



October 27, 2014

*By Certified Mail/Return Receipt Requested and
By E-mail Attachment*

Jesse Juen, State Director
Bureau of Land Management
New Mexico State Office
301 Dinosaur Trail
Santa Fe, NM 87508
jjuen@blm.gov

Gary Torres, Field Manager
Farmington Field Office
Bureau of Land Management
6251 College Blvd., Suite A
Farmington, NM 87492
gtorres@blm.gov

RE: Concerns over Farmington Field Office Ongoing Approval of Mancos Shale Oil and Gas Development; Comments on Outstanding Drilling Permits; Supplemental Comments on Proposed Resource Management Plan Amendments; Request to be Mailed Public Notices Pursuant to 40 C.F.R. § 1506.6(b)(1)

Dear Mr. Juen and Mr. Torres:

WildEarth Guardians, San Juan Citizens Alliance, Chaco Alliance, and Western Environmental Law Center write to convey significant concerns over the Bureau of Land Management (“BLM”) Farmington Field Office’s ongoing approval of permits authorizing horizontal drilling and fracking of Mancos Shale/Gallup Formation wells in the San Juan Basin of northwestern New Mexico. **By our estimate, the BLM has approved approximately 100 new drilling permits for Mancos shale drilling and fracking. Approval of these permits is wholly inappropriate, contrary to law, and must cease immediately.**

The BLM’s rampant approval of Mancos shale drilling and fracking is not only threatening the region’s air, water, fish, and wildlife, but undermining our nation’s progress in reducing greenhouse gases and combating climate change. Importantly, BLM’s approvals are putting the region’s cultural heritage at risk, endangering significant landscapes like Chaco Culture National Historical Park and its outliers, and other areas critical for preserving, understanding, and promoting indigenous presence in the region. Despite repeated calls on the BLM for restraint, Mancos shale drilling and fracking is encroaching closer than ever to Chaco.

Significantly, the BLM’s approval of new drilling permits, or applications for permits to drill (“APDs”), is occurring despite, extreme uncertainty and controversy over the timing, pace, location, and full prospective magnitude of this drilling, including risks associated hydraulic fracturing, or fracking, and despite the BLM’s admission that the now 11 year-old resource

management plan (“RMP”) never contemplated such development. As BLM has conceded, in its notice of intent to prepare an EIS and to amend the Farmington RMP to address the development of Mancos shale wells, “additional impacts may occur that previously were not anticipated in the RFD [Reasonably Foreseeable Development Scenario] or analyzed in the current 2003 RMP/EIS[.]” 79 Fed. Reg. at 10,548 (Feb. 25, 2014).

Even worse, it appears the BLM is approving these APDs behind closed doors, failing to provide adequate public notice, let alone an opportunity to review and comment on drilling decisions before they are completed, pursuant to NEPA. *See* 40 C.F.R. § 1506.6(b). Moreover, even when we have learned of the possible existence of environmental assessments (“EAs”) for APD, the agency has failed to ensure these documents are actually available to the public. It is only after we made repeated requests of the BLM that we were provided electronic copies of the aforementioned EAs. BLM’s actions are deeply troubling, evidencing a lack of transparency and capitulation to the oil and gas industry’s rush to exploit the Mancos shale despite BLM’s awareness over public concerns.

To this end, we provide the following letter to the BLM and request that it be considered by the agency as:

- A petition for agency action, pursuant to the Administrative Procedure Act (“APA”), 5 U.S.C. § 555(b), requesting a moratorium on the approval of new APDs and leases authorizing horizontal drilling of the Mancos shale pending completion of the Farmington RMP Amendment.
- Comments on outstanding proposed EAs and/or categorical exclusions for APDs targeting horizontal drilling of the Mancos shale, including, but not limited to, the following EAs: F010-2014-0191, F010-2014-0217, F010-2014-0246, F010-2014-0250, F010-2014-0254, F010-2014-0265, F010-2012-0268, F010-2014-0272, F010-2014-0274;
- Supplemental comments on the BLM’s proposed RMP Amendment for the Farmington Field Office, notice of which was published in the Federal Register in February of 2014, *see* 79 Fed. Reg. at 10,548 (Feb. 25, 2014);
- A request, pursuant to 40 C.F.R. § 1506.6(b)(1), that the signatories to this letter be mailed notice of the availability of environmental documents prepared under NEPA, including any EAs, Environmental Impact Statements, Findings of No Significant Impact (“FONSI”), and related decision documents, related to any APD approvals in the Farmington Field Office, including, but not limited to, the aforementioned APDs; and
- A request, pursuant to 40 C.F.R. §§ 1500.1(b), 1500.2(d), and 1506.6(a), to provide for public review and comment of EAs and related decision documents related to any APD approvals in the Farmington Field Office, including, but not limited to, the aforementioned APDs, to foster informed agency decision-making and public participation.

To this end, we request the BLM immediately impose a moratorium on the issuance of new APDs and leases that aim to exploit the Mancos shale pending completion of the RMP amendment. This request is made pursuant to the APA, which provides that any person may appear before an agency for the “presentation, adjustment, or determination of an issue, request or controversy in a proceeding[.]” 5 U.S.C. § 555(b).

A moratorium is justified in light of BLM’s own acknowledgement that it does not fully understand the direct, indirect, and cumulative environmental impacts that will result from approval of additional APDs. As provided by BLM’s own regulations, it is the agency’s duty, pursuant to the Mineral Leasing Act (“MLA”), “to promote the orderly and efficient exploration, development and production of oil and gas.” 43 C.F.R. § 3160.0-4. This duty is reinforced by the Federal Land Policy and Management Act (“FLPMA”), which states BLM “shall [] take any action necessary to prevent unnecessary or undue degradation of the lands.” 43 U.S.C. § 1732(b).

Pending completion of the RMP amendment, BLM simply cannot provide assurances that such orderly and efficient oil and gas activity is taking place or that unnecessary and undue degradation is being prevented. Instead, BLM undermines its own credibility and the public’s trust by facilitating what appears to be a “wild west” boom mentality—a mentality that does not serve the public’s long-term interest in responsible oil and gas development or the conservation of our public lands.

A moratorium is also compelled by NEPA’s implementing regulations, which provide that “[a]gencies shall not commit resources prejudicing selection of alternatives before making a final decision ([40 C.F.R. §] 1506.1)” and, further, that analyses “shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.” 40 C.F.R. §§ 1502.2(f), 1502.2(g), and 1506.1. As the Tenth Circuit has held: “Agencies are to perform this hard look before committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values.” *Sierra Club v. Hodel*, 848 F.2d 1068, 1093 (10th Cir. 1988).

Pursuant to the APA, and as compelled by FLPMA, NEPA, and the MLA, we therefore request the BLM act immediately to impose such a moratorium. Below, we detail further our concerns:



Above, horizontal drilling occurring in the Farmington Field Office near Lybrook, New Mexico, Photo taken from U.S. Highway 550 in August of 2014. Below, flaring of gas at Mancos shale well (photo by Carlan Tapp).





Flaring at Mancos shale wells in the Counselor/Lybrook area of San Juan, Rio Arriba, and Sandoval County area of New Mexico. Photos by EcoFlight.





Above, Mancos shale fracking operation. Below, oil pipeline construction associated with Mancos shale development. Photos by Carlan Tapp.



Background

The 2003 Farmington RMP never contemplated commercially viable development of the Mancos shale—whether for oil or gas and whether for exploration or full-field production—utilizing horizontal drilling techniques. The Reasonably Foreseeable Development Scenario (“RFDS”), which was prepared in 2001 in support of the RMP explicitly stated that:

Horizontal drilling is possible but not currently applied in the San Juan Basin due to poor cost to benefit ratio. If horizontal drilling should prove economically and technically feasible in the future, the next advancement in horizontal well technology could be drilling multi-laterals or hydraulic fracturing horizontal wells. Multilaterals could be one, two or branched laterals in a single formation or single laterals in different formations. Hydraulic fracturing could be a single fracture axial with the horizontal well or multiple fractures perpendicular to the horizontal well. These techniques are currently complex and costly, and therefore typically inappropriate for most onshore U.S. reservoirs. Comprehensive engineering and geologic research will be required in the near future in order for these techniques to become viable within the 20-year time frame anticipated by this RFD.

BLM, *Oil and Gas Resource Development for the San Juan Basin, New Mexico, a 20-year, Reasonably Foreseeable Development (RFD) Scenario Supporting the Resource Management Plan for the Farmington Field Office, Bureau of Land Management* (July 2, 2001) (hereafter “RFDS”) at 8.3. In other words, at the time the RFDS was prepared and the RMP finalized, horizontal drilling and fracking was not viable.

Although the RFDS makes clear that viable shale gas and oil development using horizontal drilling would not occur within 20 years, the RFDS nevertheless contemplated 300 Mancos shale gas and oil wells, including development and exploration wells. *See* RFDS at 5.27. However, the RFDS contemplated “behind pipe” access to Mancos shale reserves through vertically drilled wells into the Dakota formation. RFDS at 5.27. In other words, the RFDS considered access to the Mancos shale only as an afterthought to drilling vertical Dakota wells, and certainly did not contemplate horizontally drilled wells into the Mancos shale. To the extent that the RFDS contemplated development only of the Mancos shale, it was only in a region called the “fractured Mancos oil play” in the southeastern portion of the Basin, which was described only as “probable” development. *Id.* Again, the RFDS did not contemplate horizontal drilling, whether for development or exploration. Moreover, the RFDS is neither a planning decision pursuant to FLPMA or the MLA, nor an environmental review pursuant to NEPA. That the RFDS contemplated limited “behind pipe” access to Mancos shale reserves does not obviate BLM’s duty to satisfy substantive and procedural planning and management mandates pursuant to FLPMA and NEPA, or to take a hard look at impacts and to consider a range of alternatives pursuant to NEPA, before such development can proceed.

WPX (formerly Williams Production), a major oil and gas producer in the San Juan Basin, has confirmed that the RFDS never contemplated the impacts of horizontal drilling of the Mancos shale, whether for exploration or development. The company recently stated in its

Middle Mesa development proposal that, “[w]hen the [RMP] FEIS was prepared, horizontal drilling had been attempted as an experimental technique in the San Juan Basin, but faced technical problems and not yet been proven economically viable[.]” Exhibit 1, Williams Production Co., “Proposal for Rosa Middle Mesa Development” at 3. BLM has concurred, noting that only the recent advancement in horizontal drilling technology that “has made Mancos stand-alone wells economically viable,” explaining:

[A]t the time of the RFD[S] report, horizontal drilling and multi-stage hydraulic fracturing was in its infancy, since then, the technology has evolved to be more efficient and less costly as in the past. Horizontal drilling and multi-stage fracturing is a common practice throughout the U.S. even though the RFD[S] only hinted at its future success and usage.

