IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 1:16-cv-01822-WYD

WILDERNESS WORKSHOP,

WESTERN COLORADO CONGRESS,

NATURAL RESOURCES DEFENSE COUNCIL, and

SIERRA CLUB,

Plaintiffs,

v.

UNITED STATES BUREAU OF LAND MANAGEMENT, an agency of the U. S. Department of the Interior,

RYAN ZINKE, in his official capacity as Secretary of the U.S. Department of the Interior,

MICHAEL NEDD, in his official capacity as Acting Director of the U.S. Bureau of Land Management,

RUTH WELCH, in her official capacity as Colorado State Director of the U.S. Bureau of Land Management, and

GLORIA TIBBETTS, in her official capacity as Acting Field Manager of the Colorado River Valley Field Office of the U.S. Bureau of Land Management,

Federal Defendants.

PLAINTIFFS' OPENING MERITS BRIEF

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GLOSSARY OF TERMS

APA	Administrative Procedure Act
APD	Application for Permit to Drill
ARTSD	Air Resources Technical Support Document
BLM	Bureau of Land Management
BLM Handbook	BLM's Land Use Planning Handbook (H-1601-1)
CARPP	Comprehensive Air Resources Protection Protocol
CEQ	Council on Environmental Quality
CDPHE	Colorado Department of Health and Environment
CH_4	Methane
Citizen Groups	Wilderness Workshop, Western Colorado Congress, Natural Resources Defense Council, and Sierra Club
CO_2	Carbon Dioxide
COGCC	Colorado Oil and Gas Conservation Division
CRVFO	Colorado River Valley Field Office
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FLPMA	Federal Land Policy and Management Act
GAO	Government Accountability Office
GHG	Greenhouse Gas
HAP	Hazardous Air Pollutants
HIA	Health Impact Assessment
IPCC	Intergovernmental Panel on Climate Change
NEPA	National Environmental Policy Act
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NOx	Nitrous Oxides
PAH	Polycyclic Aromatic Hydrocarbons
RFDS	Reasonably Foreseeable Development Scenario
RMP	Resource Management Plan
TSD	Technical Support Document
VOC	Volatile Organic Compound

INTRODUCTION

The Bureau of Land Management's ("BLM") Colorado River Valley Field Office ("CRVFO") is home to some of this nation's most spectacular public lands. The planning area is rich in wildlife, contains stunning wilderness, and includes the upper reaches of the Colorado River, fed by abundant snowpack from high alpine peaks. There is little wonder the area has some of the fastest growing communities in the country. It offers unparalleled access to public lands that support traditional grazing, as well as the full spectrum of other types of recreation, and that contribute substantially to a great quality of life for local residents. The area's public lands draw people from far away, too, helping to sustain a vibrant tourism based economy.

Public lands in the CRVFO also include an abundance of oil and gas, leading to conflicts in how competing resources are managed. Because oil and gas development has intensive impacts, it is the dominant use where it occurs. Oil and gas development fragments the landscape with roads, pipelines, drill pads, and wastewater pits. These effects are accompanied by lasting impacts on public health, communities, businesses, wildlife, air and water, climate and other important public land values.

Pursuant to the Federal Land Management Policy Act ("FLPMA"), BLM must periodically complete a Resource Management Plan ("RMP") to balance competing uses and guide how these public lands will be managed for decades to come. In developing the RMP, the National Environmental Policy Act ("NEPA") requires BLM to prepare an environmental impact statement ("EIS") that considers a broad range of alternatives, and takes a hard look at the environmental impacts of each alternative. Here, BLM violated this mandate.

Tremendous opportunity existed for BLM's new plan to embrace current science and understanding about the potential impacts of oil and gas on people and the environment, as well

as lessons learned from past failures. However, the finalized RMP and its associated EIS contain serious flaws, and reflect the continued prioritization of oil and gas above public health and the area's other uses and spectacular values. Specifically, the RMP and EIS fail to take the hard look NEPA requires at the direct, indirect, and cumulative impacts of greenhouse gas ("GHG") pollution and climate change, methane emissions, and human health, while also failing to consider a reasonable range of alternatives that would safeguard the planning area's other multiple use values.

Plaintiffs in the action (collectively "Citizen Groups") therefore respectfully request the Court to declare Federal Defendants' (collectively "BLM")[1] approval of the CRVFO RMP and EIS arbitrary and capricious, remand relevant portions to BLM, and enjoin further oil and gas leasing pending BLM's compliance with NEPA.

STATUTORY BACKGROUND

I. NATIONAL ENVIRONMENTAL POLICY ACT

NEPA is our "basic national charter for the protection of the environment." 40 C.F.R. § 1500.1. It is NEPA's purpose, in part, "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." 42 U.S.C. § 4321. NEPA was enacted with the recognition that "each person should enjoy a healthful environment," to ensure that the federal government uses all practicable means to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings," and to "attain the widest range of beneficial uses of the environment without

[1] Pursuant to Federal Rule of Civil Procedure 25(d), Secretary of the U.S. Department of the Interior Ryan Zinke is automatically substituted for former Secretary Sally Jewell, Acting Director of the Bureau of Land Management Michael Nedd is automatically substituted for former Director Neil Kornze, and Acting Field Manager Gloria Tibbetts is automatically substituted for former Manager Karl Mendonca.

degradation, risk to health or safety, or other undesirable and unintended consequences," among other policies. 42 U.S.C. § 4331(b).

"Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." 40 C.F.R. § 1501.2; *see also Marsh v. ONRC*, 490 U.S. 360, 371 (1989) (EIS "permits the public and other government agencies to react to the effects of a proposed action at a meaningful time)". To accomplish this purpose, NEPA requires that all federal agencies prepare a "detailed statement" regarding all "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). This statement, known as an EIS, must, among other things, describe the "environmental impact of the proposed action," and evaluate alternatives to the proposal. *Id.*

NEPA also requires the agency to "study, develop, and describe alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." *Id.* § 4332(2)(E). Alternatives are the "heart" of the NEPA process, ensuring that agencies "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14.

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

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

Regulations also direct that BLM to the fullest extent possible "encourage and facilitate public involvement" in the NEPA process. *Id.* § 1500.2(d).

II. FEDERAL LAND POLICY AND MANAGEMENT ACT

FLPMA instructs the Secretary of the U.S. Department of the Interior to "manage the public lands under principles of multiple use and sustained yield." 43 U.S.C. § 1732(a). "Multiple use" means "a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values." *Id.* § 1702(c).

FLPMA also requires that:

> [P]ublic lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

Id. § 1701(a)(8). BLM must "develop, maintain, and, when appropriate, revise land use plans which provide by tracts or areas for the use of the public lands." *Id.* § 1712.

BLM is also required to "take any action necessary to prevent unnecessary or undue degradation of the lands" and "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved." *Id.* § 1732(b), (d)(2)(A).

STANDARD OF REVIEW

Agency compliance with NEPA is judicially reviewed pursuant to the Administrative Procedure Act, 5 U.S.C. § 706, and is "set aside if it fails to meet statutory, procedural or constitutional requirements or if it was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Olenhouse v. Commodity Credit Corp*., 42 F.3d 1560, 1573-74 (10th Cir. 1994) (citing *Citizens to Preserve Overton Park v. Volpe,* 401 U.S. 402, 413, n.30

(1971)). "These standards require the reviewing court to engage in a substantial inquiry… An agency's decision is entitled to a presumption of regularity, but that presumption is not to shield [the agency's] action from a thorough, probing, in-depth review." *Id.* at 1574.

STANDING

Citizen Groups have standing to bring this action. Standing requires a showing of injury, traceability, and redressability. *S. Utah Wilderness All. v. Palma*, 707 F.3d 1143, 1153 (10th Cir. 2013). An organization has standing "when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *Friends of the Earth v. Laidlaw*, 528 U.S. 167, 181 (2000). A plaintiff's members' "reasonable concerns" of harm caused by the defendant's activity directly affecting those affiants' recreational, aesthetic, and economic interests establishes injury-in-fact. *Id*. at 183-84. "Under [NEPA], an injury results not from the action authorized by the agency's decision, but from the agency's *uninformed* decisionmaking." *Comm. to Save Rio Hondo v. Lucero*, 102 F.3d 445, 452 (10th Cir. 1996).

