "the City of Casper and the WLAP did not submit written comments to the BLM on the EA." *See* BLM, Response to Protests of February 7, 2017 Competitive Oil and Gas Lease Sale (Feb. 6, 2017) at 3, available online at <https://eplanning.blm.gov/epl-front-office/projects/nepa/65707/96629/116695/0217ProtestDecision.pdf>. Although the BLM ultimately dismissed these protests as moot, the agency did not dismiss the protests for a failure to provide written comments or otherwise for a failure to meet criteria not explicitly set forth at 43 C.F.R. § 3120.3-1 or the Notice of Competitive Lease Sale.

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 environmental assessment (“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 Finding of No Significant Impact (“FONSI”) and implement its action. *See* 40 C.F.R. § 1508.13; *see also* 43 C.F.R. § 46.325(2).

Within an EA or EIS, the scope of the analysis must include “[c]umulative actions” and “[s]imilar actions.” 40 C.F.R. §§ 1508.25(a)(2) and (3). Cumulative actions include action that, “when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.” 40 C.F.R. § 1508.25(a)(2). Similar actions include actions that, “when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together.” 40 C.F.R. § 1508.25(a)(3). Key indicators of similarities between actions include “common timing or geography.” *Id.*

Here, the BLM falls 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. In the EA, however, the BLM fails to analyze the reasonably foreseeable greenhouse gas emissions both from the proposed leasing and all stages of development and from cumulative and similar actions in the surrounding area. The agency further fails to assess the significance of any emissions, particularly in terms of carbon costs.

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

Although the BLM did take some steps to analyze and assess some of the reasonably foreseeable greenhouse gas emissions in the EA, the BLM’s estimates of 94 metric tons of carbon dioxide equivalent (“CO₂e”) per well and 37,590 metric tons total emissions annually from a maximum of 273 wells, completely fail to account for emissions from other reasonably foreseeable activities, including “truck traffic, pumping jack engines, compressor engines, and drill rig engines” (*see* EA at 48). The agency also fails to account for downstream combustion of oil and gas, resulting in wholly inadequate disclosure under NEPA. The failure of the agency to come up with a remotely accurate estimate of emissions clearly fails to demonstrate that there will be no significant impacts.

The failure to come up with accurate and comprehensive estimates is not for lack of methodologies. The BLM has been able to estimate per well greenhouse gases based on a consideration of emissions from pump jacks, drilling rigs, truck traffic, processing, compressor engines, and other sources directly related to the construction and production of wells. In a 2013 report prepared for the BLM by Kleinfelder, the agency was able to estimate per well emissions for many major oil and gas producing regions in the western U.S., including the San Juan Basin of New Mexico, the Green River Basin of Wyoming, and others. *See Exhibit 1, 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).* This report estimated total per well greenhouse gas emission to range from a low of 791 tons (717.6 metric tons) per year for San Juan Basin coalbed methane wells, to a high of 3,682 tons (3,340.3 metric tons) for oil wells in North Dakota. *See Table below.* In either case, the estimates are far greater than the 94 metric tons per well per year proffered in the EA.

**Per Well Greenhouse Gas Emission Estimates by Major Western U.S.
Oil and Gas Producing Region. *See Exhibit 1 at 2.***

Region (Type)	Total CO₂	Total CH₄	Total CO₂e
San Juan, NM (gas)	651.9	6.1	791
Denver, CO (oil)	1,049.0	1.8	1,099
Upper Green River, WY (gas)	2,882.1	14.1	3,194
Willison, ND (oil)	3,156.4	16.6	3,682
Uinta/Piceance (gas)	2,552.1	12.2	2,825

Furthermore, other BLM Field Offices have been able to come up with more accurate estimates of greenhouse gas emissions associated with leasing. 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 2, 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 URS Group Inc. 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 ENVIRON, “Colorado Air Resource 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.* As part of the CARMMS report, the BLM estimated annual per well emissions, including greenhouse gas emissions, as follows:

Phase	PM ₁₀	PM _{2.5}	VOC	CO	NO _x	SO ₂	CO ₂	CH ₄	N ₂ 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

It is notable that, based on this estimate, total CO₂ emissions associated with construction and production of conventional (rather than “CBM” or coalbed methane) wells, could be as much as 360 tons per year. Taking into account methane, which the EPA assumes has 25 times the heat trapping capability, or global warming potential, of CO₂, total greenhouse gas emissions are estimated to be 788.5 tons per year.