Exhibit 2, BLM, “Unconventional gas reservoirs, hydraulic fracturing, and the Mancos Shale” (Nov. 30, 2011) at unnumbered p. 6. Here, “hinting” at environmental impacts does not suffice to demonstrate that such impacts were fully analyzed and assessed as required under NEPA or that BLM—whether through the RFDS, which is not a NEPA document, or the Farmington RMP’s accompanying EIS—sufficiently considered the impacts of this practice, demonstrated that there would be no significant impacts, or considered alternatives to either prohibit such drilling (i.e., a no action alternative) or to ensure the orderly and efficient development of the formation through these drilling techniques. Neither the RFDS, the Farmington RMP, nor the RMPs accompanying EIS demonstrates that the BLM adequately considered timing, pace, location, and full prospective magnitude—in particular cumulative impacts—of Mancos shale oil or gas development, and, in particular, the horizontal drilling and fracking technologies and associated infrastructure now being used to develop Mancos shale, in the Farmington Field Office. In light of the shortcomings of the RFDS, it is clear that both the RMP and EIS are inadequate under FLPMA, NEPA, and the MLA.

The BLM has conceded as much. In February of this year, the agency published a notice of intent to prepare an RMP Amendment and an EIS to account for the environmental impacts of horizontal drilling and fracking of the Mancos Shale/Gallup Formation in the Farmington Field Office. *See* 79 Fed. Reg. at 10,548 (Feb. 25, 2014). The aim of the RMP Amendment is to ensure that resources are sufficiently protected under FLPMA and other relevant requirements. In so doing, BLM can best ensure the “orderly and efficient exploration, development and production of oil and gas.” 43 C.F.R. § 3160.0-4. Unless and until this RMP Amendment and EIS are completed, there exist no sufficient environmental considerations of horizontal drilling and fracking of the Mancos shale.

Although the BLM has asserted that approval of Mancos shale APDs is appropriate given its contention that such wells are for “exploration,” apparently believing that the RMP somehow contemplated horizontal drilling for Mancos shale for exploration purposes. The BLM has indicated it believes that until the Mancos wells are included within a unit agreement, they are considered exploratory or “unproven.” Nothing in the BLM’s oil and gas management regulations indicates that inclusions within a unit agreement is necessary for a well to be considered producing, or otherwise necessary to demonstrate that development has moved beyond exploration. Given that 100 Mancos shale wells have been developed in a fairly

concentrated area, it seems dubious that companies are still “exploring.” Indeed, companies, like Encana, have submitted to the BLM detailed plans for Mancos shale development, including oil and gas wells and pipelines. *See* Exhibit 3, Encana Plan of Development (Updated April 30, 2014). Companies are also seeking approval from the BLM for extensive oil pipeline development in the area. *See* Exhibit 4, Saddle Butte San Juan Midstream, LLC, “Application for Pipeline Right of Way,” Application No. NMNM 133052 (July 11, 2014). Not only that, but the BLM has proposed to lease lands in order to facilitate production of oil from the Mancos shale. *See* Exhibit 5, BLM, “January 2015 Competitive Oil and Gas Lease Sale,” EA No. DOI-BM-NM-F010-2014-0227 (Oct. 22, 2014) (analyzing impacts of leasing meant to address drainage of oil from nearby producing Mancos shale wells). Regardless, the BLM’s assertion rings hollow as the RFDS never contemplated horizontal drilling, whether or not for exploration.

I. The BLM Cannot Approve Proposed APDs Absent Sufficient NEPA Analysis

In spite of the failure of the RMP and RFDS to account for horizontal drilling of Mancos shale, the Farmington Field Office has in the last year approved numerous APDs authorizing such development. By our measure, nearly 100 wells tapping the Mancos shale with horizontal drilling have been approved by the BLM. Distressingly, these authorizations expressly relied upon the 2003 RMP and RFDS, even in the face of its obvious flaws under NEPA. **To put it simply, these authorizations occurred in violation of FLPMA, the MLA, and NEPA.**

Making matters worse, the Field Office has proposed to approve several more APDs to authorize the horizontal drilling and fracking of Mancos shale. According to the BLM’s NEPA log for the Farmington Field Office (available online at: http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/nepa_logs0/nepa_logs_2014.Par.42933.File.pdf/Farmington_NEPA_Log_2014.pdf), these APDs are being analyzed in the following EAs:¹

EA No.	Title
F010-2014-0191	Escrito A28-2409 Nos 01H and 02H and Escrito M30-2
F010-2014-0217	Logos Operating, LLC Sarah B 1H, 2H
F010-2014-0246	Chaco 2306-08E Nos. 197H, 198H, 266H, and 267H Oil
F010-2014-0250	Lybrook P28-2307 Well Pad, Access Road, and Pipeli
F010-2014-0254	Chaco 2408-36O Nos. 133H and 134 H Oil and Natura
F010-2014-0265	Escrito F12-2407 No. 01H and Escrito M12-2407 Nos

¹ Additional EAs for horizontal drilling of the Mancos shale may be under review by the BLM. We hereby request that the BLM consider this letter as providing comments on any outstanding EA being developed by the agency for APDs that would authorize the horizontal drilling of Mancos shale.

F010-2012-0268	Encana's Lybrook D22-2206 1H and 2H
F010-2014-0272	Cluster 20 Lybrook E13-2306
F010-2014-0274	Chaco 2408-33D Nos. 112H, 113H, 118H, and 119H

Given the express limitations of the current RMP and the underlying the RFDS to account for the environmental impacts of horizontal drilling of Mancos shale, the BLM's proposed approval of these APDs, appears to be completely unsupported under NEPA and FLPMA. Put simply, the BLM lacks a comprehensive RMP and environmental analysis of horizontal drilling of Mancos shale, necessary to properly guide development and to ensure that the impacts of leasing, drilling, fracking and other oil and gas development activities, together with other past, present, and reasonably foreseeable impacts of management actions in the Farmington Field Office, will ensure the orderly and efficient development of the oil and gas resource—critical to preventing waste, such as methane—and will prevent unnecessary or undue degradation and other impacts to non-mineral resources in the area in accordance with its obligations under FLPMA and related laws (e.g., Endangered Species Act and Clean Water Act). For instance, without comprehensive planning and environmental review, the BLM cannot demonstrate that state and federal air and water quality standards have been complied with as required by FLPMA's resource management planning mandates. *See* 43 U.S.C. § 1712(c)(8).

The fact that BLM appears to rely directly on the 2003 RMP and 2001 RFDS in support of its proposed approval of the aforementioned APDs underscores the lack of adequate environmental consideration under NEPA. In the EAs for these APDs, the BLM explicitly “tiers” to the 2003 RMP EIS. Yet tiering a project-level analysis is only allowed when the underlying NEPA document actually and adequately addresses the potentially significant impacts of the project and considers a reasonable range of alternatives. 40 C.F.R. §§ 1502.20, 1508.28. Here, BLM, by approving APDs, undermines the efficacy of the Mancos Shale RMP amendment, arbitrarily limiting the choice of alternatives and predetermining significant aspects of the RMP amendment by committing agency resources through oil and gas leasing and drilling that is taking place right now.

At the least, the BLM has no basis to conclude that the impacts of drilling and leasing will not be significant. The agency's apparent reliance on EAs to analyze and assess the impacts of these APDs is therefore further misplaced and the agency must, at the least, prepare an EIS to assess further leasing and drilling approvals. Indeed, the BLM can only approve the proposed APDs with an EA if it documents that there are no significant impacts (i.e., issues a FONSI). Here, because the underlying EIS relied upon by the BLM in its proposed EAs is, by its own terms, limited in scope and does not assess let alone authorize leases or APDs of the type BLM is now approving, there is no support for a FONSI. The BLM must either abandon its proposed approvals or, at the least, prepare a full EIS before it can legitimately approve the proposed APDs.

Indeed, BLM's own NEPA Handbook states that, when tiering to an EIS, “[i]f there are new circumstances or information that would result in significant effects of an individual action not considered in the EIS, tiering to the EIS cannot provide the necessary analysis to support a FONSI for [an] individual action[.]” BLM NEPA Handbook, Section 5.2.2 at 27. The Handbook

further states that, “[a]n EIS would need to be prepared for the individual action only if there are significant effects that have not been analyzed in the broader EIS.”

By all measures, horizontal drilling of Mancos shale poses significant impacts to the environment. NEPA regulations define significance in terms of context and intensity. *See* 40 C.F.R. § 1508.27. Here, not only would the context of the impacts be Field Office-wide (given the lack of any programmatic analysis of the impacts of horizontal drilling) but also particularly acute in the localities where drilling is occurring, strongly indicating significance under 40 C.F.R. § 1508.27(a), but the intensity would be significant under 40 C.F.R. § 1508.27(b) in light of the potential for previously unconsidered effects to public health and safety, the controversial nature of the impacts, the uncertainty of the impacts, the precedent that will be set in allowing for future drilling and leasing, cumulative impacts, and the threat to state and federal environmental protection requirements.

The simple fact that the BLM is preparing an EIS in order to address the potentially significant impacts of horizontal drilling of Mancos shale—and, necessarily, to consider alternatives pertinent to such drilling, including the no action alternative—is alone indicative of the significance of further leasing and drilling and of the limitations and inadequacies of the current RMP and NEPA documents that BLM is attempting to tier from.

II. The BLM Must Reject the Proposed APDs

In light of the aforementioned deficiencies under NEPA, as well as the overall uncertainty over the environmental impacts of horizontal drilling and fracking, the BLM must deny the APDs before the agency. The BLM has not only has authority, but the duty, to do so in this case.

A. The Duty to Reject the Proposed APDs

The BLM not only has the authority, but the duty, to deny an APD if its approval is not supported by sufficient environmental considerations under NEPA, FLPMA, and the MLA. Although the BLM may believe that it is obligated to approve the proposed APDs due to the fact that they would develop existing leases, the fact that there are existing leases does not foreclose BLM’s ability and duty to limit drilling as necessary or appropriate.