Here, Citizen Groups meet this standard. Citizen Groups' members are directly harmed by BLM's failure to comply with NEPA in programmatic decisionmaking and analysis for the Colorado River Valley RMP and EIS.[2] Citizen Groups' members live, work, and recreate in the planning area, with interests that are bound to the land, wildlands, air, rivers, habitat, wildlife, and other components of healthy, intact landscapes—all of which are threatened by human-

[2] *See* Hamilton Decl. ¶¶ 5, 7, 13 (Exhibit 1); Dexter Decl. ¶¶ 3, 10-13 (Exhibit 2); Elsner Decl. ¶¶ 1, 4-5 (Exhibit 3); Adams Decl. ¶¶ 5-6, 8 (Exhibit 4); Kunkle Decl. ¶ 1 (Exhibit 5); Kincade Decl. ¶¶ 5, 7-10 (Exhibit 6); Everson Decl. ¶¶ 3-7 (Exhibit 7); Arrington Decl. ¶¶ 4-9 (Exhibit 8); Tibbetts Decl. ¶¶ 4-10 (Exhibit 9); Smeltzer Decl. ¶¶ 3, 5, 13 (Exhibit 10); Tipton Decl. ¶¶ 4, 6 (Exhibit 11); Devanney Decl. ¶¶ 3, 5, 7-12, 14-15 (Exhibit 12).

caused climate change, and other impacts associated with oil and gas development.[3] Citizen Groups' members' activities and enjoyment of the planning area are both personal and professional, and include hiking, hunting, camping, skiing, photography, aesthetic enjoyment, spiritual contemplation, ranching, and other vocational, scientific, and recreational activities.[4] Having already witnessed the impact that current oil and gas development can have on nearby landscapes, as well as impacts to the planning area from climate change, Citizen Groups' members identify ongoing injuries to their use and enjoyment of the planning area, but also injuries and increased concerns from threats to their health and safety.[5]

Citizen Groups' members' injuries can be traced to BLM's decision to manage public lands and minerals in the CRVFO without taking a hard look at impacts and all reasonable alternatives under NEPA, which increases the likelihood of environmental, recreational, aesthetic, and health-related injuries to Citizen Groups from negative impacts to air, water, landscapes, and climate due to oil and gas leasing and development associated with the RMP.

Citizen Groups' members' injuries would be redressed by a favorable result in this case because BLM would be required to sufficiently analyze the direct, indirect, and cumulative impacts of oil and gas development on the environment and human health. Such analysis is fundamental to NEPA's role in agency decisionmaking, and could lead to a reduction in public

[3] *See* Hamilton Decl. ¶¶ 2-5, 10-13, 15-16; Dexter Decl. ¶¶ 2, 4, 6-9; Elsner Decl. ¶¶ 2-4, 6-7; Adams Decl. ¶¶ 2-3, 9; Kunkle Decl. 4-6, 8; Kincade Decl. ¶¶ 3-6, 9, 11; Everson Decl. ¶¶ 2-5; Arrington Decl. ¶¶ 2-3; Tibbetts Decl. ¶¶ 2-4; Smeltzer Decl. ¶¶2-3, 5-6, 8-9; Tipton Decl. ¶¶ 2-3, 5; Devanney Decl. ¶¶ 2-5; Trujillo Decl. ¶ 6-8 (Exhibit 13).

[4] *See* Hamilton Decl. ¶¶ 3, 8-9, 12; Dexter Decl. ¶¶ 4, 6, 8, 13-14; Elsner Decl. ¶¶ 3, 6; Adams Decl. ¶¶ 4, 6-7; Kunkle Decl. ¶¶ 5-8; Kincade Decl. ¶¶ 4, 6; Everson Decl. ¶¶9-10; Arrington Decl. ¶¶5-7; Tibbetts Decl. ¶¶4, 10; Smeltzer Decl. ¶¶ 2-3, 5; Tipton Decl. ¶¶ 2, 4-5; Devanney Decl. ¶¶ 4, 12.

[5] *See* Hamilton Decl. ¶¶ 4-9, 12, 14, 16-18; Dexter Decl. ¶¶ 3, 9-14; Elsner Decl. ¶¶ 4-7; Adams Decl. ¶¶ 4-9; Kunkle Decl. ¶¶9-10; Kincade Decl. ¶¶ 5, 7-11; Everson Decl. ¶¶ 4-10; Arrington Decl. ¶¶4-9; Tibbetts Decl. ¶¶ 5-8, 10; Smeltzer Decl ¶¶ 3, 5, 7-12, 14; Tipton Decl. ¶¶3, 5-6; Devanney Decl. ¶¶ 8, 10-15.

lands made available to oil and gas leasing and development and/or the application of additional measures that would lessen the potential impacts to people and the environment. "Under [NEPA], 'the normal standards of redressability' are relaxed; a plaintiff need not establish that the ultimate agency decision would change upon [NEPA] compliance." *Comm. to Save Rio Hondo*, 102 F.3d at 452 (quoting *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 n.7 (1992)).

STATEMENT OF FACTS

I. BLM'S OIL AND GAS PLANNING AND MANAGEMENT FRAMEWORK

BLM manages onshore oil and gas (a.k.a. "fluid minerals") leasing and development through a three-phase process of planning, leasing, and drilling. Each phase serves a distinct purpose, and is subject to unique rules, policies, and procedures, though the three phases, ultimately, must ensure "orderly and efficient" development. 43 C.F.R. § 3160.0-4.

This lawsuit concerns the first phase, in which BLM develops a macro-level resource management plan in accordance with FLPMA, NEPA, and associated planning regulations, 43 C.F.R. §§ 1600 *et seq*., with additional guidance from BLM's Land Use Planning Handbook (H-1601-1). The RMP is not specific to oil and gas leasing and drilling, but establishes administrative priorities for all multiple use values, aiming to balance, guide, and constrain BLM's management of these activities throughout the planning area. 43 U.S.C. § 1712(c)(1)-(9). With respect to fluid minerals leasing decisions, the RMP determines which lands containing federal minerals will be open to leasing and under what conditions, and analyzes the direct, indirect, and cumulative impacts from predicted implementation-stage development. 30 U.S.C. § 226(a); 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. Developing an RMP requires BLM to predict the extent to which different activities, if permitted, would foreseeably occur. For fluid minerals, this prediction is premised on a reasonably foreseeable development scenario ("RFDS") which

forecasts the pace and scope of development. BLM's regulations require development of an EIS when preparing an RMP, and that "the proposed resource management plan shall be published in a single document with the related environmental impact statement … whenever possible." 43 C.F.R. § 1601.0-6.

In the second phase of oil and gas decisionmaking, BLM accepts the nomination of lease parcels from the lands made available for mineral leasing through the RMP, and sells oil and gas development rights for particular lands in accordance with 43 C.F.R. §§ 3120 *et seq*., with additional agency guidance outlined in BLM Instruction Memorandum No. 2010-117. Prior to a BLM lease sale, the agency has the authority to subject leases to terms and conditions, which can serve as "stipulations" to protect the environment. 43 C.F.R. § 3101.1-3. Oil and gas leases confer "the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold." 43 C.F.R. § 3101.1-2.

The third phase occurs when the lessee applies for a permit to drill or develop the lease. 43 C.F.R. § 3162.3-1(c). At this stage, BLM may condition approval of the permit (referred to as an "APD," for application for permit to drill) on the lessees' adoption of "reasonable measures" whose scope is delimited by the lease and the lessees' surface use rights. 43 C.F.R. § 3101.1-2.

II. BLM'S PLANNING AND MANAGEMENT IN THE COLORADO RIVER VALLEY FIELD OFFICE

The Colorado River Valley RMP applies to 505,200 acres of BLM-administered public lands in northwestern Colorado, and 701,200 acres of BLM-managed federal mineral estate, much of it underlying the BLM surface estate but some under private or other government lands. These areas are interspersed with other ownerships throughout the CRVFO and comprise a 2.9

million acre planning area that BLM considered in its EIS.[6] AR184598.

In the RMP, the agency "defin[es] areas as high, medium, low, or no known potential for the occurrence of oil and gas resources." AR027032, 185760. According to BLM's RFDS, 99 percent of past and present drilling activity overlaps areas considered to have high potential. AR027046. There were approximately 3,500 producing oil and gas wells within the planning area as of 2006 when the RFDS was completed. AR027048. Many additional wells have been drilled to date. Approximately 95 percent of the high potential lands in the planning area have already been leased for oil and gas. AR185190.

Revision of the RMP was initiated in 2007, AR188155, and finalized through a Record of Decision ("ROD") on June 12, 2015—replacing the 1984 Glenwood Springs Resources Area RMP and subsequent amendments. AR188120. *See* 43 C.F.R. § 1610.5-6. The CRVFO RMP acts as a blueprint for how the BLM will manage areas of public lands and minerals over a 20-year time horizon. The RMP establishes goals and standards for future management actions, as well as making some implementation-level decisions, based in part on the analysis of the direct, indirect, and cumulative impacts of various alternatives in the corresponding EIS.

BLM considered four alternatives in the EIS: No Action (Alternative A); Mixed Use (Alternative B); Conservation (Alternative C); and Resource Use (Alternative D). BLM's Proposed Alternative in the Final EIS was Alternative B. AR184606. In Proposed Alternative B, all but 2,500 acres of the planning area with a high potential for oil and gas are left open to leasing. AR184621. In addition, although BLM predicted that there would be little oil and gas activity in the "low potential" areas, BLM nonetheless left the vast majority of these areas open

[6] Inside the 2.9 million acre planning area is the Roan Plateau, which is governed by a separate RMP.

to oil and gas development, totaling 456,100 acres. AR184620. In all, 603,100 acres are left open to oil and gas leasing, and 98,100 acres are closed. *Id*.

BLM predicts that, under the RMP's chosen alternative, there will be 4,198 wells on BLM lands (6,640 wells including those on the Roan Plateau and National Forest Service Lands), AR185778, and a cumulative total of 15,664 wells in the planning area. AR083834. All of these wells will be drilled and associated facilities and infrastructure will be developed during the 20-year planning period. These wells are predicted to produce 188.9 billion cubic feet of natural gas and 787,600 barrels of natural gas condensate under the Proposed Alternative. AR185947. BLM estimates that 99 percent of future oil and gas wells on BLM lands will be drilled in the 147,000-acre high potential area. AR185759.

