BEFORE THE REGIONAL FORESTER
OF THE ROCKY MOUNTAIN REGION
OF THE UNITED STATES FOREST SERVICE

WILDEARTH GUARDIANS, DEFENDERS OF WILDLIFE, HIGH COUNTRY CITIZENS' ALLIANCE, ROCKY MOUNTAIN WILD, and SIERRA CLUB, Appellants, v. SHERRY HAZELHURST, Acting Supervisor, Grand Mesa-Uncompahgre-Gunnison National Forest, Deciding Official.	)	**Appeal of the Record of Decision for Federal Coal Lease Modifications COC-1362 & COC-67232 (August 2, 2012)**

APPELLANTS' STATEMENT OF REASONS AND REQUEST FOR RELIEF

Submitted via email and certified U.S. Mail on September 24, 2012 to:

Appeals Deciding Officer
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DECISION APPEALED

Appellants WildEarth Guardians et al. file this appeal of the Grand Mesa-Uncompahgre-Gunnison ("GMUG") National Forest's August 2, 2012 Record of Decision ("ROD") consenting to Federal Coal Lease Modifications COC-1362 & COC-67232 ("Lease Modifications"). Ms. Sherry Hazelhurst, Acting Forest Supervisor of the GMUG National Forest is the "Responsible Official" who signed the decision. This appeal is filed pursuant to 36 C.F.R. § 215. The decision being appealed, as described on page 4 of the ROD, is the Forest Service's selection of the Proposed Action Alternative, Alternative 3. That decision provides the Forest Service's consent to the Bureau of Land Management to lease: (1) 800 acres of Forest Service lands included in Federal Coal Lease Modification COC-1362; and (2) 921 acres of Forest Service lands included in Federal Coal Lease Modification COC-67232.[1] Of these 1,722 cumulative acres, approximately 1,700 acres are within the Sunset Roadless Area.[2] The decision will provide Mountain Coal Company, LLC ("MCC") with access of to approximately 10.1 million tons of federally-owned coal within the two lease modification areas, and will result in the daily venting of millions of cubic feet of methane, a potent greenhouse gas, directly into the atmosphere for over a year and a half; the mine vented an average of 7.5 million cubic feet of methane daily in early 2010.[3] The decision will also allow MCC to mine an additional 8.9

[1] Record of Decision, Federal Coal lease Modifications COC-1362 & COC-67232 (Aug. 2, 2012) at 2 ("ROD").

[2] ROD at 3.

[3] Final Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2012) ("FEIS") at 30, 38; MCC 2010 First Quarter Methane Release Report, attached as Exh. 1.

million tons of coal on adjacent private lands and on the parent coal leases.[4] The Forest Service predicts that the Lease Modifications will lead to construction of 48 one-acre pads for methane drainage wells (MDWs), and 6.5 miles of road within the Sunset Roadless Area, including within lands found to be "capable" of wilderness protection.[5]

This appeal is timely filed pursuant to 36 C.F.R § 215.15. Notice of the ROD was published in the Grand Junction Sentinel, the newspaper of record, on August 10, 2012. See also 77 Fed. Reg. 47,839 (Aug. 10, 2012).

Further, the Appellants raised each of the issues below in comments on the proposed action, or raises argument to respond to statements or findings made by the Forest Service for the first time in the FEIS or ROD.

APPELLANTS

WildEarth Guardians is a registered non-profit corporation whose purpose is the conservation of natural resources. With more than 4,500 members in the United States, WildEarth Guardians's mission is to protect and restore the wildlife, wild places, and wild rivers of the American West. WildEarth Guardians is headquartered in Santa Fe, New Mexico, and the group has offices in Denver, Colorado and Phoenix, Arizona. Through its Climate and Energy Program, WildEarth Guardians works to safeguard the climate, clean air, and communities of the American West by promoting a sensible transition to renewable energy. WildEarth Guardians provided written comments to the Forest Service on May 20, 2010 in response to scoping; filed a

[4] FEIS at 54 ("leasing and development of the lease modifications also allow for the production of 5.6 million tons of fee coal on adjacent lands … as well as an additional 3.3 million tons from existing adjacent federal coal reserves").

[5] FEIS at 54, 167.

successful administrative appeal of the November 2011 Decision Notice; and provided written comments on the draft environmental impact statement ("DEIS") on July 9, 2012.[6]

We designate WildEarth Guardians the "Lead Appellant" for this appeal, pursuant to 36 C.F.R. § 215.14(b)(3).

Sierra Club is a national nonprofit organization of approximately 625,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club's concerns encompass climate change, air quality impacts, water quality, wildlife, and other environmental concerns. The Sierra Club's highest national priority campaign is its "Move Beyond Coal" Campaign, which aims to transition the nation away from coal and toward clean energy solutions. The Rocky Mountain Chapter of the Sierra Club has approximately 16,000 members in Colorado. Sierra Club provided written comments to the Forest Service on May 20, 2010 in response to scoping; filed a successful administrative appeal of the November 2011 Decision Notice; and provided written comments on the draft environmental impact statement ("DEIS") on July 9, 2012.