Indeed, a lessee cannot drill a well on a lease until BLM has approved an APD. 30 U.S.C. § 226(g); 43 C.F.R. § 3162.3-1(c). The operator must submit an APD “for each well” to be drilled on the lease. *Id.* at § 3162.3-1(c). An APD must include a drilling plan, a surface use plan of operations, evidence of bond coverage, and “such other information as may be required by applicable orders and notices.” *Id.* at § 3162.3-1(d). The operator must initiate the APD process at least 30 days before it wants to start drilling. *Id.* When BLM receives an APD or Notice of Staking, the agency must “post” in the relevant BLM office information about the APD for public examination at least 30 days before BLM approves the APD. 30 U.S.C. § 226(f); *id.* at § 3162.3-1(g).

Within 5 working days of the close of the 30-day public notice period, BLM “shall” take

one of the following actions:

- (1) Approve the application as submitted or with appropriate modifications or conditions;
- (2) Return the application and advise the applicant of the reasons for disapproval; or
- (3) Advise the applicant, either in writing or orally with subsequent written confirmation, of the reasons why final action will be delayed along with the date such final action can be expected.

Id. at § 3162.3-1(h). The MLA has a similar provision and explicitly provides for denial of an APD if the agency has not completed compliance with NEPA or other applicable laws (such as the Endangered Species Act, FLPMA, Clean Water Act, and National Historic Preservation Act). The provision says not later than 30 days after an operator submits a complete application, BLM shall:

- (A) issue the permit, if the requirements under the National Environmental Policy Act of 1969 [42 U.S.C. 4321 et seq.] and other applicable law have been completed within such timeframe; or
- (B) defer the decision on the permit and provide to the applicant a notice—
 - (i) that specifies any steps that the **applicant** could take for the permit to be issued; and
 - (ii) a list of actions that need to be taken by the **agency** to complete compliance with applicable law together with timelines and deadlines for completing such actions.

30 U.S.C. § 226(p)(2) (emphasis added). The applicant has two years from the date it receives notice from BLM that the agency is deferring a decision on the permit to comply with the requirements specified by BLM, including providing information that the agency needs for NEPA compliance. *Id.* at § 226(p)(3)(a). If within two years the applicant comes into compliance with requirements imposed by BLM, the agency “shall” issue a decision on the permit within 10 days “**unless**” the agency has not completed compliance with NEPA and/or other applicable laws within the two-year time frame. *Id.* at § 226(p)(3)(b) (emphasis added). Finally, if the applicant does not complete the requirements within two years “or if the applicant does not comply with applicable law, the Secretary shall deny the permit.” *Id.* at § 226(p)(3)(c).

Furthermore, under the MLA and BLM’s oil and gas regulations, BLM retains the authority to impose additional conditions on a lease or deny an APD under certain circumstances. *See, e.g.*, 43 C.F.R. § 3101.1-2. As an initial matter, BLM is not divested of its authority to control lease operations once the agency issues a lease. The U.S. Supreme Court has recognized that the holder of an oil and gas lease does not acquire an unlimited right to develop the lease free of any oversight from the Department of Interior; “In short, a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee, nor does it convey

an unencumbered estate in the minerals.” *Boesche v. Udall* 373 U.S. 472, 478 (1963).

BLM’s leasing regulation at 43 C.F.R. § 3101.1-2 provides the rights and limitations created for both the agency and lessee by a federal oil and gas lease:

A lessee shall have 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 **subject to**: Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed.

43 C.F.R. § 3101.1-2 (emphasis added).² Thus, a lease is “subject to” three reservations of BLM’s authority including lease stipulations, applicable laws and regulations, and reasonable measures that BLM might require. The same regulatory provision includes a non-inclusive definition as to what may constitute a reasonable measure that a lease can be subject to:

To the extent consistent with lease rights granted, such reasonable measures may include, *but are not limited to*, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. At a minimum, measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year.

Id. (emphasis added).³ BLM’s regulations governing leasing operations also put operators on notice that they are subject to all applicable laws and regulations, lease terms, Onshore Oil and Gas Orders, Notices to Lessees and “other orders and instructions of the authorized officer. 43 C.F.R. § 3162.1(a). This provision also required operators to conduct their operations in a manner that “protects other natural resources and environmental quality” and “protects life and property” among other things. *Id.* The regulations also impose specific “environmental obligations” on operators that implicate BLM’s authority to condition its approval of APDs:

The operator shall conduct operations in a manner which protects the mineral

² In addition, BLM’s Lease Form 3100-11 explicitly states: “Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of Interior’s regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.”

³ When BLM promulgated this regulation, it made clear that it was not limiting the “reasonable measures” that it could impose on a lease to relocations within 200 meters or less-than-60-day prohibitions on surface disturbance. In fact, BLM stated that “the authority of the Bureau to proscribe ‘reasonable,’ but more stringent, protection measures is not affected by the final rulemaking.” 53 Fed. Reg. 17,340, 17,341 (May 16, 1988). Thus, the 200-meter/60-day limitations represent a floor rather than a ceiling for BLM’s authority to impose other reasonable measures on a lease to protect the environment.

resources, other natural resources, and environmental quality. In that respect, the operator shall comply with the pertinent orders of the authorized officer and other standards and procedures as set forth in the applicable laws, regulations, lease terms and conditions, and the approved drilling plan or subsequent operations plan.

Id. at 3162.5-1(a). This same provision requires that, before approving an APD, BLM perform an environmental analysis to determine whether an EIS is required and whether conditions of approval are necessary. *Id.*

Finally, BLM's Onshore Oil and Gas Order Number 1 (which lessees are "subject to" by Form 3100-11) provides BLM with the authority to attach Conditions of Approval ("COAs") to APDs "to ensure that proposed operations minimize adverse impacts to other resources . . . consistent with granted lease rights." 74 Fed. Reg. at 10, 334 (March 7, 2007). The Order goes on to say: The BLM will incorporate any mitigation requirements, including Best Management Practices ("BMPs"), identified through the APD review and appropriate NEPA and related analyses, as Conditions of Approval to the APD.⁴ *Id.*

BLM's authority and duty is affirmed under both the MLA and BLM's leasing regulations. Under the MLA, BLM must defer approval of an APD where the agency has not completed the NEPA process, or the processes for compliance with laws such as FLPMA and the Endangered Species Act, for the APD within the 30-day period from submission of the APD. 30 U.S.C. § 226(p)(2)(A). As part of its deferral, the agency must provide the applicant with a time line for when the agency will complete compliance with federal laws and/or specify the information needed from the applicant to complete compliance. *Id.* at § 226(p)(2)(B). If the applicant does not provide the requested information within two years, BLM must deny the APD. *Id.* at § 226(p)(3)(C). Although Section 226(p) of the MLA does not explicitly give BLM the authority to deny an APD when the compliance process for NEPA and other federal laws is ongoing, the MLA does require BLM to defer a decision on an APD until the agency has complied with applicable environmental laws.

Regulations for lease operations provide BLM with the authority to take one of three actions on APDs: approve the application as submitted or with conditions of approval, deny the application and inform the application of the reasons for so doing, or defer the application and inform the applicant as to why a final decision is delayed. 43 C.F.R. § 3162.3-1(h). The regulations do not provide any criteria for denying an APD but it's reasonable to infer that BLM can deny an APD if the application does not comply with requirements of applicable law, lease stipulations, the Onshore Oil and Gas Order, or any of the other requirements that the lessee is subject to under the lease terms. Onshore Oil and Gas Order Number 1 requires that BLM "deny the permit if it cannot be approved and the BLM cannot identify any actions that the operator could take that would enable BLM to issue the permit[.]" 72 Fed. Reg. at 10,334. Therefore, BLM can deny an APD in situations where allowing drilling activities on the lease—even with

⁴ Even when BLM approves an APD, the operator's rights to work the lease remain cabined by the limitations placed on extraction by BLM. Moreover, APD approval "does not warrant or certify that the applicant holds legal or equitable title to the subject lease(s) which would entitle the applicant to conduct drilling operations." 43 C.F.R. § 3162.301(i).

imposition of additional conditions—would violate NEPA, FLPMA, MLA, ESA, CWA or other federal laws.

BLM's authority to impose conditions on APD approval is much broader than the agency's authority to deny an APD outright. Before BLM can approve an APD, the agency must perform environmental analyses to determine the impacts of drilling. Based on the results of those analyses, BLM can impose conditions of approval to mitigate significant environmental impacts. The range of COAs is not limited to the 200 meter/60-day reasonable measure mentioned in the leasing regulations; rather, the only limit on COAs is that a COA can't completely prohibit the lessee from extracting oil and gas from the lease.

In light of all of this, it is clear that the BLM has no authority to issue the proposed APDs and it would actually appear that BLM is duty-bound to deny or at least defer the APDs. Not only has the agency not prepared sufficient environmental analysis to address the impacts of horizontal drilling and fracking of the Mancos shale, but there is no way that the BLM can approve the APDs absent completing its RMP Amendment and EIS. Thus, denial is compelled under the MLA and BLM's oil and gas leasing regulations.

IV. The BLM's Duty to Reject the Proposed APDs is Underscored by Other Deficiencies in the RMP and EIS, as well as Deficiencies in the EA

Not only is it clear that the 2003 RMP failed to consider the impacts of horizontal drilling, significant new information clearly indicates that the 2003 RMP is now flawed and outdated in other key regards and cannot be relied upon by the BLM to support FONSI's for APDs authorizing the development of the Mancos shale. This is especially evident with regards to air quality and climate impacts.

A. Air Quality Impacts

To begin with, the 2003 RMP EIS is fatally flawed with regards to air quality. Significant new information demonstrates that emissions associated with oil and gas development are significantly higher than what the RMP contemplated. According to recent inventory data prepared by the Western Regional Air Partnership ("WRAP"), the 2003 Farmington EIS underestimates emissions of volatile organic compounds ("VOCs") from oil and gas operations by nearly 30-fold. In 2003, BLM estimated that within 20 years, VOC emissions would amount to 2,008.5 tons/year. According to the most recent WRAP inventory, VOC emissions from oil and gas activities in San Juan and Rio Arriba Counties were estimated to be nearly 60,000 tons/year in 2006 and projected to be more than 55,000 tons per year by 2012. See Exhibit 6, ENVIRON, *Final Report: Development of 2012 Oil and Gas Emissions Projections for the South San Juan Basin* (Dec. 2009) (prepared for Western Regional Air Partnership); Exhibit 7, ENVIRON, *Final Report: Development of Baseline 2006 Emissions from Oil and Gas Activity in the South San Juan Basin* (Nov. 2009) (prepared for Western Regional Air Partnership). The table below illustrates this discrepancy between the amount of VOC emissions projected in 2003 and the most recent estimates.