U.S. Census block data indicates that 6,166 people live within one mile of wells that already exist in the planning area. AR186673. Many more live downstream and may rely on water sources in the areas that have been developed or may be developed for oil and gas production in the future. AR184848-49. Still further people suffer from the associated air pollution, including regional pollutants like ozone. AR209677. These same people will suffer the brunt of the impacts resulting from oil and gas activity authorized by the RMP, which predicts that future drilling will occur in areas already developed, magnifying existing impacts. AR027066.

ARGUMENT

I. BLM FAILED TO TAKE A HARD LOOK AT THE DIRECT, INDIRECT, AND CUMULATIVE IMPACTS TO PEOPLE AND THE ENVIRONMENT

NEPA imposes "action-forcing procedures … requir[ing] that agencies take a hard look at environmental consequences." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). The purpose of the "hard look" requirement is to ensure that the "agency has

adequately considered and disclosed the environmental impact of its actions and that its decision is not arbitrary or capricious." *Baltimore Gas & Elec. v. NRDC,* 462 U.S. 87, 97 (1983). These "environmental consequences" may be direct, indirect, or cumulative. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8; *see also Hillsdale Envtl. Loss Prevention v. U.S. Army Corps of Eng'rs*, 702 F.3d 1156, 1166 (10th Cir. 2012); AR185187. Direct effects "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.* § 1508.8(b). "Indirect effects may include … effects on air and water and other natural systems, including ecosystems." *Id.* A cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." *Id.* § 1508.7; *see also id.* § 1508.25. BLM determines whether direct, indirect, or cumulative impacts are significant by accounting for both the "context" and "intensity" of those impacts. *Id.* § 1508.27.

An environmental effect is "reasonably foreseeable" if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision." *Sierra Club v. Marsh,* 976 F.2d 763, 767 (1st Cir.1992). An agency's hard look examination "must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made." *Forest Guardians v. U.S. Fish & Wildlife Serv.,* 611 F.3d 692, 712 (10th Cir. 2010). "Looking to the standards set out by regulation and by statute, assessment of all 'reasonably foreseeable' impacts must occur at the earliest practicable point, and must take place before an 'irretrievable commitment of resources'

is made." *New Mexico ex rel. Richardson v. BLM,* 565 F.3d 683, 718 (10th Cir. 2009); *see also* 42 U.S.C. § 4332(2)(C)(v); 40 C.F.R. §§ 1501.2, 1502.22; *Sierra Club v. Hodel*, 848 F.2d 1068, 1093 (10th Cir. 1988) (holding agencies are to perform hard look NEPA analysis "before committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values.").

A. BLM Failed to Take a Hard Look at Greenhouse Gas Pollution and Climate Change.

BLM failed to take a hard look at the impacts of GHG emissions from oil and gas leasing and development associated with the RMP. The EIS acknowledges, as it must, that the climate is changing, that these changes will have severe consequences, and that human emissions—in particular, emissions from fossil fuel combustion—are the primary driver of these changes. AR184839. BLM recognized that these facts are "known with virtual certainty because they are based on well-known physical laws and documented trends," *id.*; other agencies have also affirmed these basic principles. *See, e.g.*, *Coal. for Responsible Reg. v. EPA*, 684 F.3d 102, 120-22 (D.C. Cir. 2012) (holding that vast body of scientific evidence supports EPA's determination that human emissions drive climate change). However, BLM's sole discussion of how the RMP would impact climate change is an estimate of the amount of GHGs that would be directly emitted by oil and gas drilling and related activity in the management area. AR00185233-35.

NEPA requires a much broader and more searching analysis. First, BLM failed to analyze the foreseeable indirect GHG emissions resulting from combustion or other end uses of the oil and gas extracted from the planning area. Second, BLM also failed to consider the cumulative impacts of GHG emissions associated with oil and gas production in the CRVFO, together with other past, present, and reasonably foreseeable oil and gas development managed by the agency. And finally, NEPA requires more than a mere disclosure of the volume of emissions: BLM must

analyze the significance and severity of emissions, so that decisionmakers and the public can determine whether and how those emissions should influence the choice among alternatives. *See Methow Valley,* 490 U.S. at 351-52 (recognizing that EIS must discuss "adverse environmental effects which cannot be avoided[,]" which is necessary to "properly evaluate the severity of the adverse effects"). The record refutes BLM's conclusion that it is impossible to determine whether the GHG emissions at issue will have a significant impact. AR185236.

1. BLM failed to analyze the foreseeable indirect impacts of oil and gas.

No analysis of the indirect impacts from oil and gas production exists in the RMP, in violation of NEPA. Regulations require analysis of indirect effects, "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b). The White House Council on Environmental Quality ("CEQ") (whose interpretations of NEPA regulations receive judicial deference)[7] and numerous courts have held that the reasonably foreseeable effects of allowing fossil fuel extraction on public lands include the emissions resulting from eventual combustion of that fuel. *See* 81 Fed. Reg. 51,866 (Aug. 5, 2016) at 16 n.42;[8] *WildEarth Guardians v. OSMRE*, 104 F. Supp. 3d 1208, 1229-30 (D. Colo. 2015), vacated as moot, (recognizing that "combustion is therefore an indirect effect of the

[7] *See Wyoming v. U.S. Dep't of Agric.,* 661 F.3d 1209, 1260 n.36 (10th Cir. 2011) (recognizing CEQ guidance is "persuasive authority" for interpreting NEPA and its implementing regulations).

[8] CEQ, *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 at: https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf (hereinafter "CEQ Guidance") (Exhibit 14). The Court may take judicial notice of this and other factual documents under Federal Rules of Evidence 201(b)(2), (c). While we recognize that the CEQ Guidance was recently withdrawn, this does not preclude agencies from utilizing the tools described therein to analyze the impacts of its actions on climate change when conducting environmental reviews under NEPA. Notably, the guidance is intended to "facilitate compliance with existing NEPA requirements." *Id.* at 1; *see also* 40 C.F.R. §§ 1500-1508.

approval of the mining plan modifications"); *Diné CARE v. OSMRE*, 82 F. Supp. 3d 1201, 1213 (D. Colo. 2015), vacated as moot, (holding that "combustion-related impacts … are an 'indirect effect' requiring NEPA analysis."); *High Country Conserv. Advocates v. U.S. Forest Serv.,* 52 F.Supp.3d 1174, 1189-90 (D. Colo. 2014) (recognizing that the agencies "do not dispute that they are required to analyze the indirect effects of GHG emissions"); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (finding where agency action will foreseeably increase coal consumption, NEPA requires analysis of consumption emissions).

Here, BLM specifically recognized that "[d]ecisions made under the RMP … can have indirect effects resulting from activities that release GHG air pollutants." AR184839. Collectively, these decisions can have a large impact on climate. The agency predicts that the selected alternative will lead to the drilling of 4,198 wells over the life of the plan, AR185478, producing an average of 188.9 billion cubic feet of gas per year. AR185947. But BLM failed to analyze the foreseeable emissions that will result from the processing, transmission, storage, distribution, and end use of these hydrocarbons. BLM's wholesale omission of these indirect emissions from its estimates violated NEPA. *See High Country*, 52 F. Supp. 3d at 1196–98 (finding where Forest Service action would enable additional coal mining, NEPA required analysis of impact of burning mined coal), *Border Power Plant Working Grp. v. U.S. Dep't of Energy*, 260 F. Supp. 2d 997, 1013, 1028-29 (S.D. Cal. 2003) (finding agency failure to disclose project's indirect carbon dioxide emissions violates NEPA).

2. BLM failed to analyze the cumulative impacts of GHG pollution and climate change.

NEPA also requires a detailed analysis of "cumulative" effects, "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40

C.F.R. §§ 1508.7, 1508.25(c). A cumulative effects analysis must be sufficiently detailed to be "useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts." *Muckleshoot Indian Tribe v. U.S. Forest Serv.,* 177 F.3d 800, 810 (9th Cir.1999). "Consideration of cumulative impacts requires 'some quantified or detailed information; … [g]eneral statements about "possible" effects and "some risk" do not constitute a "hard look" absent a justification regarding why more definitive information could not be provided.'" *Kern v. BLM*, 284 F.3d 1062, 1075 (9th Cir. 2002) (citing *Neighbors of Cuddy Mountain v. U.S. Forest Serv.,* 137 F.3d 1372, 1379-80 (9th Cir.1998)).

Here, BLM appropriately found that "[c]umulative climate change impacts are caused by CRVFO GHG emissions and increases in regional, national, and global GHG emissions." AR185240.[9] Yet, BLM failed to analyze the cumulative impacts of its RMP decisions at this regional, national, and global scale, instead stating that "[q]uantification of cumulative climate change impacts…is beyond the scope of this analysis." AR185240. BLM's failure to provide "quantified or detailed information" on cumulative impacts violates NEPA. *Cuddy Mountain,* 137 F.3d at 1379.