These other greenhouse gas estimates clearly underscore that the BLM’s estimate of 94 tons of emissions per well per year is not just simplistic, but wildly inaccurate and misleading. What’s more, these other estimates indicate the BLM was more than capable of preparing an accurate estimate of per well emissions. The failure to do so renders the EA inadequate and undermines the validity of a future FONSI.

With regards to greenhouse gases produced from the ultimate consumption of oil and gas that will be produced from the proposed leases (or downstream emissions), these emissions are similarly not speculative, nor are they impossible to analyze. A recent report prepared by EcoShift Consulting actually quantified the likely greenhouse gas emissions that could result from the production of federal oil and natural gas. *See* Exhibit 3, EcoShift Consulting, “The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels,” report prepared for Center for Biological Diversity and Friends of the Earth (Aug. 2015), available at <http://www.ecoshiftconsulting.com/wp-content/uploads/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf>. This report estimated emissions resulting from refining, processing, transportation, and distribution of oil and gas, even quantifying potential emissions based on the likely end-use of oil and natural gas. There are also estimates by the EPA as to how much CO₂e is produced per barrel of oil consumed and per therm of natural gas consumed. *See* EPA, “Calculations and References,” website available at <http://www.epa.gov/cleanenergy/energy-resources/refs.html>. According to the EPA, 0.43 metric tons of CO₂ is released per barrel of oil consumed and 0.005302 metric tons of CO₂ is released per therm of natural gas consumed.⁶

Further, the BLM itself has calculated greenhouse gas emissions likely to result from oil and gas combustion as part of other oil and gas lease sales. For instance, in a recent EA for oil and gas leasing in the Vernal Field Office of Utah, the BLM presented the following analysis:

⁶ According to the U.S. Energy Information Administration (“EIA”), one Mcf of natural gas generally equals 10.28 therms. *See* EIA, “Frequently Asked Questions,” website available at <http://www.eia.gov/tools/faqs/faq.cfm?id=45&t=8>.

Indirect Downstream GHG emissions are estimated based on an average cumulative production rate of 24,120 barrels of oil, and 421,302 MCF gas over the life of a well, based on the production history for the fields and regions in which the parcels are located. [Utah DOGM 2016] Indirect GHG emissions are also only calculated for carbon dioxide based on combustion of the product. Using the RFD of in Appendix D, and an EPA emissions factor of 0.43 Metric tons of CO₂ per Barrel, [EIA 2006], and 0.054717 MT of CO₂ per MCF of gas [EPA 2017b] indirect GHG emissions can be estimated at 4,512,231 metric tons per well. For total assumed emissions, multiply these numbers by the 135 projected wells. Actual GHG emissions may range from zero (assuming no lease parcels sold or developed) to an indeterminate upper range based on realized production rates, control technology, and physical characteristics of any oil produced.

Exhibit 4, BLM, “Environmental Assessment, December 2017 Competitive Oil and Gas Lease Sale,” EA No. DOI-BLM-UT-GO10-2017-0028-EA (June 2017), available online at https://eplanning.blm.gov/epl-front-office/projects/nepa/80165/110705/135545/Preliminary_EA_Final_for_Posting_508.pdf.

Although the BLM may claim that it is speculative to estimate the amount of oil and gas likely to be produced from the proposed leases, this assertion is belied by the fact that the leases are in areas that are already extensively leased and already producing oil and gas. Furthermore, as part of its Resource Management Plan revision process, the BLM developed a new Reasonably Foreseeable Development Scenario for the Pecos District Office of New Mexico, which estimates likely oil and gas reserves to be developed in Chavez, Eddy, and Lea Counties. *See* Engler, T.W., R. Balch, and M. Cather, “Reasonably Foreseeable Development Scenario for the B.L.M. New Mexico Pecos District,” Final Report Submitted to BLM (2015), available online at http://www.blm.gov/style/medialib/blm/nm/field_offices/carlsbad/rmp/documents/Par.79871.Fil.e.dat/Final_Report-BLM-NMT-RFD.pdf. At the least, this information should allow the BLM to prepare a “simple” analysis. As it stands, no analysis was completed.