Source of Emission Inventory	VOC Emission Estimate (tons/year)
RMP 20-Year Projection (RMP EIS at J-11)	2,008.5
WRAP Phase III 2006 Inventory for San Juan/Rio Arriba Counties	59,933
WRAP Phase III 2012 Projection for San Juan/Rio Arriba Counties	55,049

This discrepancy is critical because it shows that BLM cannot tie to the 2003 RMP EIS to conclude that air quality impacts associated with APD approvals will not be significant. This is especially the case given that VOCs are key ozone precursors. Higher VOC emissions likely will lead to greater ozone concentrations, potentially in exceedance or in violation of the 8-hour ozone national ambient air quality standards (“NAAQS”). *See* 40 C.F.R. § 50.15. If anything, BLM must either prepare an EIS to address the air quality impacts of the proposed Mancos shale drilling, supplement the 2003 RMP EIS prior to moving ahead with the proposed leases, or complete its RMP Amendment prior to approving any APDs for horizontal drilling of Mancos shale.

This discrepancy also indicates that the emissions data presented in the APD EAs, which shows dramatically lower VOC emissions in San Juan and Rio Arriba Counties, is flawed. *See e.g.*, EA No. F010-2014-0272 at 26-27. The EA indicates that EPA emission inventory data from 2011 was utilized in reporting overall emissions in San Juan and Rio Arriba Counties. However the EPA’s inventory data does not reflect the actual emission inventory data presented by the WRAP as it relies primarily on point source inventory data submitted by the New Mexico Environment Department. *See* Exhibit 8, Excerpt from EPA, *2011 National Emissions Inventory, version 1, Technical Support Document DRAFT* (Nov. 2013) at 160, available at: http://www.epa.gov/ttn/chief/net/2011nei/2011_neiv1_tsd_draft.pdf. Yet, as the WRAP data indicates, the vast majority of oil and gas-related VOC emissions are non-point source emissions. The inventory data also does not take into account emissions from oil well completions. *Id.* at 164.

The APD EAs also incorporate broad technical information related to air resources from the 2014 Air Resources Technical Report for New Mexico, Oklahoma, Texas and Kansas, which is too general in scope to sufficiently analyze the site-specific impacts of oil and gas leasing and development from the proposed action. It is notable that this report contains no actual analysis of air quality impacts, but rather simply discloses what the BLM believes may be the regional “affected environment.” To the extent the EAs present emissions data for the APDs, there is no support that the reported emissions increases will not lead to cumulative impacts that are significant, particularly given the discrepancy in the overall VOC emissions inventories.

The APD EAs also do not actually analyze or assess the impacts of developing the proposed leases to a number of NAAQS. We are troubled that the EAs fail to analyze the direct, indirect, and cumulative air quality impacts in the context of NAAQS promulgated since the

RMP was adopted. These NAAQS include the 1-hour nitrogen dioxide (“NO₂”) NAAQS (promulgated in 2010), the 1-hour sulfur dioxide NAAQS (also promulgated in 2010), the 8-hour ozone NAAQS (promulgated in 2008), the 24-hour PM_{2.5} NAAQS (promulgated in 2006), and the annual PM_{2.5} NAAQS (promulgated in 2012). We are also troubled over the impacts to the 1-hour NO₂ NAAQS given that short-term NO₂ concentrations are linked to near-field, near ground-level emissions, including compressor engines exhaust stacks and other combustion sources. Because the RMP does not analyze or assess impacts to these air quality standards, in particular the NO₂ NAAQS, the EA cannot reasonably tier to the analysis in the 2003 RMP EIS or otherwise reasonably conclude that the direct, indirect, and cumulative impacts of the APDs will not be significant.

The failure to analyze and assess impacts to air quality is especially hard to understand or justify because the EA acknowledges the relevant NAAQS. *See* EA at 23. Yet nowhere in the EA does BLM attempt to analyze what the consequences of developing the APDs will be in terms of future air quality concentrations. Although the BLM presented estimated emissions and cites current air quality monitoring data in support of its assertion that impacts to the NAAQS will not be significant, the fact that current monitoring does not indicate the region is violating any NAAQS does not mean that the NAAQS will never be violated. Moreover, the U.S. District Court for the District of Colorado in rejected a similar analysis prepared by the BLM in support of an oil and gas drilling plan in the Roan Plateau area of western Colorado. In that case, the BLM asserted that the lack of ozone violations indicated that future impacts would not be significant. In her ruling, Judge Krieger stated that “[t]he mere fact that the area has not exceeded ozone limits in the past is of no significance when the purpose of the EIS is to attempt to predict what environmental effects are likely to occur in the future[.]” *Colo. Env’tl. Coal. v. Salazar*, 875 F. Supp. 2d 1233, 1257 (D. Colo. 2012). The need to actually analyze and assess how the APDs will affect future ozone concentrations is critical given that the EPA may be lowering the level of the current NAAQS from 0.075 parts per million to between 0.060 and 0.070 parts per billion. *See* Exhibit 9, Executive Summary, EPA, *Policy Assessment for the Review of the Ozone National Ambient Air Quality Standard* (August 2014). If a standard is set anywhere between 0.060 and 0.070, the San Juan Basin will be in violation of the NAAQS. This raises significant public health concerns that the BLM did not address, and also important considerations that should be addressed through the Mancos Shale RMP amendment.

B. Greenhouse Gas Emissions/Climate Impacts

The 2003 RMP EIS also fails to address field office-wide greenhouse gas emissions and climate impacts, undercutting any reliance by the BLM on the EIS to conclude that the impacts of the APDs would not be significant. Indeed, the EIS does not even quantify greenhouse gas (“GHG”) emissions, acknowledge climate change, or even attempt to analyze and assess climate impacts associated with oil and gas development. When BLM was presented with climate change concerns during the 2003 Farmington RMP and EIS process, BLM rejected any responsibility to conduct such analysis, noting dubiously in its response to comments that “[m]ethods to determine the effects of the significance of greenhouse gas emissions (GGE) from individual projects to climate change do not exist and this issue is beyond the scope of this NEPA process.” RMP EIS Response to Comments. Furthermore, to the extent the EAs address GHG emissions

and climate impacts, the EAs fall incredibly short of adequately analyzing and assessing such impacts, or of considering alternatives to reduce such impacts

Research conducted by the National Research Council has confirmed the fact that the negative impacts of energy generation from fossil fuels are not represented in the market price for such generation.⁵ In other words, failing to internalize the externalities of energy generation from fossil fuels—such as the impacts to climate change and human health—has resulted in a market failure that requires government intervention. Executive Order 12866 directs federal agencies to assess and quantify such costs and benefits of regulatory action, including the effects on factors such as the economy, environment, and public health and safety, among others. *See* Exec. Order No. 12866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).⁶ The Ninth Circuit has ruled that agencies must include the climate benefits of a significant regulatory action in federal cost-benefit analyses to comply with EO 12866.

[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 v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1217 (9th Cir. 2008) (quotations and citations omitted); *see also Border Power Plant Working Grp. v. U.S. Dep't of Energy*, 260 F. Supp. 2d 997, 1028-29 (S.D. Cal. 2003) (finding agency failure to disclose project's indirect carbon dioxide emissions violates NEPA).

In response, an Interagency Working Group (“IWG”) was formed to develop a consistent and defensible estimate of the social cost of carbon—allowing agencies to “incorporate the social benefits of reducing carbon dioxide (CO₂) emissions into cost-benefit analyses of regulatory actions that impact cumulative global emissions.” *See* Exhibit 10, Interagency Working Group on the Social Cost of Carbon, United States Government, *Technical Support Document: Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866* (May 2013) at 2. In other words, social cost of carbon is a measure of the benefit of reducing greenhouse gas emissions now and thereby avoiding costs in the future. The charts below depict, (A) dramatically increasing damages from global warming over time, as well as (B) the social cost of these carbon emissions based on 2013 TDS values.⁷

⁵ *See, e.g.*, National Research Council, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use* (2010).

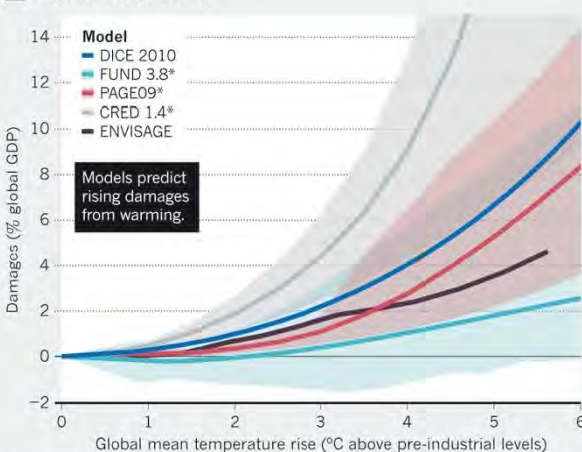
⁶ *See also* Executive Order 13563, 76 Fed. Reg. 3821 (Jan. 18, 2011) (reaffirming the framework of EO 12866 and directing federal agencies to conduct regulatory actions based on the best available science).

⁷ *See* Exhibit 11, Richard Revesz, *et al.*, *Global warming: Improve economic models of climate change*, NATURE 508, 173-175 (April 10, 2014).