Applying BLM's chosen context for the consideration of cumulative climate change impacts, the agency's analysis should have included the incremental CRVFO GHG emissions increases, *added* to other past, present, and reasonably foreseeable BLM-managed fossil fuel extraction emissions on a regional and national scale.[10] 40 C.F.R. §§ 1508.7, 1508.27(a).

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[9] *See also* AR185236 (applying *direct* emissions estimates within this context, recognizing "GHG emission increases associated with the Proposed RMP are less than 0.23 percent of the 2007 Colorado GHG emissions inventory and are approximately 0.004 percent of the 2008 US GHG emissions inventory"); *cf. Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1216-17 (9th Cir. 2008) (holding that quantifying GHG emissions and calculating what "percentage" it represented of "U.S. greenhouse gas emissions" was inadequate).

[10] *See* AR199516 (providing in Colorado there existed "over 23,000 gas and oil wells in the state,

Particularly at the foundational planning stage—where the RMP will guide agency decisionmaking during the crucial timeframe where climate change must be addressed if we are to stem the worst of its impacts—BLM's analysis cannot be so myopic. *See Grand Canyon Trust v. Fed. Aviation Admin.*, 290 F.3d 339, 342 (D.C. Cir. 2002) (evaluating the environmental consequences of a proposed action, the agency "must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum."). Further,

> [T]he fact that "climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control ... does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming."

Ctr. for Biological Diversity, 538 F.3d at 1217. BLM must account for the cumulative impacts of GHG emissions associated with the management of our public lands and minerals. Failing to do so violates NEPA. The court cannot "defer to a void." *High Country*, 52 F. Supp. 3d at 1186.

The record demonstrates not only the magnitude of the threat posed by climate change,[11] but also the importance that federal decisionmaking be reflective of this harm.[12] The Paris Agreement codified among the nations of this world the scientific understanding that "climate change represents an urgent and potentially irreversible threat to human societies and the planet," while setting the goal of "holding the increase in the global average temperature to well below

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43 operational gas processing plants, 2 oil refineries, and over 32,000 miles of gas pipelines"); AR200615 (providing "total GHG emissions resulting from the extraction of fossil fuels from federal lands by private leaseholders was approximately 1,563 MMTCO$_2$e in 2008"); AR200618 (providing "ultimate GHG emissions from [federal] leases could have accounted for approximately 23% of total U.S. GHG emissions and 27% of energy-related GHG emissions").

[11] *See, e.g.,* AR185241-42 (summarizing projected regional impacts from climate change).

[12] *See* AR204677 (recognizing that "[l]imiting climate change will require substantial and sustained reductions of greenhouse gas emissions."); Sec. Order No. 3226 (Jan. 19, 2001) (stating "[t]here is a consensus in the international community that global climate change is occurring and that it should be addressed in governmental decision making," and establishing the responsibility of agencies "to consider and analyze potential climate change impacts when … developing multi-year management plans, and/or when making major decisions regarding the potential utilization of resources under the Department's purview."); Sec. Order No. 3289 (Sept. 14, 2009) (reinstating Sec. Order 3226).

2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C."[13] The record shows that for an 80 percent probability of staying below the 2°C warming threshold, there was a global carbon budget of 890 gigatons of emissions as of 2000—with less than 430 gigatons remaining as of 2009. AR199861. Globally we emitted 31.6 gigatons in 2009, with emissions expected increase by roughly three percent a year. AR199428. Thus, the remaining global carbon budget to stay under the 2°C threshold of warming is currently around 200 gigatons. Total U.S. emissions in 2006 were 6.802 gigatons, AR185232, with emissions from fossil fuel extraction on federal lands approximately 1.563 gigatons in 2008. AR200615.

In short, the global carbon budget is rapidly being spent, and every additional ton of emissions is a debit against our future. Failing to account for the cumulative impacts of CRVFO emissions, together with emissions from the 700 million acres of federal onshore subsurface minerals managed by BLM, violates NEPA by "impermissibly subject[ing] the decisionmaking process … to the tyranny of small decisions." *Kern*, 284 F.3d at 1078. Nowhere has BLM provided the type of cumulative analysis of GHG emissions that NEPA demands. These cumulative emissions should be measured against the remaining carbon budget, thereby providing BLM and the public the necessary context for understanding the significance of BLM's decisionmaking. 40 C.F.R.§ 1508.27(a).

3. BLM failed to apply the Social Cost of Carbon, which offers a measure to evaluate the magnitude and severity of GHG pollution impacts.

BLM further violated NEPA by failing to take a hard look at the impact of the GHG

[13] U.N. Framework Convention on Climate Change, Conference of the Parties, Adoption of the Paris Agreement, Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015), available at: http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf ("Paris Agreement") (Exhibit 15). *But cf.* AR199427 (recognizing that "two degrees of warming is actually a prescription for long-term disaster" and a lower threshold is required).

emissions discussed in the EIS. BLM simply estimated that the adopted RMP would result in 610,346 tons of annual direct GHG emissions. AR185239. NEPA requires a more searching analysis than merely disclosing the amount of pollution. Rather, BLM must examine the "ecological[,]… economic, [and] social" impacts of those emissions, including an assessment of their "significance." 40 C.F.R. §§ 1508.8(b), 1502.16(a)-(b).[14] In particular, having included in the EIS its assessment of the economic benefits from oil and gas leasing and development under the RMP, BLM was obligated to also present available information about the economic downsides of the consequent GHG emissions. The record squarely refutes BLM's assertion that such analysis was impossible.

BLM stated that it could do no more than disclose the amount of emissions because "it is not possible to determine the impact that GHG emissions from the Proposed RMP would have on global climate change," AR185236, and that "[t]he tools necessary to quantify the incremental climate impacts of GHG emissions associated with specific activities are presently unavailable." AR185230. These assertions do not justify BLM's failure to provide any analysis of the severity of ecologic, economic, or social impacts, because the record squarely demonstrates that at least one tool for doing so "is and was available: the social cost of carbon protocol" which was "designed to quantify a project's contribution to costs associated with global climate change." *High Country,* 52 F.Supp.3d at 1190. BLM was aware of the social cost of carbon protocol when it prepared the RMP, but arbitrarily refused to apply it to planning area emissions. AR186593.

As explained by Citizen Groups' comments to BLM, AR186593, the protocol is "an

[14] *See also* Sec. Order 3289 (requiring BLM to "appl[y] scientific tools to increase understanding of climate change and to coordinate an effective response to its impacts," and mandating that "management decisions made in response to climate change impacts must be informed by [this] science.").

estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year[,]" that allows "agencies to incorporate the social benefits of reducing carbon dioxide (CO_2) emissions into cost-benefit analyses…" AR201225.[15] Even if, as BLM suggests, it is infeasible to predict the specific physical changes to the environment that will result from these specific emissions, the protocol provides a method to "evaluat[e]" the emissions' impacts which is "generally accepted in the scientific community," and which BLM was not permitted to ignore. 40 C.F.R. § 1502.22(b)(4). The protocol is one available means of filling the essential but unmet need in the analysis of more "sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id.* at § 1502.14. Critically, the protocol not only contextualizes costs associated with climate change, but can also be used as a proxy for understanding climate impacts and to compare alternatives. *See id.* § 1502.22(a) (stating agency "shall" include all "information relevant to reasonably foreseeable significant adverse impacts [that] is essential to a reasoned choice among alternatives).

BLM was particularly obligated to address the economic impact of GHG emissions by estimating their social cost because the agency did provide monetized estimates of the benefits of oil and gas production. Although NEPA does not require BLM to conduct cost-benefit analysis, 40 C.F.R. § 1502.23, it is "arbitrary and capricious to quantify the benefits of [an action] and then explain that a similar analysis of the costs [is] impossible when such an analysis [is] in fact possible." *High Country,* 52 F.Supp.3d at 1191; *see also Johnston v. Davis*, 698 F.2d 1088,

[15] Exec. Order No. 13783 (March 28, 2017) at § 5(b), disbanded the Federal Government's Interagency Working Group on the Social Cost of Carbon, and withdrew its Technical Support Document ("TSD"), AR201224 *et seq.*, "as no longer representative of governmental policy." Notably, the Order did not refute or undermine the scientific or economic basis of the TSD, rather withdrew the document for political reasons; therefore, the protocol remains a credible tool for assessing the impacts of GHG emissions. *See* 40 C.F.R. § 1502.22(b)(3) (requiring the use of "existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment.").

1094-95 (10th Cir. 1983) (holding agency may not present economic analysis in misleading way to give impression that benefits exceed costs, when evidence suggests the contrary); *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446-48 (4th Cir. 1996) (stating "it is essential that the EIS not be based on misleading economic assumptions."); *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (holding if agency "trumpets" economic benefits, it must also disclose costs); *Ctr. for Biological Diversity*, 538 F.3d at 1200 (it is misleading to present economic analysis without assigning any cost to GHG emissions).

Here, BLM "trumpeted" economic, revenue and employment benefits across alternatives. AR185947. BLM contended that oil and gas development in the planning area would provide 1,088 jobs at an annual salary of $87,516 each, along with oil and gas royalty distribution to planning area counties of $15,866,946. AR185950-51; *see also* AR185958 (identifying economic benefits in the context of Alternative B). However, as in *High Country*, BLM declined to quantify the economic costs of oil and gas related GHG emissions. That arbitrarily created an artificial bias in favor of oil and gas leasing and development.