Furthermore, the agency fails to account for greenhouse gas emissions from cumulative and similar actions in its EA. As NEPA requires, an agency must analyze the impacts of “similar” and “cumulative” actions in the same NEPA document in order to adequately disclose impacts in an EIS or provide sufficient justification for a FONSI in an EA. *See* 40 C.F.R. §§ 1508.25(a)(2) and (3). Here, the BLM fails to take into account the greenhouse gas emissions resulting from other proposed oil and gas leasing in the New Mexico State Office (including New Mexico, Texas, Oklahoma, and Kansas), as well as related oil and gas development in surrounding states, and fails to analyze the impacts of these actions in terms of their direct, indirect, and cumulative greenhouse gas emissions.

Leasing occurring in other District Offices as well as in other, western states represents a similar action that must be accounted for in the EA in order for the agency to justify a FONSI. At the same time and in this same region, the BLM has sold, is selling, and will be selling thousands of acres of oil and gas leases, including, but not limited to:

- Colorado: On June 8, 2017, the BLM offered 106 oil and gas lease parcels covering 100,815.97 acres in western Colorado. See https://eplanning.blm.gov/epl-front-office/projects/nepa/70241/99316/120339/Sale_Notice_June2017.pdf. The agency is now proposing to sell 10 parcels covering 1,227.468 acres on September 7, 2017. See https://eplanning.blm.gov/epl-frontoffice/projects/nepa/70242/109225/133797/Sale_Notice_Sept2017.pdf. In December of 2017, the BLM is also contemplating the sale of 28 parcels covering 27,283.79 acres in western Colorado. See https://eplanning.blm.gov/epl-front-office/projects/nepa/72396/96540/116594/GJFO&CRVFO_Initial_Parcel_List_Scoping_Dec2017.pdf.
- New Mexico: The BLM held lease sales on January 25, 2017 where it sold 4 parcels, https://eplanning.blm.gov/epl-front-office/projects/nepa/68428/96009/116065/Jan2017_SaleResults.pdf, and on June 8, 2017 where it sold 8 parcels, https://eplanning.blm.gov/epl-front-office/projects/nepa/68426/109289/133858/June_8_2017_Sale_Results.pdf.
- Utah: In 2017, the BLM held lease sales on March 23 and June 13, 2017 selling a total of 12 parcels. The BLM also has a September 12 lease sale scheduled. See <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/regional-lease-sales/utah>.

Even in other western states like Montana and Wyoming, the BLM is proposing extensive oil and gas leasing. See <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/regional-lease-sales/montana-dakotas> and <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage¤tPageId=94042>.

The need to take into account “similar” and “cumulative” actions is underscored by the fact that the BLM acknowledges that the proper geographic area for analyzing and assessing the impacts of greenhouse gas emissions is on a national scale. The EA in fact assesses greenhouse gas emissions from the proposed leasing in the context of both statewide and national greenhouse gas emissions. See EA at 48-49. Although this assessment was apparently prepared to try to mislead the public into believing that emissions from the proposed leasing are not significant, it actually emphasizes the need for the BLM to not simply account for emissions from the proposed leasing, but likely for all greenhouse gas emissions associated with BLM-approved oil and gas leasing nationwide. Indeed, the BLM cannot claim that emissions are insignificant in the context of state or national emissions, but then fail to disclose the direct, indirect, and cumulative greenhouse gases that would result from all other “similar” and “cumulative” actions within a statewide or national scope. The failure to do so renders the EA inadequate and fails to provide support for a FONSI.

2. The BLM Fails to Analyze the Costs of Reasonably Foreseeable Carbon Emissions Using Well-Accepted, Valid, Credible, GAO-Endorsed, Interagency Methods for Assessing Carbon Costs.