CARBON'S COSTLY LEGACY

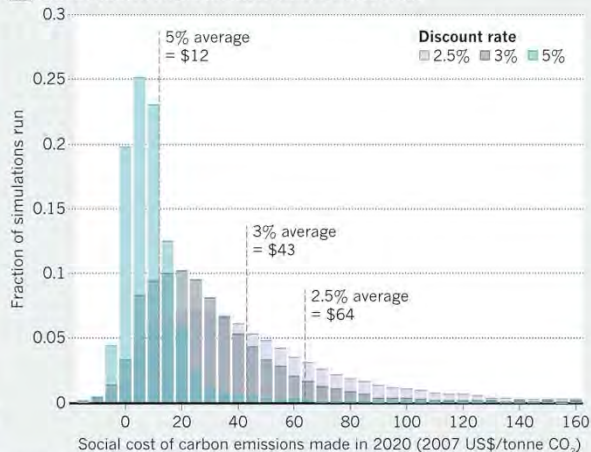
Economic models of climate change project that resulting damage worldwide (A) will increase with future emissions and may cost several per cent of global gross domestic product (GDP) with the warming expected by 2100. Uncertainties in future socio-economics, emission rates and climate impacts result in a range of estimates of the social cost of carbon, which is also affected by the choice of 'discount rate' used to convert future harms into today's money (B).

A PROJECTED DAMAGES



*Shaded regions indicate 5% and 95% confidence intervals for FUND 3.8 and PAGE09, and a high-low range for CRED 1.4.

B SOCIAL COSTS FROM US GOVERNMENT ANALYSIS



Leading economic models all point in the same direction: that climate change causes substantial economic harm, justifying immediate action to reduce emissions.⁸ The interagency process to develop social cost of carbon estimates—originally described in the 2010 interagency technical support document (“TSD”), and updated in 2013—developed four values based on the average social cost of carbon from three integrated assessment models (DICE, PAGE, and FUND), at discount rates of 2.5, 3, and 5 percent,⁹ as well as a fourth value demonstrating the cost of worst-case impacts.¹⁰ These models are intended to quantify damages, including health impacts, economic dislocation, agricultural changes, and other effects that climate change can impose on humanity. While these values are inherently speculative, a recent GAO report has confirmed the soundness of the methodology in which the IWG’s social cost of carbon estimates were developed, therefore further underscoring the importance of integrating social cost of carbon analysis into the agency’s decisionmaking process. See GAO, “Regulatory Impact Analysis, Development of Social Cost of Carbon Estimates,” GAO-14-663 (July 2014), available at <http://www.gao.gov/assets/670/665016.pdf>.

⁸ See NATURE 508 at 174.

⁹ The choice of which discount rate to apply—translating future costs into current dollars—is critical in calculating the social cost of carbon. The higher the discount rate, the less significant future costs become, which shifts a greater burden to future generations based on the notion that the world will be better able to make climate investments in the future. The underlying assumption of applying a higher discount rate is that the economy is continually growing. The IWG’s “central value” of three percent is consistent with this school of thought—that successive generations will be increasingly wealthy and more able to carry the financial burden of climate impacts. “The difficulty with this argument is that, as climate change science becomes increasingly concerning, it becomes a weaker bet that future generations will be better off. If they are not, lower or negative discount rates are justified.” WRI Report, at 9. “Three percent values an environmental cost or benefit occurring 25 years in the future at about half as much as the same benefit today.” *Id.*

¹⁰ See 2013 TSD at 2.

The updated interagency social cost of carbon estimates for 2020 are \$12, \$43, \$65 and \$129 (in 2007\$).¹¹ The IWG does not instruct federal agencies which discount rate to use, suggesting that the 3 percent discount rate (\$43 per ton of CO₂) as the “central value,” but further emphasizing “the importance and value of including all four SCC values[;]” i.e., that the agency should use the range of values in developing NEPA alternatives.¹²

The agency’s obligation to analyze the costs associated with GHG emissions through NEPA was directly affirmed by the court in *High Country Conservation Advocates v. U.S. Forest Service*, ---F.Supp.2d---, 2014 WL 2922751 (D.Colo. 2014). In his decision, Judge Jackson identified the IWG’s social cost of carbon protocol as a tool to “quantify a project’s contribution to costs associated with global climate change.” *Id.* at 17.¹³ To fulfill this mandate, the agency must disclose the “ecological[,] ... economic, [and] social” impacts of the proposed action. 40 C.F.R. § 1508.8(b). In contradiction to the findings of the Court, BLM asserts in the APD EAs that:

The very small increase in GHG emissions that could result from implementing the proposed alternative would not produce climate change impacts that differ from the no action alternative. This is because climate change is a global process that is impacted by the sum total of GHGs in the Earth’s atmosphere. The incremental contribution to the global GHGs from the proposed action cannot be translated into effects on climate change globally or in the area of this site-specific action. It is currently not feasible to predict with certainty the net impacts from the proposed action on global or regional climate.

See e.g., EA No. F010-2014-0272 at 28. To the contrary, simple calculations applying the social cost of carbon protocol to GHG emissions from this project offer a straightforward comparative basis for analyzing impacts, and identifying very significant costs. For instance, taking the BLM’s assumption that each horizontally drilled well releases 671.54 metric tons of carbon dioxide (*see e.g.*, EA No. F010-2014-0272 at 26), one can calculate total GHGs associated with the proposed APDs and calculate a carbon costs. For example, for EA No. F010-2014-0272, which would authorize the drilling of 10 horizontal wells, total GHGs would be 6,715.4 metric tons. Applying the IWG central value of \$43 per ton of CO₂ results in a social cost of carbon of \$288,762.

However, based on the BLM’s estimate of GHG emissions, this represents an underestimate of costs. Notably, BLM asserts in the APD EAs that there will be no methane

¹¹ *See* 2013 TSD at 3 (including a table of revised SCC estimates from 2010-2050). To put these figures in perspective, in 2009 the British government used a range of \$41-\$124 per ton of CO₂, with a central value of \$85 (during the same period, the 2010 TSD used a central value of \$21). WRI Report at 4. The UK analysis used very different assumptions on damages, including a much lower discount rate of 1.4%. The central value supports regulation four times as stringent as the U.S. central value. *Id.*

¹² *See* 2013 TSD at 12.

¹³ *See also id.* at 18 (noting the EPA recommendation to “explore other means to characterize the impact of GHG emissions, including an estimate of the ‘social cost of carbon’ associated with potential increases in GHG emissions.”) (citing Sarah E. Light, *NEPA’s Footprint: Information Disclosure as a Quasi-Carbon Tax on Agencies*, 87 Tul. L. Rev. 511, 546 (Feb. 2013)).

emissions associated with well completion activities, workovers, and storage tanks. This is not accurate; it is well established, based on EPA’s annual GHG inventory and reporting program, GAO’s 2010 report on lost methane (11-34), as well as a host of literature, that methane is a significant pollutant released during oil and gas drilling. As one example, recent data submitted to the U.S. EPA’s Greenhouse Gas Reporting Program (“GHGRP”) by oil and gas producers shows that methane emissions are disproportionately large from four high-producing Western US oil and gas basins, including the San Juan, where most, or almost all, of the oil and gas production is from Federal lands or mineral estate and production is overseen by BLM. As shown below in Table 1, these basins—Green River, Piceance, San Juan, and Uinta—produced 14.5 percent of US onshore natural gas and only 2.7 percent of US onshore oil in 2012,¹⁴ but accounted for 27.1 percent of all the methane emissions reported from nationwide onshore oil and gas production in that year.¹⁵

Table 1 – Oil and Gas Production and Reported Methane Emissions from Four Western US Basins with High Proportions of BLM Jurisdiction¹⁶

Basin	Percentage of U.S. Gas Production	Percentage of U.S. Oil Production	Percentage of Reported U.S. Methane Loss
Green River	5.3%	0.8%	4.8%
Uinta	1.7%	1.3%	3.3%
San Juan	4.4%	0.1%	14.5%
Piceance	3.2%	0.4%	4.6%
Total for 4 Basins	14.5%	2.7%	27.2%

Furthermore, analysis of GHGRP data shows that emissions from a number of key sources in these basins, in particular the San Juan Basin, are also disproportionately high, as shown in Table 2. For example, reported emissions from these four basins account for over 58 percent of nationwide reported emissions from liquids unloading and almost 35 percent of emissions from pneumatic controllers and pumps.

¹⁴ For a description of the analysis methodology used to extract the information shown here and below on production and emissions from these basins, *see* Exhibit 12, Description of Methodology for Determining Methane Emissions from Production Basins and Sources (hereafter “Description of Methodology”).

¹⁵ See Description of Methodology. Not all methane emissions from oil and gas production facilities are reported to the GHGRP, due to limitations such as a reporting threshold that exempts smaller operators. However, we are not aware of any reason why these omitted emissions would skew the comparisons of GHGRP data for these basins and the US as a whole that we present here.

¹⁶ See Description of Methodology.

Table 2 – Percentage of Nationwide Emissions for Specific Sources Occurring from the Green River, Uinta, San Juan, and Piceance Basins¹⁷

Emissions Source		Percentage of National Emissions for Specific Source
Fugitives / Leaks		21.1%
Liquids Unloading		61.7%
Pneumatics	Pneumatic Controllers	33.6%
	Pneumatic Pumps	30.1%
Compressors	Reciprocating Compressors	42.6%
	Centrifugal Compressors	26.4%

These disproportionate emissions, far in excess of the portion of nationwide oil and gas production occurring in these basins, show that operations in these basins, including wells and facilities managed by BLM, are significantly worse than standard practice (let alone best practice).

The EAs, here, simply do not quantify fugitive emissions of methane, such as from leaking pipes and components. A recent study by NASA reported that leaks were leading to significant amounts of methane emissions in the San Juan Basin, indicating that fugitive emissions are not insignificant. *See* Exhibit 13, Vaidyanathan, G., “The Biggest Methane Leak in America is in New Mexico,” *Scientific American* (Oct. 10, 2014). However, BLM also appears to underestimate total GHGs because it does not take into account methane in terms of total carbon dioxide emissions. According to the IPCC’s Fifth Assessment Report, the 20-year GWP for methane—which is the relevant timeframe for consideration if we are to stem the worst of climate change—is 86.¹⁸ We use the 20-year warming period to emphasize near term climate mitigation opportunities and to reflect the typical time horizon of BLM decision-making as reflected in the agency’s primary management tool, RMPs, as required by FLPMA. But even using the 100-year warming period for methane demonstrates the deficiencies in BLM’s analysis, which relies on an outdated 100-year warming potential of 21 for methane (derived from EPA’s practice which is, in turn, derived by the now-outdated IPCC Second Assessment Report, published in 1997), while the IPCC’s most recent Fifth Assessment Report demonstrates that the 100-year warming potential is 34. By failing to properly account for methane, the BLM has underestimated both GHGs and the carbon costs that would be associated with the APDs.