Thus, because BLM did not otherwise satisfy NEPA's command to disclose the impact or significance of GHG emissions, and because BLM chose to quantify monetary benefits of oil and gas extraction, BLM's refusal to use available tools to similarly monetize the social cost of carbon emissions was arbitrary. Even if, counterfactually, BLM had articulated a reason for disagreeing with the dollar costs estimated by the interagency working group, BLM could not ignore this method of analysis entirely. "[B]y deciding not to quantify the costs at all," BLM implied that there were no such costs—that the social cost of a ton of carbon dioxide emissions was $0." *High Country,* 52 F.Supp.3d at 1192. Here, as in every other case considering the issue, that implication is unsupported and arbitrary. *Id.*, *Ctr. for Biological Diversity,* 538 F.3d at 1200;

Border Power Plant, 260 F.Supp.2d at 1028-29. Thus, BLM's treatment of GHG emissions was one-sided, misleading, and contrary to NEPA.

B. BLM Failed to Take a Hard Look at Methane Emissions.

BLM also failed to take a hard look at methane emissions associated with the RMP—arbitrarily using an outdated global warming potential ("GWP") and relying on questionable operator data for emissions estimates—thereby underestimating the magnitude of potential impacts. NEPA mandates that an EIS contain "high quality" information and "[a]ccurate scientific analysis" sufficient to "help public officials make decisions that are based on understanding environmental consequences." 40 C.F.R. § 1500.1(b), (c). BLM also has a duty to "insure the professional integrity, including scientific integrity, of the discussions and analyses in [EISs]." 40 C.F.R. § 1502.24. BLM violated these requirements by relying on outdated and unreliable data to quantify and analyze methane emissions.

1. BLM arbitrarily ignored generally accepted science regarding methane's potency.

As recognized by BLM, "[a] GHG's ability to contribute to global warming is based on its longevity in the atmosphere and its heat trapping capacity. In order to aggregate GHG emissions and assess their contribution to global warming, the [U.S. Environmental Protection Agency ("EPA")] has assigned each GHG a global warming potential (GWP) that is used to calculate CO_2e [or carbon dioxide equivalent]." AR184840. Here, BLM used a GWP of 21 for methane based on a 100-year timeframe, *id.*, which underreported the potential impacts.

Notably, BLM failed to calculate the GWP using a 20-year timeframe. This is an important omission because methane has greater radiative forcing (i.e., a greater capacity to warm the atmosphere), but a shorter atmospheric lifetime, than CO_2. AR204672 (calculating radiative forcing of methane); AR198357 (recognizing GWP as a "measure of the relative

radiative effects of the emissions"); AR202518 (explaining methane's GWP). Thus, relative to CO_2, methane has much greater climate impacts in the near-term. AR2046761. BLM must analyze climate impacts in the near-term if the agency is to consider measures to avoid significant global warming, and, importantly, a near-term analysis is also consistent with the 20-year planning horizon for the RMP. Other agencies have used a 20-year GWP to calculate lifecycle emissions.[16]

Critically, the Intergovernmental Panel on Climate Change ("IPCC")—a Nobel Prize-winning scientific body within the United Nations that reviews and assesses the most recent scientific, technical, and socio-economic information relevant to our understanding of climate change—calculations of GWP account for methane's changing capacity to warm the atmosphere over time, and thus use both a 100-year and a 20-year time scale to measure methane's relative impact. AR204672. The IPCC's current 20-year GWP for fossil methane is 87. AR204675.[17] Using this GWP, BLM's estimated methane emissions for the planning area of 19,586 metric tons per year would be equivalent to 1,703,990 metric tons CO_2 per year, rather than the 411,308 metric tons of CO_2e BLM relied upon for its analysis. AR185239.

Further, the GWP of 21 that BLM used to calculate the 100-year potency of methane is outdated, resulting in the underreporting of potential impacts. The 100-year GWP used by BLM was derived from the IPCC's Second Assessment Report from 1996, AR198358, and has now twice been revised upwards. The IPCC's Fifth Assessment Report in 2013 concluded that methane is a much more potent driver of climate change than science previously understood, and

[16] *See, e.g.,* U.S. Dep't of Energy, *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas*, 1, 8 (2014), available at: https://www.energy.gov/sites/prod/files/2014/05/f16/Life%20Cycle%20GHG%20Perspective%20Report.pdf (using a 20-year GWP to calculate the lifecycle GHG emissions from LNG exports to European and Asian markets) (Exhibit 16).

[17] Citing to IPCC, Contribution of Working Group I to the Fifth Assessment Report: The Physical Science Basis, at 714 (Table 8.7) (Sept. 2013) (Exhibit 17).

thus revised the 100-year GWP for fossil methane to 36. AR204675. Applying the updated GWP would substantially change BLM's assumptions regarding methane pollution's impact on the planning area. For example, BLM's estimated annual methane emissions of 19,586 metric tons is equivalent to 411,308 metric tons CO_2 using the outdated 100-year GWP of 21, AR185239, but increases to 705,096 metric tons CO_2e using the current 100-year GWP of 36.

Thus, BLM's consideration of methane's warming potential is fatally flawed in two respects. First, BLM failed to consider methane's 20-year GWP, thus significantly underestimating near-term impacts that will occur in a timeframe consistent with the RMP's planning horizon. NEPA requires BLM to consider "[b]oth the short- and long-term effects" of an action. 40 CFR § 1508.27(a). Such consideration was readily available by applying the current GWP for both the 100-year and 20-year time horizons. Second, BLM relied on outdated values for methane's GWP to calculate the CO_2 equivalence of estimated methane emissions in the planning area. Courts have long held that agency reliance on outdated data invalidates environmental review. *See, e.g., Northern Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1085-86 (9th Cir. 2011) (finding ten-year old data "too stale" and thus that EIS was arbitrary and capricious); *Lands Council v. Powell*, 395 F.3d 1019, 1031 (9th Cir. 2005) (holding data was "too outdated to carry the weight assigned to it" when analyzing cumulative impacts); *Seattle Audubon Soc. v. Espy*, 998 F.2d 699, 704-05 (9th Cir. 1993) (relying on "stale scientific evidence" violated NEPA). Thus, BLM's failure to apply current data on methane's warming potential across relevant timeframes was arbitrary and capricious. *See Marsh*, 490 U.S. at 378 (recognizing decision is arbitrary and capricious if not "based on a consideration of relevant factors").

2. BLM relied on underestimated methane emissions data.

Moreover, BLM's assumptions about the magnitude of methane emissions associated with the RMP underestimate the true scale of impacts from oil and gas operations. BLM estimated planning area methane emissions of 19,586 metric tons per year. AR185239. This figure comes from modeling data in the Air Resources Technical Support Document ("ARTSD"),[18] which is based on project-level GHG emissions projected for the year 2028. AR083849.

Several incorrect assumptions underlie this figure, which serve to undermine its validity as well as BLM's reliance on it in support of its RMP analysis. First, modeling data comes solely from survey responses provided by operators of oil and gas facilities in the CRVFO who forecasted oil and gas equipment emissions. AR083841. Second, this data is not based on current or historic emission rates in the planning area, but on industry-provided data that forecast emissions in 2028. *Id.* And third, BLM adjusts these emissions forecasts by arbitrarily assuming the full implementation of emissions control technologies on specific oil and gas emission sources in 2028—technologies that are not currently applied uniformly to those same sources in the CRVFO. *See, e.g.,* AR083843 (well completions), 083844 (pneumatic devices).

The record contains no information that the operators' reported equipment counts or associated emissions were ever checked by BLM for validity, or that a relevant sampling of well emissions was ever performed to verify operator assumptions. Setting aside the potential that operator projected emissions might include some inherent bias, BLM simply adopted this information on faith, and then used the data to form the basis of its analysis in the RMP.

Applying BLM-projected emissions to projected planning area production estimates

[18] The ARTDS is a tool to make air resources management decisions in the Comprehensive Air Resources Protection Protocol ("CARPP"), which in turn is used to evaluate the impacts of resource decisions on air quality in the CRVFO. AR185201-02.

allows a calculation of the assumed leakage rate for the CRVFO. Here, this calculation is significantly lower than estimates of leakage rates that BLM has provided in other contexts, suggesting that operators have provided a underrepresentation of emissions. Specifically, BLM relies on operator survey responses regarding future activity and emission rates to forecast total methane emissions of 19,586 metric tons per year, AR083849, 185239, and estimates production at 420,000 thousand cubic feet of natural gas per day. AR083834. This results in an assumed methane leakage rate from planning area sources of just 0.8 percent of production.[19]

However, in BLM's recently promulgated rule on oil and gas waste prevention, the agency recognizes that in 2014, operators vented about 30 billion cubic feet of methane and flared at least 81 billion cubic feet of natural gas from BLM leases "totaling 4.1 percent of the total production." 81 Fed. Reg. 83008, 83010 (Nov. 18, 2016). This equates to approximately 1.1 percent of total production being leaked and vented. When applying the 1.1 percent leakage rate, the estimated methane emissions from the CRVFO would be approximately 25,386 metric tons per year, a 30 percent increase. The 2014 EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks indicates that in 2012 methane emissions from natural gas systems equaled approximately 1.3 percent of production. AR212525. When applying the 1.3 percent leakage rate, the estimated methane emissions from the CRVFO would be approximately 30,000 metric tons per year, a 53 percent increase. However, according to the Regulatory Impact Assessment for the BLM waste rule, even the adjusted leakage rates are likely to be underestimated.