Compounding the failure of the BLM to make any effort to estimate the greenhouse gas emissions that would result from reasonably foreseeable oil and gas development is the fact that the agency also failed to analyze and assess these emissions in the context of their costs to society. It is particularly disconcerting that the agency did not 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).” Exhibit 5, U.S. Environmental Protection Agency (“EPA”), “Fact Sheet: Social Cost of Carbon” (Nov. 2013) at 1, formerly available online at <https://www.epa.gov/climatechange/social-cost-carbon>. The protocol was developed by a working group consisting of several federal agencies.

In 2009, an Interagency Working Group was formed to develop the protocol and issued final estimates of carbon costs in 2010. *See* Exhibit 6, 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). These estimates were then revised in 2013 by the Interagency Working Group, which at the time consisted of 13 agencies. *See* Exhibit 7, 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). This report and the social cost of carbon estimates were again revised in 2015. *See* Exhibit 8, 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). Again, this report and social cost of carbon estimates were revised in 2016. *See* Exhibit 9, Interagency Working Group on Social Cost of Carbon, “Technical Support Document: Technical Update of the Social Cost of Greenhouse Gases for Regulatory Impact Analysis Under Executive Order 12866” (Aug. 2016).

Most recently, as an addendum to previous Technical Support Documents regarding the social cost of carbon, the Department of the Interior joined numerous other agencies in preparing estimates of the social cost of methane and other greenhouse gases. *See* Exhibit 10, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, “Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide” (Aug. 2016).

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 \$10 to \$212 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 11, White House, “Estimating the Benefits from 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 12, 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>.

Table ES-1: Social Cost of CO₂, 2010 – 2050 (in 2007 dollars per metric ton of CO₂)

Year	5% Average	3% Average	2.5% Average	High Impact (95 th Pct at 3%)
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. See Exhibit 5.

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 13, 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 other recent Environmental Assessments for oil and gas leasing, the agency estimated “the annual SCC [social cost of carbon] associated with potential development on lease sale parcels.” Exhibit 14, BLM, “Environmental Assessment for October 21, 2014 Oil and Gas lease Sale,” DOI-BLM-MT-0010-2014-0011-EA (May 19, 2014) at 76, available online at [http://www.blm.gov/style/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/lease_sale/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/2014/oct_21_2014/july23posting.Par.25990.File.dat/MCFO%20EA%20October%202014%20Sale_Post%20with%20Sale%20(1).pdf). 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 CO₂e increase. *See* Exhibit 15, BLM, “Little Willow Creek Protective Oil and Gas Leasing,” EA No. DOI-BLM-ID-B010-2014-0036-EA (February 10, 2015) at 81, 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. 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 5. As explained:

The models used to develop [social cost of carbon] estimates, known as integrated assessments, 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 16, 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 CO₂ reductions,” and thus a useful measure to assess the costs of CO₂ increases. Exhibit 1.

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 17, Executive Office of the President of the United States, “The Cost of Delaying Action to Stem Climate Change” (July 2014). As the report states:

[D]elaying action to limit the effects of climate change is costly. Because CO₂ accumulates in the atmosphere, delaying action increases CO₂ concentrations. Thus, if a policy delay leads to higher ultimate CO₂ concentrations, that delay produces persistent economic damages that arise from higher temperatures and higher CO₂ concentrations. Alternatively, if a delayed policy still aims to hit a given climate target, such as limiting CO₂ 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. Courts have ordered agencies

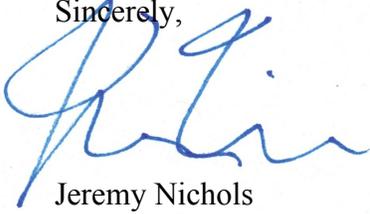
to assess the social cost of carbon pollution, even before a federal protocol for such analysis was adopted. In 2008, the U.S. Court of Appeals for the Ninth Circuit ordered the National Highway Traffic Safety Administration to include a monetized benefit for carbon emissions reductions in an Environmental 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.*

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 14, 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.

The social cost of carbon provides a useful, valid, and meaningful tool for assessing the climate consequences of the proposed leasing, and the BLM’s failure to utilize this method of assessing climate impacts would be wholly inappropriate under NEPA. To this end, the BLM’s failure to disclose carbon costs means the agency has failed to fully assess the significance of climate impacts and failed to support any FONSI. Accordingly, the agency cannot move forward with the proposed oil and gas leasing.

Sincerely,



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