Critically, moreover, the agency only quantifies the estimated emissions from

¹⁷ See Description of Methodology.

¹⁸ See IPCC, *Climate Change 2013: the Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press (2013) at 731, available at <http://climatechange2013.org/>.

construction and production, not from indirect activities, such as trucking, processing, refining, etc. This is significant because these downstream GHG impacts are likely to be significant. For instance, BLM estimates that a single well will produce 100 barrels of oil a day. *See e.g.*, EA No. F010-2014-0272 at 26. This would equal 36,500 barrels of oil per well per year. The EPA provides a conversion factor of 0.43 metric tons of CO₂ per barrel of oil consumed.¹⁹ This results in downstream emissions of 15,695 metric tons of CO₂e for one well. In the case of EA No. F010-2014-0272, which would approve 10 wells, this means 156,950 metric tons of CO₂e and a social cost of carbon of \$6,748,850.

Instead of considering these costs, the agency attempts to evade the necessary NEPA analysis by erroneously concluding that “[i]t is currently not feasible to predict with certainty the net impacts from the proposed action on global or regional climate.” *See e.g.*, EA No. F010-2014-0272 at 28. As noted by Judge Jackson, the social cost of carbon protocol provides such a tool. *See High Country Conservation Advocates*, 2014 WL 2922751 at 17. By failing to consider the costs of GHG emissions from the proposed APDs, the agency’s analyses effectively assume a price of carbon that is \$0. This is not allowed under NEPA. *See id.* at 21 (holding that although there is a “wide range of estimates about the social cost of GHG emissions[,] neither the BLM’s economist nor anyone else in the record appears to suggest the cost is as low as \$0 per unit. Yet by deciding not to quantify the costs as all, the agencies effectively zeroed out the cost in its quantitative analysis.”).

An agency must “consider every significant aspect of the environmental impact of a proposed action.” *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council*, 462 U.S. 87, 107 (1983) (quotations and citation omitted). This includes the disclosure of direct, indirect, and cumulative impacts of its actions, including climate change impacts and emissions. 40 C.F.R. § 1508.25(c). The need to evaluate such impacts is bolstered by the fact that “[t]he harms associated with climate change are serious and well recognized,” and environmental changes caused by climate change “have already inflicted significant harms” to many resources around the globe. *Massachusetts v. EPA*, 549 U.S. 497, 521 (2007); *see also id.* at 525 (recognizing “the enormity of the potential consequences associated with manmade climate change.”). Among other things, the agency’s analysis must disclose “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity[,]” including the “energy requirements and conservation potential of various alternatives and mitigation measures.” 42 U.S.C. § 4332(c); 40 C.F.R. § 1502.16(e). As explained by the Council on Environmental Quality, this requires agencies to “analyze total energy costs, including possible hidden or indirect costs, and total energy benefits of proposed actions.” 43 Fed. Reg. 55,978, 55,984 (Nov. 29, 1978); *see also* Executive Order 13514, 74 Fed. Reg. 52,117 (Oct. 5, 2009) (requiring government agencies to disclose emissions information annually from direct and indirect activities). Failing to perform such analysis undermines the agency’s decisionmaking process and the assumptions made.

We also note that methane is not simply a climate problem, but an energy waste problem. Methane is the primary ingredient of natural gas, so every metric ton of methane released to the atmosphere through venting and fugitive leaks, or flared, is a metric ton of methane that cannot be marketed to and used by consumers. This risks reducing royalties to federal and state governments. BLM, of course, must prevent the waste of methane—i.e., natural gas. The MLA

¹⁹ *See* EPA, *Calculations and References*, available at: <http://www.epa.gov/cleanenergy/energy-resources/refs.html>.

provides that “[a]ll leases of lands containing oil or gas ... shall be subject to the condition that the lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land....” 30 U.S.C. § 225; *see also* 30 U.S.C. § 187 (“Each lease shall contain...a provision...for the prevention of undue waste....” As the MLA’s legislative history teaches, “conservation through control was the dominant theme of the debates.” *Boesche v. Udall*, 373 U.S. 472, 481 (1963) (citing H.R.Rep. No. 398, 66th Cong., 1st Sess. 12-13; H.R.Rep. No. 1138, 65th Cong., 3d Sess. 19 (“The legislation provided for herein...will [help] prevent waste and other lax methods....”))).

BLM’s implementing regulations reflect these provisions, providing that “[t]he objective” of its MLA regulations in 43 C.F.R. Subpart 3160 “is to promote the orderly and efficient exploration, development and production of oil and gas.” 43 C.F.R. § 3160.0-4. Subpart 3160 specifically requires BLM officials to ensure “that all [oil and gas] operations be conducted in a manner which *protects other natural resources and environmental quality*, protects life and property and results in the *maximum ultimate recovery of oil and gas with minimum waste and with minimum adverse effect on the ultimate recovery of other mineral resources*.” 43 C.F.R. § 3161.2 (emphasis added). The lease owner and or operator is similarly charged with “conducting all operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; which protects other natural resources and environmental quality; which protects life and property; and *which results in maximum ultimate economic recovery of oil and gas with minimum waste and with minimum adverse effect on ultimate recovery of other mineral resources*.” 43 C.F.R. § 3162.1(a) (emphasis added). Thus, BLM and lessees have four duties of primary relevance: (1) to protect other natural resources and environmental quality; (2) to ensure the maximum ultimate recovery of oil and gas resources; (3) to minimize waste; and (4) to minimize adverse effects on the ultimate recovery of other mineral resources.

BLM does have an existing policy—Notice to Lessee 4a—that purports to deal with waste. But the GAO, in a 2010 report (GAO Report 11-34), noted that NTL 4A was developed in 1980, well before many methane reduction technologies and practices were developed and understood (e.g., via EPA’s Natural Gas STAR Program). As GAO found, “BLM guidance is 30 years old and therefore does not address venting and flaring reduction technologies that have advanced since it was issued.”²⁰ GAO also found that NTL 4A does not “enumerate the sources [of methane emissions] that should be reported or specify how they should be estimated.”²¹ Further, GAO “found a lack of consistency across BLM field offices regarding their understanding of which intermittent volumes of lost gas should be reported to [the Oil and Gas Operations Report].”²² GAO did note “that [BLM] thought the industry would use venting and flaring technologies if they made economic sense.”²³ However, this view, as GAO found, is belied by reality: methane waste is occurring and the existence of barriers to the deployment of

²⁰ GAO 11-34 at 27.

²¹ *Id.* at 11, 27.

²² *Id.* at 11.

²³ *Id.* at 27.

methane reduction technologies and practices.²⁴ BLM, to its credit, conceded “existing guidance was outdated given current technologies and said that they were planning to update it by the second quarter of 2012.”²⁵

Here, approval of the aforementioned APDs would violate NEPA and the MLA’s waste prohibition not only because the EAs tier to the 2003 RMP EIS, which fails to account for GHG emissions, methane waste, and climate impacts, but also because the EAs themselves fail to take a proper hard look at GHG emissions, methane waste, and to account for the climate and waste costs of carbon dioxide and methane pollution and waste. The fact that companies developing Mancos shale wells are already very clearly flaring significant amounts of methane gas (see pictures above) indicates that the BLM has abdicated its duty to take a hard look. Despite this ongoing practice, none of the aforementioned APD EAs even discloses that flaring is occurring.

C. Surface and Groundwater Impacts

Neither the 2003 RMP EIS nor the APD EAs adequately analyze and assess impacts to surface and groundwater. The 2003 RMP EIS is especially devoid when it comes to analyzing and assessing potentially significant water quality impacts associated with spills and the risks of groundwater contamination associated with drilling and fracking. The EAs also fall short. For example, while the EAs acknowledge potential impacts from spills, they do not actually analyze the frequency and extent to which they could occur and assess the significance of these impacts. *See e.g.* EA No. F010-2014-0272 at 30. This is a significant shortcoming under NEPA.

The EAs are also especially scant in terms of disclosing the potentially significant impacts of ground and surface water contamination in light of how other federal land management agencies are analyzing impacts. The U.S. Forest Service, for example, recently presented a useful disclosure on the potentially significant impacts of oil and gas drilling and fracking to ground and surface water. In a draft EIS for oil and gas leasing on the Pawnee National Grassland in northeastern Colorado, the agency disclosed the following:

Groundwater and Surface Water Contamination

There is possibility that hydraulic fracturing poses a risk of water contamination. Contamination is potentially due to three possibilities. First, hydraulic fracturing may produce fissures that allow fluids to migrate into water sources. Second, the well casing might fail; allowing fluids to escape into underground drinking water. Third, accidental spills at the surface could contaminate surface water or seep into groundwater.

Migration

Migration involves the possibility that hydraulic fracturing fluids have the potential to travel through fissures into water sources. Because a percentage of fluids remain underground upon completion of the hydraulic fracturing process,

²⁴ *Id.* at 20-33.

²⁵ *Id.* at 27.

some concern has been raised that these fluids will migrate into drinking water sources.

Although risk from migration is possible, this risk is limited for two reasons. First, any fluids left behind are likely to be isolated far below any ground water sources and the force of gravity makes it unlikely that these fluids would migrate upward into groundwater sources. Second, in most cases there is over a mile of impermeable rock that separates oil and gas targets from ground water.

Casing or Cement

Improper casing or cementing can create a possibility that hydraulic fracturing fluids or natural gas can migrate into ground water and properly drilling and casing a well is one of the most important aspects for protecting water resources. The most commonly reported instance of casing failure is when improper casing or cementing allows methane to enter groundwater. One study from MIT noted that, of 43 publically reported incidents related to gas well drilling, 20 were related to contamination of groundwater by natural gas.

While contamination of groundwater is uncommon; there are reported occurrences. However, there is no definitive conclusion of how common this occurs and estimates range from 7% to .03% with varying levels of supporting analysis. Regardless of how likely contamination of groundwater due to improper cementing or casing is; in general, the more oil and gas wells, the greater the likelihood that improper casing may cause groundwater contamination.

Surface Spills

Hydraulic fracturing fluids, oil, gasoline, and other chemicals are handled above ground before and after injection. This creates a contamination risk from spills, run-off, or seepage. Spills are somewhat common in oil and gas development. Of the 43 publically reported incidents, 14 were related to surface spills. In addition, the Colorado Oil and Gas Conservation Commission (COGCC) maintains a database of spills. Using this database, it has been reported that during 2014 there were an average of two spills per day in Colorado, 521 from January 2014 through July 2014, and 575 in 2013.²³ In addition, some of these spills affected groundwater and surface water.