> Our estimates for gas losses from venting and leaks are derived from data from the GHG Inventory. As discussed in detail in the preambles to the proposed and final rules, there is uncertainty regarding the accuracy of these estimates. In particular, several recent peer-reviewed studies suggest that these estimates underestimate, and potentially significantly underestimate, the volume of current

[19] Calculation requires conversion to equivalent factors; i.e., 19,588 metric tons of CH_4 = 1,017,558 cubic feet of CH_4 = 1,290,647 cubic feet of NG; and 420,000 cubic feet per day = 153,300,000 cubic feet per year.

losses from venting and leaks.[20]

Emission rates may also be underestimated because they vary regionally and by the drilling technology used. AR202498. For example, EPA has used an emissions factor of 9,175 thousand cubic feet of gas emitted to the atmosphere per well completion in calculating its GHG inventory. AR204401. However, this emission factor is simply a broad, generalized estimate for well emissions across the nation, and can vary significantly from one geologic formation to the next. Well completion emissions reported in the Piceance Basin are as high as 22,000 thousand cubic feet of gas per well. AR186612.

Taken together, BLM's failure to apply current global warming potentials across relevant timeframes, as well as the agency's exclusive reliance on unverified operator-generated equipment and emissions data, results in gross underestimates in the magnitude of methane emissions and corresponding impacts to the CRVFO. These failures were arbitrary and capricious, and failed to amount to a hard look at the impact of methane emissions. *See* 40 C.F.R. § 1500.1(b), (c); *Olenhouse*, 42 F.3d at 1574.

C. BLM Failed to Take a Hard Look at the Impacts of Oil and Gas on Human Health.

BLM's EIS fails its basic function of providing the public, decisionmakers, and other officials with a meaningful analysis of the potential health impacts from the doubling federal oil and gas wells in the CRVFO. The record squarely contradicts BLM's assertion that no health impacts from oil and gas activity have been documented in the planning area. BLM's public health effects section offers only vague comparisons among management alternatives, and is virtually devoid of information about the broad spectrum of potential human health impacts from oil and gas development identified in the scientific literature, including congenital heart defects

[20] BLM, Regulatory Impact Analysis for: Revisions to 43 CFR 3100 and 43 CFR 3600 (Nov. 10, 2016), at 41 (Exhibit 18).

and preterm births, endocrine disruption and neurologic effects, as well as immune and reproductive system disorders. And the agency's other justifications for not discussing potential health impacts—that BLM will monitor for problems, can reveal or mitigate impacts later, and is relying on legal compliance—do not withstand scrutiny or excuse its NEPA violations.

1. BLM is mistaken that chemical impacts from fracking have not been shown to threaten public health in the planning area.

BLM failed its NEPA duty to rigorously examine and disclose the broad spectrum of threats to public health from modern oil and gas drilling techniques, including hydraulic fracturing or "fracking." The agency does not dispute its obligation to consider health impacts, nor could it do so. *See, e.g. Middle Rio Grande Conserv. Dist. v. Norton*, 294 F.3d 1220, 1229 (10th Cir. 2002) ("'Effects' or impacts include 'ecological, ... aesthetic, historic, cultural, economic, social, or health' effects") (citing 40 C.F.R. § 1508.8). This obligation extends to possible effects as well as certain ones: unless the agency can certify that decisions "will not significantly impact the human environment" they must prepare an EIS covering "the potential environmental impacts of proposed actions." *Citizens' Committee to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1021 (10th Cir. 2009). Again, "[g]eneral statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Kern*, 284 F.3d at 1075.

Rather than take the required hard look at human health risks, the EIS dismisses them based in part on the demonstrably wrong assertion that these risks have not been shown to occur from oil and gas operations in the area. BLM asserts that:

> [S]ome chemicals emitted to the atmosphere during oil and gas development have the potential for health effects with certain types, levels, and durations of exposure. However, emitted concentrations diffuse rapidly with increasing distance from the pad, and exposures to members of the public are of much short [sic] duration than those associated with

> chronic health effects. Consequently, no actual, existing health effects of oil and gas activities have been documented for the planning area.

AR185047; *see also* AR185943 ("To date, no studies have documented significant cancer-based or noncancer-based public health risks from oil and gas operations using emissions rates and operational practices typical of current development in the CRVFO."). This is incorrect. People do indeed live in close proximity to current and expected oil and gas activities in the planning area. To assume their exposure will be short-lived, and that health effects and risks in the region from oil and gas activities have been amply demonstrated, is simply unsupported by the record.

The U.S. Census Bureau counts 6,166 people living within a mile of existing wells in the CRVFO. AR186673. A 2007 study found 1,179 residential parcels within 500 yards of at least one well in Garfield County, in the western half of the CRVFO area. AR218451; *see also, e.g.,* AR218472 (showing resident with 19 wells within a quarter mile of his home, and a fracking waste disposal pit at the end of his driveway) AR218464, 218458, 218461.Moreover, current conditions do not reflect predicted increases in both population and gas facilities in the planning area. As the EIS itself acknowledges:

> Trends in the CRVFO include a rapidly increasing population and burgeoning natural gas development. Natural gas development within the Piceance Basin has created a rapidly expanding WUI [wildland-urban interface] which can include significant sources of point and nonpoint pollution.

AR184856.

BLM also ignores the body of record evidence from regional health studies identifying human health risks from oil and gas operations. For instance, a study in rural Colorado found that as the number of natural gas wells within a 10-mile radius of pregnant women's homes increased, so too did the likelihood of their babies having congenital heart defects and possibly neural tube defects. AR212386-400. Another study based on air sampling from oil and gas

operations found that polycyclic aromatic hydrocarbons ("PAHs") in Garfield County were three to seven times higher than levels shown to impair mental development in children, concluding that pollution from oil and gas activity "may have clinical significance." AR208602. PAHs are known carcinogens and endocrine disruptors linked to preterm births, low birth weight, and adverse effects on mental development, intelligence, and behavior. AR220090, 220110, 212837. Yet another study, examining water samples from a drilling-dense region of Garfield County, found that most fracking sites exhibited more estrogenic activities than reference sites with less nearby drilling. AR209662; *see also* AR209663 ("Exposure to estrogenic chemicals has been linked to decreased fertility, increased cancer incidence, impaired gonadal development, and more"). And in Garfield County, "[h]igh concentrations of ozone precursors (VOCs and nitrogen oxides) have been observed in areas with high natural gas production," and 8-hour average ground level ozone at a nearby monitoring station exceeded proposed national standards. AR220109-10 (noting that even short-term exposure to ground-level ozone can damage lung function and cause airway inflammation in healthy adults and irreversible loss of lung capacity in children); *see also* AR209675 (oil and gas production was the principle source for volatile organic compounds (VOCs) in an urban setting in Colorado that were "a significant source of ozone precursors").

BLM also failed to take a hard look at the first-hand reports of area residents, reports of a kind that EPA says often serve as the first indication of subsurface contamination. AR218986. For example, residents within a half-mile of wells have reported health symptoms contributing to deterioration of their overall health and quality of life. AR186671, 220069; *see also* Evenson Decl. ¶¶ 4-9; Arrington Decl. ¶¶ 4-8; Tibbetts Decl. ¶¶ 4-10; Smeltzer Decl. ¶¶ 5-9, 13. Some residents tested positive for ethylbenzene and xylenes in their blood and urine, while others

reported shortness of breath, dizziness, headache, throat problems, and anemia. AR209553-54, 209564-65; *see also* AR219917. Sampling triggered as a result of a resident's complaints about odors emanating from a drill waste pit near her home revealed levels of benzene and xylenes greater than EPA risk levels, along with other volatile organic compounds ("VOCs"). AR208756-57; *see also* AR212142 (similar). Moreover, citizen field sampling led to the discovery of widespread hydrogen sulfide releases near drilling sites. AR209562. In another example, a retired engineer witnessed an overturned produced water truck on a local road, a spill at an injection well, and a hydrocarbon pipeline spill at a gas compressor plant. AR209552. Still another resident described how pristine the air was prior to the drilling boom, and how his family now suffers hearing, nasal, and throat problems, as well as chronic rashes and deteriorating health. AR209550. He further reports, "many of our friends were forced to move out of the area because of breathing problems and other ailments." *Id*.

The record thus demonstrates not only significant health risks from oil and gas activity in the CRVFO region but also reported impacts, both of which required a hard look that BLM failed to provide for the public and decisionmakers. The record also shows it was feasible for BLM to provide the type of analysis needed. The preparation of a Health Impact Assessment ("HIA") is one tool BLM could have used to meet its NEPA obligations—which the agency failed to apply despite the urging of six cooperating agencies and Citizen Groups. *See, e.g.* AR213076, 186665-67, 217924, 21136, 218509, 218415, 023638, 025156, 025700, 218496. Specifically, the EPA, the U.S. Department of Health and Human Services, and other government authorities recommend the use of HIAs to provide this needed analysis. AR186666.[21] Elsewhere, the Bureau of Indian Affairs has incorporated an HIA into the

[21] *See also* EPA, Health Impact Assessment (HIA) Resource and Tool Compilation, available at: https://cfpub.epa.gov/si/si_public_record_report.cfm?direntryid=334197; AR209482 (citing

programmatic EIS for oil and gas activities. AR209488. BLM's failure to perform an HIA, here, is without justification.

2. BLM's analysis of potential health impacts provides virtually no useful information to the public and decisionmakers.

When BLM does discuss potential health effects from RMP alternatives, it offers only vague generalities instead of the hard look NEPA mandates. *Cf. Kern*, 284 F.3d at 1075. The agency's unquantified comparisons of the proposed alternative to other studied management alternatives fail to mention any specific health risks. *See* AR185942-46. Rather, the entire assessment of impacts from oil, gas, and other mineral extraction associated with the RMP consists of a single sentence affirming the risk to health, in which BLM asserts there will be "more wells than Alternative A … potential risks to public health from accidental exposure to hazardous materials be [sic] higher under this alternative." AR185945.

A companion discussion of the impacts on public health from air quality management uninformatively reports that the RMP "would reduce the already low risk to humans" and "result in impacts to air quality below those of Alternatives A and D and comparable to those of Alternative C." AR185944. In the same vein, for impacts from water resources management, BLM's analysis simply states—without explaining anything about the potential health implications—that RMP impacts would be similar to Alternative A's, with some unelaborated additional protection for municipal drinking water. *Id.* The analyses for other management regimes, for example Alternative A's, provide only vague statements revealing nothing about the magnitude or nature of impacts, and includes assertions like: "would increase the potential for releases of hazardous materials," and "potential risks … would be statistically related to the amount of oil and gas activity," and "may result in greater human exposure to air toxics."

Centers for Disease Control, Health Impact Assessment, available at: https://www.cdc.gov/healthyplaces/hia.htm).

AR185943-44. These assertions convey essentially nothing that NEPA requires about the nature and possibility of health risks faced by residents from a doubling of federal wells in the area.

BLM's impact analysis also wrongly ignores a large and growing body of literature about the types of chemicals used in and released by oil and gas production, and the broad array of health problems with which they are associated. Oil and gas activities generate toxic air emissions and large quantities of harmful waste. AR217837-38, 186632. The pollution comes from a variety of sources, including the constituents of natural gas itself, hazardous chemicals used in well development and hydraulic fracturing, contaminated water forced to the surface, and diesel exhaust from trucks and generators. AR219913. Emissions include methane, nitrogen oxides ("NOx"), and VOCs, hazardous air pollutants ("HAPs"), and particulate matter into the air. AR184827, 184830-31, 185044; *see also* AR213533, 217838, 219913, 220109-10. According to the EPA, the oil and gas industry is "the largest industrial source of [VOCs]." AR186661. The U.S. General Accounting Office ("GAO") found that completions of fracked wells are particularly extreme emission sources, releasing 230 times more VOCs and methane than conventional well completions. AR206829.

Hazardous pollutants in drilling and fracking by-products include benzene, toluene, ethylbenzene, and xylene—which are carcinogens known to have serious impacts on human health. AR213536. Many chemicals used in fracking and returned to the surface remain unknown to the public, held in secret as proprietary by the industry, AR211735-36—which BLM acknowledges. AR185042. Notably, waste containing these agents may be disposed of by underground injection, stored in open-air surface pits, buried, spread, sprayed, evaporated, or landfilled, AR186626-28, 186632, 208732, 208754-566, creating a pollution risk for surface and groundwater as well as soil. AR079226, 219923, 216457-58. A recent study corroborates this

risk, finding systematic evidence for methane contamination of drinking water from shale gas extraction, indicating that fracking waste—including a cocktail of mystery chemicals—is migrating from fracked wells into drinking water. AR216819-20.

These chemicals can be extremely harmful. A private organization that gleaned fracking fluid composition information from a variety of public sources and reported that of the 362 identifiable chemicals, 55 percent were associated with brain or nervous system damage, and 47 percent with harm to the endocrine system; others caused cancer, organ damage, asthma, convulsions, and death. AR198307.

Chemicals in air emissions from fracking operations can affect the brain, central nervous system, liver, endocrine system, immune system, cardiovascular system, respiratory system, and metabolic systems, and may affect reproductive health and fetal development, as well as the skin, eyes and other sensory organs. AR208602-04, 211601-23, 212968-76, 213540-45, 219913-14, 213633-34, 216453, 216459-66, 216474-75, 217030-31, 209782-89, 212386-4, 209662-70, 198305-10, 217893-94, 219918, 219922, 220084, 220087-88. Many are also carcinogens. AR213544, 219918, 219922, 220055, 217894. For example, ground-level ozone is increasingly a concern in oil and gas producing regions and is linked to severe health conditions. AR209677, 220109, 213628, 213630, 186661, 186675. In addition, hydrogen sulfide emissions from oil and gas operations can harm human health even at low concentrations. AR185048, 213633, 216459.

However harmful these chemicals are for the healthy adult population, they are even more harmful to children and those with already compromised health. AR219922, 219929, 215481, 216088, 213544-45, 216088, 217031. Children's lower body weight, ongoing growth, greater time outdoors contacting soil and other vectors, and higher per-weight intake translate to greater vulnerability to pollutants, leading the Colorado Department of Public Health and the

Environment ("CDPHE") to stress that "adults need as much information as possible to make informed decisions regarding their children's health." AR207206. BLM, however, failed even to discuss these and other vulnerabilities in its public health effects analysis, let alone provide the hard look needed for informed decisionmaking.

3. Applying adaptive management and complying with legal requirements fail to cure defects in BLM's analysis of public health impacts.

A separate EIS section on air quality effects also broaches human health, but erroneously concludes that features of the RMP will eliminate significant public health impacts. The RMP would defer many decisions about air quality measures to subsequent "adaptive management." AR185212. However, the adaptive management it proposes offers no assurance of avoiding all such impacts. Moreover, relying on the industry's compliance with a series of state and federal laws, as sufficient to avoid significant public health impacts, cannot be reconciled with the record in this case.

Numerous aspects of BLM's purported adaptive management are so subjective and non-committal that they cannot assure any health outcomes. For example, the agency claims that "[t]he authorized office might direct the operator to change the level and type of dust abatement," and that operators must use reduced-emission technologies, but that exemptions may be granted if compliance is "impracticable." AR185212. Elsewhere BLM reveals that the incorporated air "protocol" monitoring network will be established only later, where a need is identified, and contingent on funding. AR188795, 188797.

Even if BLM were proposing an effective adaptive management regime, with guaranteed monitoring, reliable triggers, and outcome-assuring commitments, that would not excuse failure to disclose and consider the cumulative effects of that approach taken together with other gas

production in the region. "All environmental analyses required by NEPA must be conducted at the earliest possible time." *New Mexico*, 565 F.3d at 707. And NEPA requires that they include "past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999). BLM's failure to provide such a disclosure now, when deciding how much of the planning area to expose to potential oil and gas development, and what basic restrictions to impose, represents a textbook NEPA violation.

Moreover, BLM's failure to examine the potential range of health impacts from the RMP is not excused by the assumption that oil and gas activities will comply with legal requirements. *See* AR185212. In the first place, compliance with extrinsic legal standards does not ensure against significant environmental impacts. *See, e.g., WildEarth Guardians*, 104 F.Supp.3d at 1227–28 ("It is the duty of [the federal permitting agency] to determine whether a mining plan modification would contribute to such an effect, whether or not the mine is otherwise in compliance with the Clean Air Act's emissions standards"); *see also Edwardsen v. U.S. Dept. of Interior*, 268 F.3d 781, 789 (9th Cir. 2001) ("fact that the area will remain in compliance with the [air quality standards] is not particularly meaningful;" the relevant issue for NEPA review is whether the decision will result in air degradation). Additionally, some legal requirements for oil and gas activity expressly do not address human health. *See, e.g.,* AR209504 (Colorado Oil and Gas Conservation Commission (COGCC) report noting that setback rules from buildings are "not intended to address potential human health impacts associated with air emissions related to oil and gas development. The Commission, after consulting with the [CDPHE], believes that there are numerous data gaps related to oil and gas development's potential effect on human health and that such data gaps warrant further study."). The EIS offers no analysis of the effect of

legal compliance on the full suite of potential health effects. Nor does it account for the health effects of some inevitable level of non-compliance. *See, e.g.,* AR211672 (analysis of numerous spills of "produced water" chemical waste from fracking in Colorado county concluding that "[i]t is also unclear how the determination of spill 'resolution' as defined by COGCC affected any actual impacts to groundwater.").

More fatally, BLM minimizes the numerous exemptions from legal requirements for oil and gas development. The agency references, for instance, compliance with National Emission Standards for Hazardous Air Pollutants ("NESHAPS"), AR185212, without noting that much oil and gas development is exempt from compliance with hydrogen sulfide standards.[22] Other examples include: the NESHAPS exemption for many oil and gas facilities, AR218459; a Clean Air Act exemption for condensate storage tanks despite voluminous VOC releases, AR218460; that small glycol dehydrators are exempt from federal emissions controls AR202432; or that hydraulic fracking is exempt from the federal Safe Drinking Water Act AR204950; *see also* AR206793 (GAO report noting that "key exemptions or limitation in regulatory coverage" affect applicability of federal environmental and public health laws to unconventional oil and gas industry). Complying with legal mandates rife with loopholes favoring oil and gas extraction fails to provide a reasonable assurance against significant impacts to human health.