Surface spills can pose environmental risk. Spills have the potential to contaminate both surface and groundwater and, depending on the chemicals, can render soil unsuitable for vegetative growth. Spills that contaminate surface water can also pose a risk to aquatic species.

The magnitude of risk and impacts will depend on several factors; including, cleanup and remediation efforts, where the spill occurs, and how much fluid is spilt. However, in general, the more oil and gas development, the greater the risk that spills and associated impacts will occur.

U.S. Forest Service, *Pawnee National Grassland Oil and Gas Leasing Analysis, Draft Environmental Impact Statement* (Aug. 2014) at 37-38 (available online at: http://a123.g.akamai.net/7/123/11558/abc123/forestservice.download.akamai.com/11558/www/nea/95573_FSPLT3_2324299.pdf). This disclosure stands in sharp contrast to the BLM's limited disclosure in the APD EAs. The BLM does not even acknowledge a risk from migration or improper casing or cementing, let alone assess the risks and impacts that would result from such impacts.

It is also disconcerting that, while the BLM acknowledges there will be water withdrawals required for drilling and fracking of the Mancos shale, there is no analysis or assessment of these impacts in the EAs. The BLM instead appears to believe that simply by virtue of the State of New Mexico issuing a water right, the impacts of water withdrawals are not significant. This is not a reasonable presumption given that the State of New Mexico is not required to analyze the environmental impacts of issuing water rights, consult under the Endangered Species Act, or otherwise ensure that water rights are consistent with protecting watershed health. Courts have, for example, rejected as "without merit" identical arguments that BLM may excuse itself from its NEPA hard look duty where a "facility operates pursuant to a state permit under the Clean Air Act." *Klamath-Siskiyou*, 387 F.3d at 998; *S. Fork*, 588 F.3d at 726 (same). The BLM, fundamentally, has an independent obligation to analyze and assess the indirect impacts of its actions, including the impacts of water withdrawals required to drill and frack Mancos shale wells. Here, the BLM could determine that water withdrawals are inconsistent with protecting the resources of the Farmington Field Office and prohibit the use of freshwater for drilling and fracking. The agency made no attempt to analyze impacts, however, thereby foreclosing on the opportunity to mitigate water withdrawal impacts.

Perhaps most disconcerting is that the BLM fails to acknowledge that water used for fracking is never again used. Reports have found that water used for fracking must either be reused for fracking or permanently disposed of underground. This means that every acre-foot of water consumed would represent an irreversible and irretrievable commitment of resources. Neither the 2003 RMP EIS nor the APD EAs acknowledge this irreversible and irretrievable commitment of resources, indicating that they fall short of complying with NEPA, which requires that "irreversible or irretrievable commitments of resources" be disclosed in EISs. *See* 42 U.S.C. § 4332(2)(C)(v); *see also* 40 C.F.R. § 1502.16.

D. Threatened and Endangered Species Impacts

Section 7 of the Endangered Species Act requires the BLM to consult with the U.S. Fish and Wildlife Service to ensure its action do not jeopardize the continued existence of listed species or adversely modify their critical habitats. *See* 16 U.S.C. § 1536(a)(2). Here, it is apparent the BLM has not properly consulted pursuant to section 7 and that approval of the APDs would violate the Endangered Species Act.

To begin with, the APD EAs rely on programmatic consultation that was completed in October of 2002, 12 years ago, in support of the 2003 RMP. *See e.g.*, EA No. F010-2014-0272 at 5. Based on the 2002 consultation (which amounted to a concurrence letter from the U.S. Fish and Wildlife Service), the BLM asserts that consultation over the APDs is not required. This is

unsupported for two reasons. First, the 2003 RMP EIS did not analyze or assess impacts related to horizontal drilling of the Mancos shale, and thus no consultation over this activity has occurred. We are particularly concerned that the BLM has not consulted over the cumulative impacts of this new activity or otherwise addressed how the direct and indirect impacts of Mancos shale drilling and fracking will affect listed species on a Field Office-wide scale. Because the actions consulted over in 2002 did not include horizontal drilling and fracking, reinitiation of consultation is required in accordance with 50 C.F.R. § 402.16(b). This is due to the fact that the new onset of Mancos shale development reveals that programmatic management “may affect” listed species and critical habitat in a manner or to an extent not previously considered.

Second, since 2002, new species and critical habitats have been listed in or near the Farmington Field Office that may be affected by land and mineral management activities, thereby requiring the BLM to reinitiate consultation pursuant to 50 C.F.R. § 402.12(d). These species and critical habitats include:

- Yellow-billed cuckoo, which was listed this month. *See* 79 Fed. Reg. 59,992 (Oct. 3, 2014). The U.S. Fish and Wildlife Service has also proposed critical habitat for this species. The proposed critical habitat includes a stretch of the San Juan River through Farmington. *See* 79 Fed. Reg. 48,548, 48,625 (Aug. 15, 2014). Impacts to the species and its habitat could occur from direct riparian habitat destruction and degradation, loss of water flows and groundwater dewatering, and water contamination that could affect the species’ habitat.
- Zuni bluehead sucker, which was listed in 2014. *See* 79 Fed. Reg. 43,132 (July 24, 2014). Impacts to the species and its habitat could occur from direct riparian habitat destruction and degradation, loss of water flows and groundwater dewatering, and water contamination that could affect the species’ habitat.
- Southwestern willow flycatcher critical habitat, which was designated in January of 2013. *See* 78 Fed. Reg. 344 (Jan. 3, 2013). Critical habitat was designated downstream of the Farmington Field Office along the San Juan River, meaning that management activities that reduce the availability of water for the San Juan river or contaminate the river could affect the species’ critical habitat.
- Mexican spotted owl critical habitat, which was designated in August of 2014. *See* 69 Fed. Reg. 53,182 (Aug. 31, 2004). Critical habitat includes forested acreages in Rio Arriba County within the Farmington Field Office, which could be affected by oil and gas development and other management actions.

Although the BLM asserts in the EAs that no listed species or critical habitat are present in the “analysis area,” the agency’s “analysis area” is arbitrarily narrow and fails to account for the fact that the direct and indirect impacts of drilling and fracking “may affect” listed species and critical habitats. It is important to point out that the definitions of “action” and “effects” under the U.S. Fish and Wildlife Service’s rules for consultation are extremely broad and include “indirect effects,” or those effects that are “caused by the proposed action and are later in time,

but still are reasonably certain to occur.” 50 C.F.R. § 402.02. Critically, the definition of “action area” explicitly includes “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” *Id.* Here, it appears the BLM’s “analysis area” excludes areas that will be indirectly affected by the APDs, including areas that will be affected indirectly by truck traffic, oil and/or produced water spills, truck loading and unloading, water withdrawals for fracking operations, frack chemical mixing and preparation, and refining activities.

On the issue of water withdrawals, we are particularly concerned. The APD EAs either do not identify water withdrawals for fracking as a potentially significant impact or simply conclude that withdrawals will have no effect on the San Juan River. For instance, in EA No. F010-2014-0272, the BLM states that “[n]o new water depletions would result,” but then discloses that “1.3 million gallons of water would be used for drilling and completions per well.” EA at 5 and 30. This is wholly unsupported.²⁶ The BLM has no basis to conclude that the use of appropriated water for drilling and fracking would not produce a new water depletion. Of concern is that it is unclear whether current appropriations account for drilling and fracking as an appropriate use and whether current appropriations will not be exceeded as a result of drilling and fracking.

Our concerns are underscored by inconsistencies in EA No. F010-2014-0272. The BLM asserts in the EA that:

Water for drilling and completions would be sourced from a private water well that has been permitted by the State of New Mexico. The New Mexico Office of the State Engineer assigned the well the POD Number SJ 01979-S4. Approximately 1.3 million gallons of water would be used for drilling and completions per well.

EA at 30. However, a careful review of the actual water right and associated analysis related to POD SJ 01979-S4 on the New Mexico Office of the State Engineer’s website indicates that the well is not privately owned, but actually owned by the State of New Mexico Land Board. *See* Exhibit 14, New Mexico State Engineer, Conditions of Approval and Hydrologic Evaluation Memorandum. Furthermore, the 300 acre-foot water right was only recently granted and it explicitly states that it represents a new depletion of water from the San Juan River. The water right document indicates that 16.5 acre feet/year will be depleted within 40 years and 44.5 acre/feet per year within 100 years. More disconcertingly is that it appears the Engineer’s Office did not take into account the fact that drilling and fracking represents a permanent withdrawal of freshwater.

Regardless, the crux of BLM’s position, which is that a state-issued water right somehow poses no effects to threatened and endangered species in the San Juan River, is simply

²⁶ Furthermore, 1.3 million gallons per well appears to be a significant underestimate. In the Middle Mesa area of the San Juan Basin, where the BLM has approved horizontal drilling of the Mancos shale for natural gas, the agency has estimated more than five million gallons of water would be needed for each well due to the need for multiple stimulations.

unsupported. The State of New Mexico is under no obligation to consult under the Endangered Species Act or otherwise ensure that the issuance of water rights do not jeopardize the continued existence of listed species or adversely modify their critical habitat. In light of this, the BLM is obligated to consult over the indirect impacts of water withdrawals and associated depletions before it can approve any Mancos shale APDs in accordance with the Endangered Species Act.

E. Impacts to Cultural Resources

The National Historic Preservation Act (“NHPA”) imposes the requirement on federal agencies to “take into account the effect[s] of [their] Undertaking[s] on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.” 16 U.S.C. § 470f (“Section 106”). Section 106 has been characterized as a “stop, look, and listen” statute. *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 805 (9th Cir. 1999). Section 106 consultation must be performed at a time when the full range of avoidance and mitigation measures is still available to a federal agency proposing an undertaking. 36 C.F.R. § 800.1(c). “[P]roject planning activities” that “restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the undertaking’s adverse effects on historic properties” can occur only after the Section 106 consultation is complete. *Id.*

Chaco Culture National Historical Park (“CCNHP” or “the Park”) is located within the geographic area that includes lands and federal minerals under the jurisdiction of the Farmington Field Office and is within the study area for the RMP Amendment. The Park is listed on the National Register of Historic Places and is designated a World Heritage Site. Air and light pollution, noise, and vehicle traffic from oil and gas leasing, exploration, and development authorized by BLM all have the potential to adversely affect not only the Park, but also the “Greater Chaco Landscape”²⁷ which is almost fully contained within the boundaries of the Farmington Field Office. However, BLM has yet to analyze whether and to what extent the Park in particular and the Greater Chaco Landscape in general will be impacted by exploration for and development of the Mancos Shale formation. Such a “landscape level” impacts analysis is required before BLM can approve any APDs for work in the Mancos Shale formation.

None of BLM’s EAs for the APDs include any landscape-level analysis of impacts to significant cultural resources such as the Park, Chacoan Outliers, or other cultural components of the Greater Chaco Landscape. By defining the Area of Potential Effect (“APE”) for each APD as the well pad and its associated features, BLM has unlawfully limited its impacts analysis only to cultural resources within the footprint of the APD and completely ignored both the variety of landscape-level cultural resources present outside the APD footprints as well as the impacts to those resources from activities occurring within the APDs. Under Section 106 of the NHPA, the APE for purposes of assessing project impacts is defined as the geographic area/s within which

²⁷ The “Greater Chaco Landscape” includes the Park, most of the Chaco Culture World Heritage Site, several of the satellite villages (known as Chacoan Great House Communities), other resources affiliated with Chaco Canyon that have been formally designated by either Congress or BLM, and the Great North Road, which once linked Chaco Canyon with a settlement approximately 55 miles to the north known today as Aztec Ruin. The World Heritage Site designation is not limited to the Park but also includes four Chacoan Outliers (Pierre’s Site, Halfway House, Twin Angels, and Aztec Pueblo) located along the North Road and two Outliers (Kin Nizhoni and Casamero) along the South Road.

an undertaking may directly or indirectly cause alterations in the character or use of historic properties. 36 C.F.R. § 800.16(d). The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by an undertaking. *Id.* Accordingly, BLM may define the footprint of an APD as the APE for surface impacts to archaeological sites but must also include a much larger APE for noise, visual, and seismic impacts to landscape-level cultural properties that could be impacted by activities on individual APDs.

The discussion of impacts to cultural resources included in the EAs for the APDs is limited to disturbance of archaeological sites within the footprint of the APDs, and proposes moving of well pads and other infrastructure to avoid those archaeological sites. Although this mitigation measure may be appropriate for avoiding surface impacts to small, isolated sites, it does not mitigate potentially significant noise, visual, or seismic impacts to landscape-level cultural properties. In *New Mexico ex. rel. Richardson v. Bureau of Land Mgmt.*, 459 F. Supp. 2d 1102 (D.N.M. 2006), the court explicitly recognized this distinction where BLM proposed avoidance as the mitigation measure to avoid impacts to all potentially impacted cultural resources:

BLM's argument focuses on historical sites covering relatively small areas, such as discrete archaeological sites. For such sites, mitigation of impacts can be accomplished simply by moving the proposed drill site to a different location on the lease parcel. For landscape-level [properties] that may or may not be located on the leased parcel itself, however, such movement may not be adequate mitigation.

Id. at 1124-25. Therefore, a “landscape level” impacts analysis is required before BLM can approve any of the APDs because BLM has never completed such an impacts analysis. Neither the 2003 RMP nor subsequent EAs for lease sales have considered impacts to landscape-level cultural properties from oil and gas development. Moreover, BLM is now approving APDs for horizontal drilling, a technology for which the agency admits it has never analyzed impacts to the environment or cultural resources. *New Mexico ex. rel. Richardson* stands for the principle that BLM cannot limit its impacts analysis only to cultural resources present on a proposed lease parcel, and must analyze both direct and impacts to all potentially impacted cultural resources regardless of whether they are located on the lease parcel.

V. The BLM Cannot Approve APDs While Preparing an EIS for Horizontal Drilling and Fracking of Mancos Shale

In addition to the aforementioned concerns, it is unlawful for the agency to move forward with new lease sales and the proposed APDs while work on the required RMP Amendment EIS is underway. As NEPA's implementing regulations provide, “[a]gencies shall not commit resources prejudicing selection of alternatives before making a final decision ([40 C.F.R. §] 1506.1)” and, further, NEPA analyses “shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.” 40 C.F.R. §§ 1502.2(f), 1502.2(g), 1506.1.

The whole point of NEPA is to study the impact of an action on the environment *before* the action is taken. Where “[i]nterim action prejudices the ultimate decision on the program,” NEPA forbids it. 40 C.F.R. §§ 1506.1(c)(1)-(3). Action prejudices the outcome “when it tends to determine subsequent development or limit alternatives.” *Id.* This concern is particularly acute relative to alternatives. As the Supreme Court teaches, “the thrust of [NEPA] is ... that environmental concerns be integrated into the very process of agency decision-making.” *Andrus v. Sierra Club*, 442 U.S. 347, 350 (1979). Thus, while “NEPA itself does not mandate particular results, but simply prescribes the necessary process,” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989), agency adherence to NEPA’s action-forcing statutory and regulatory mandates helps achieve NEPA’s noble purpose and policies. *See* 42 U.S.C. §§ 4321, 4331. The “heart” of the NEPA process is an agency’s duty to consider “alternatives to the proposed action” and to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. §§ 4332(2)(C)(iii), 4332(2)(E); 40 C.F.R. § 1502.14(a).

An agency must “[r]igorously explore and objectively evaluate all reasonable alternatives” and specifically “[i]nclude the alternative of no action.” 40 C.F.R. §§ 1502.14(a), (d). Operating in concert with NEPA’s mandate to address environmental impacts, an agency’s fidelity to alternatives analysis allows agencies to “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public.” 40 C.F.R. § 1502.14. NEPA’s implementing regulations emphasize the importance of fully informed and well-considered conservation decisions that “foster excellent action” and “protect, restore, and enhance the environment.” 40 C.F.R. § 1500.1(c); *see also* 40 C.F.R. § 1500.2(e).

Detailed consideration of reasonable alternatives provides all interested parties with an informed basis to question initial predispositions and “to rethink the wisdom of the action.” *Nat. Resources Def. Council v. Hodel*, 865 F.2d 288, 296 (D.C. Cir. 1988); *see also Citizens Against Burlington, Inc. v. Busey IV*, 938 F.2d 190, 196 (D.C. Cir. 1991) (“the rule of reason does not give agencies license to fulfill their own prophecies, whatever the parochial impulses that drive them). Accordingly, “[t]he existence of reasonable but unexamined alternatives renders a [NEPA analysis] inadequate.” *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998) (citation omitted).

The consideration of alternatives in the Mancos Shale RMP Amendment and EIS should represent a critical component of the agency’s planning process. For example, the RMP should consider the exclusion of particularly sensitive habitats and areas in the planning area from oil and gas leasing and development, including culturally and historically important lands, roadless areas, and/or the expansion or creation of new wilderness areas. Where lands are made available to leasing and development, consideration of climate and waste mitigation practices and technologies, including gas capture and marketing plans, as well as adaptive management should be analyzed. And, as noted above, alternatives analyzing the various discount rates for the social cost of carbon protocol, as well as adjustment of EPA air quality standards for ozone should also be included in the agency’s alternatives analysis for the Mancos Shale RMP and EIS.

Proceeding with the approval of the proposed APDs—or any other major Federal action impacting resources in the planning area—is impermissible due to the inherent prejudice that this

action will cause to the pending Mancos Shale RMP Amendment, in particular the consideration or limitation of alternatives.

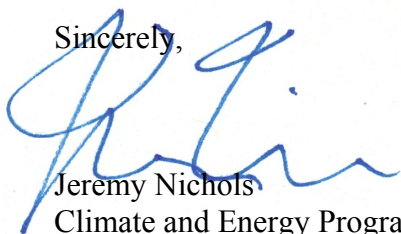
VI. Petition to Impose a Moratorium on the Approval of Mancos Shale Leases and APDs

In light of the aforementioned concerns, we request the BLM immediately impose a moratorium on the sale or issuance of new leases and the issuance of new APDs that aim to exploit—or could exploit—the Mancos shale. This request is made pursuant to the APA, which provides that any person may appear before an agency for the “presentation, adjustment, or determination of an issue, request or controversy in a proceeding[.]” 5 U.S.C. § 555(b). A moratorium is completely justified and appropriate in light of BLM’s own acknowledgement that it does not fully understand the direct, indirect, and cumulative environmental impacts that will result from approval of additional APDs and, therefore, of the leases that are a necessary predicate to the approval of such APDs. It is further justified in light of the clear and significant shortcomings of the current RMP to ensure adequate protection of air, climate, water, fish, and wildlife, as well as the failure of the RMP EIS, lease sale EAs, and the APD EAs to appropriately analyze and assess potentially significant impacts. Pursuant to the APA, we request the BLM act immediately to impose such a moratorium.

Conclusion

We request the BLM respond to our requests and concerns as soon as possible. Given that the BLM appears to be expeditiously approving APDs for Mancos shale drilling and fracking, as well as continuing to proceed with the leasing of public lands within the Mancos Shale RMP planning area, we urge the agency to employ caution and ensure that it is appropriately looking before leaping, as NEPA demands. Our requests are reasonable in light of the agency’s applicable legal duties and authorities, but more importantly they are reasonable in light of the BLM’s obligation to manage our public resources responsibly for the good of our future generations.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Nichols', is written over the printed name 'Jeremy Nichols'.

Jeremy Nichols
Climate and Energy Program Director
WildEarth Guardians
1536 Wynkoop, Suite 301
Denver, CO 80202
(303) 437-7663
jnichols@wildearthguardians.org



Mike Eisenfeld
New Mexico Energy Coordinator
San Juan Citizens Alliance
PO Box 6655
Farmington, NM 87499
(505) 325-6724
mike@sanjuancitizens.org



Erik Schlenker-Goodrich
Executive Director
Western Environmental Law Center
208 Paseo del Pueblo Sur, #602
Taos, New Mexico 87571
(575) 613-4197
eriksg@westernlaw.org

s/Anson Wright

Anson Wight
Coordinator
Chaco Alliance
4990 SW Hewett Blvd.
Portland, OR 97221
(503) 709-0038
ansonw@comcast.net

cc: Victoria Barr, District Manager, Farmington District, New Mexico BLM
Mike Nedd, Assistant Director, Minerals and Realty Management, BLM