II. BLM FAILED TO CONSIDER A REASONABLE RANGE OF ALTERNATIVES

BLM's narrow range of alternatives violates NEPA by impermissibly omitting any option that would meaningfully limit oil and gas leasing and development within the planning area, and safeguard other multiple use values. An EIS must include "alternatives to the proposed action." *Fuel Safe Wash. v. FERC* (389 F.3d 1313, 1323 (10th Cir. 2004) (quoting 42 U.S.C. §

[22] *See* EPA, Modifications to the 112(b)1 Hazardous Air Pollutants, available at: https://www3.epa.gov/airtoxics/pollutants/atwsmod.html.

4332(2)(C)(iii)). Consideration of alternatives is the "heart" of the NEPA process. *Id.* The agency must "[r]igorously explore and objectively evaluate all reasonable alternatives." *Id.* (quoting 40 C.F.R. § 1502.14(a)). Through this process, BLM must gather "information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned." *Greater Yellowstone Coal. v. Flowers*, 359 F.3d 1257, 1277 (10th Cir. 2004); *see also Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Commn.*, 449 F.2d 1109, 1128 (D.C. Cir. 1971) (stating "[c]learly, it is pointless to 'consider' environmental costs without also seriously considering action to avoid them."). Here, BLM failed to consider alternatives that would ensure meaningful portions of the planning area would avoid the environmental costs of oil and gas exploration and development.

For example, it would have been entirely reasonable for BLM to consider an alternative eliminating oil and gas leasing in areas determined to have only moderate or low potential for oil and gas development. The reasonableness of the alternatives is measured in part by the agency's statutory mandate. *Westlands Water Dist. v. Dep't of the Interior*, 376 F.3d 853, 866 (9th Cir. 2004). Reasonableness is also judged with reference to an agency's objectives for a particular action. *See Dombeck*, 185 F.3d at 1174-75. By both criteria, BLM had a duty to consider closing far more of the planning area to leasing than it did.

Preservation of public lands from damage is squarely within the mandate of FLPMA, BLM's organic act. FLMPA directs that land use plans, *inter alia*, "preserve and protect certain public lands in their natural condition" 43 U.S.C. § 1701(a)(8). More broadly, the statute requires that BLM's land use plan "observe the principles of multiple use." 43 U.S.C. § 1712(c)(1). "Multiple use," in turn, "requires management of the public lands and their numerous natural resources so that they can be used for economic, recreational, and scientific purposes without the

infliction of permanent damage." *Public Lands Council v. Babbitt*, 167 F.3d 1287, 1290 (10th Cir. 1999). In short, BLM has a statutory mandate to consider alternatives that reduce or eliminate the possibility of permanent damage from oil and gas leasing and development.

The reasonableness of such alternatives is also evident in the RMP's asserted purpose and need. As described by BLM, "[t]he purpose of the revision to the current RMP is to ensure that BLM lands are managed … under the principles of multiple use and sustained yield." AR184603. In defining the "need" for a plan revision, BLM identified seven issues, only one of which is "[m]anaging energy development, particularly regarding the designation of lands available for fluid minerals leasing"; the remaining six issues concern other multiple use values, all benefited by restricting the footprint of allowable leasing: recreation, special designations, vegetation, habitat loss and fragmentation, and surface water and groundwater resources. *Id.*

CEQ has explained that, when deciding how to balance competing resource uses, NEPA requires consideration of alternatives that strike a range of protections. For example, in reviewing "a proposal to designate wilderness areas within a National Forest, … [a]n appropriate series of alternatives might including dedicating 0, 10, 30, 50, 70, 90, or 100 percent of the Forest to wilderness." 46 Fed. Reg. 18026 (March 23, 1981);[23] *see also State of Cal. v. Block*, 690 F.2d 753, 767-68 (9th Cir. 1982) (finding that the Forest Service violated NEPA by refusing to consider an alternative designating more than one-third of planning area as wilderness).

Despite a mandate to protect other multiple uses from oil and gas related damage, BLM unlawfully failed to consider reasonable alternatives that would meaningfully reduce oil and gas leasing and development. Of the 701,200-acre mineral estate to be managed through the RMP, no alternative closes more than 179,700 acres (or 25.7 percent) to future leasing—even though,

[23] CEQ, 40 Most Asked Questions Concerning NEPA Regulations (March 23, 1981), available at: https://energy.gov/sites/prod/files/G-CEQ-40Questions.pdf.

in each alternative, a significant portion of the areas left open to development have a low potential for development. AR184620. And no alternative closes more than 6,000 of the 147,500 high occurrence potential acres (or 4.1 percent) to future leasing. AR184621.

BLM's rationale for refusing to affirmatively protect larger portions of the planning area actually supports more protective alternatives. The agency claimed there was no expectation of new oil and gas leasing or development throughout most of the management area. AR095475-76, 185778 (predicting that 99 percent of future development will occur in high occurrence potential area—which comprises 20 percent of the management area). Were that accurate, there would be no reason to leave the moderate and low potential areas open to leasing, thereby exposing public land users and nearby residents to the uncertainty and risk of future fracking, as well as precluding BLM from managing these lands for other uses or values, such as for the protection of wilderness characteristics. Closing the areas would result in essentially no loss to the oil and gas industry, but would benefit the public.

Developments in fracking have, however, repeatedly confounded predictions for the region. Leaving areas open to leasing allows the prospect that a possible future lease purchaser would acquire the exclusive right to "use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold." 43 C.F.R. § 3101.1-2. It also ignores the speculative nature of oil and gas leasing on public lands. For example, in 2015, BLM lands in Colorado had 3,300,752 acres under lease, yet only 1,483,943 acres in production.[24] In other words, over 1.8 million acres of public lands in Colorado are committed to oil and gas leasing—at the exclusion of other multiple use values—where absolutely no productive value is recovered by the state or its residents.

[24] *See* BLM, Oil and Gas Statistics, at Tables 3 and 7, available at: https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics (Exhibits 19, 20).

As the Tenth Circuit recognized, "[i]f all the competing demands reflected in FLPMA were focused on one particular piece of public land, in many instances only one set of demands could be satisfied. A parcel of land cannot both be preserved in its natural character and mined." *Rocky Mtn. Oil & Gas Ass'n v. Watt,* 696 F.2d 734, 738 n. 4 (10th Cir.1982). The reality is that leaving vast acreage open to future leasing entails benefits to some users and detriments to others, trade-offs of exactly the kind that NEPA demands be explored, analyzed, and disclosed to decisionmakers and the public through EIS alternatives. *See* 42 U.S.C. § 4331(b)(3) (recognizing BLM must use all practicable means to "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences"). Other federal land managers in the region have shown the feasibility of closing acreage with low potential for oil and gas development to leasing. AR186685-86. In fact, U.S. Forest Service managers recently issued a decision closing over a million acres of the White River National Forest to future leasing, including lands where the CRVFO manages the mineral estate.[25] The Forest Service decision closed 1,067,000 acres because of low potential and 61,000 acres of high potential lands to "maintain the natural character of the landscape and continue to protect the outstanding wildlife and recreation values of these lands." *Id.* BLM has the authority, and indeed the obligation, to consider reasonable alternatives that would protect non-mineral resource values and balance diverse resource uses. *See* 43 U.S.C. § 1702(c); *Norton v. S. Utah Wilderness All.*, 542 U.S. 55, 58 (2004) (holding FLPMA does not mandate that every use be

[25] *See* White River National Forest, Final Record of Decision, Oil and Gas Leasing on Lands Administered by the White River National Forest, (Dec. 3, 2015), at 6, available at: http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/61875_FSPLT3_2595815.pdf (Exhibit 21); *see also* White River National Forest Oil and Gas Leasing Final EIS (Dec. 2014) at 31, available at: http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/61875_FSPLT3_2395824.pdf (confirming overlap between the Forest Service decision and the CRVFO) (Exhibit 22).

accommodated on every acre). BLM's refusal to consider a reasonable range of alternatives violated the agency's mandate under FLPMA and the requirements of NEPA.

CONCLUSION

For the foregoing reasons, Citizen Groups respectfully request that this Court declare that BLM's approval of the Colorado River Valley RMP and EIS violates NEPA, FLMPA and their implementing regulations, vacate and remand relevant portions of BLM's EIS, and suspend and enjoin BLM from any further oil and gas leasing pending BLM's full compliance with NEPA.

Respectfully submitted this 19th day of May 2017,

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UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
CERTIFICATE OF SERVICE (CM/ECF)

I hereby certify that on May 19, 2017, I electronically filed the foregoing PLAINTIFFS' OPENING MERITS BRIEF with the Clerk of the Court via the CM/ECF system, which will send notification of such filing to other participants in this case.

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CERTIFICATE OF COMPLIANCE WITH RULE 32(a)

This brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) because this brief contains 12,968 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

Dated this, 19th day of May, 2017.

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