Rocky Mountain Wild ("RMW") is a non-profit environmental organization based in Denver and Durango, Colorado, that works to conserve and recover the native species and ecosystems of the Greater Southern Rockies using the best available science. RMW was formed in July 2011 by the merger of two organizations, Center for Native Ecosystems ("CNE") and Colorado Wild, and is the legal successor to both parties. Colorado Wild has worked for over a decade to protect, preserve, and restore the native plants and animals of the Southern Rocky

[6] Appellants also provided supplemental comments to the Forest Service before the November 8, 2011 Decision Notice. Those comments are in the record.

Mountains. Colorado Wild, one of RMW's predecessors in interest, provided written comments to the Forest Service on May 20, 2010. Rocky Mountain Wild filed a successful administrative appeal of the November 2011 Decision Notice, and provided written comments on the DEIS on July 9, 2012.

Defenders of Wildlife ("Defenders") is a national nonprofit organization dedicated to the protection and restoration of all native wild animals and plants in their natural communities. Based in Washington, D.C., Defenders has over 387,000 members across the nation, including over 11,000 members in Colorado. Defenders provided written comments to the Forest Service on May 20, 2010 in response to scoping; filed a successful administrative appeal of the November 2011 Decision Notice; and provided written comments on the DEIS on July 9, 2012.

High Country Citizens' Alliance ("HCCA") is a grass-roots conservation organization based in Crested Butte, Gunnison County. Founded in 1977, and with over 600 members, HCCA is committed to championing the protection, conservation and preservation of the natural ecosystems within Gunnison County and the Upper Gunnison River Basin. HCCA provided written comments to the Forest Service on May 20, 2010 in response to scoping; filed a successful administrative appeal of the November 2011 Decision Notice; and provided written comments on the DEIS on July 9, 2012.

Members of the above-listed organizations use lands in the West Elk lease modification areas and environs for hiking, photography, wildlife viewing, and other recreational, aesthetic, educational, and spiritual purposes, and intend to continue to do so in the future.

I. THE FINAL EIS FAILS TO DISCLOSE THE DIRECT, INDIRECT AND/OR CUMULATIVE IMPACTS OF MINING ON PRIVATE AND ADJACENT FEDERAL LAND THAT CANNOT OCCUR WITHOUT THE LEASE MODIFICATIONS.

An EIS must analyze the direct, indirect, and cumulative impacts of a proposed action. Colo. Envtl. Coal. v. Dombeck, 185 F.3d 1162, 1176 (10th Cir. 1999); see also 40 C.F.R. § 1508.25(c) (when determining the scope of an EIS, agencies "shall consider" direct, indirect, and cumulative impacts). Direct effects "are caused by the action and occur at the same time and place," while indirect effects "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable ... [and] may include growth inducing effects." 40 C.F.R. § 1508.8; see also Utahns for Better Transp. v. U.S. Dep't of Transp., 305 F.3d 1152, 1174 (10th Cir. 2002), as modified on reh'g, 319 F.3d 1207 (10th Cir. 2003). Cumulative impacts are "the impact[s] on the environment which result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. Forest Service regulations define reasonably foreseeable future actions as "[t]hose Federal or non-Federal activities not yet undertaken, for which there are existing decisions, funding, or identified proposals." 36 C.F.R. § 220.3 (emphasis added).

The FEIS fails to properly disclose the direct, indirect, or cumulative impacts of the Lease Modifications on a number of resources.

The FEIS states that "the leasing and development of the lease modifications also allow for the production of 5.6 million tons of fee coal on adjacent [private] lands ... as well as an additional 3.3 million tons from existing adjacent federal coal reserves." FEIS at 52. The FEIS confirms that coal on private lands and adjacent public lands cannot be accessed unless MCC wins the right to mine the Lease Modifications area: "Without the lease modifications, coal on

existing federal leases and private lands would be bypassed because of current panel alignment on parent leases." FEIS at 531.[7] The FEIS considers the mining of the private land and adjacent coal as a direct or indirect economic benefit of the Lease Modifications, and quantifies that allegedly beneficial impact. FEIS at 190.

Thus, the Lease Modification is the "but for" cause of, and the on/off switch for, impacts that will result from mining the coal on private and adjacent public lands. Further, given the geography of the Lease Modifications, the private land, and the orientation of the mining panels, MCC may be required to mine the private lands if it is to access the coal in the Lease Modifications.[8]

The effects of mining these adjacent private and public lands should properly be characterized as direct or indirect effects of the alternatives, since the impacts are a direct result of approving the lease modifications.[9] See 40 C.F.R. § 1508.8.

At an absolute minimum, the Forest Service was required to disclose and analyze the cumulative impacts of coal mining made possible outside of the Lease Modifications area as impacts to those lands also fall within the definition of reasonably foreseeable future actions.[10] Regardless of whether they are direct, indirect, or cumulative, though, the Forest Service should

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[7] Statements in the project record support the FEIS's statement. See letter of H. Whitman, Mount Gunnison Fuel Co. (May 17, 2012) (without lease modifications, 5.6 million tons of private coal will be bypassed), attached as Exh. 2.

[8] Because neither the DEIS nor the FEIS contains a map showing the location of the private coal to be mined, or of MCC's planned orientation of the coal panels, is it impossible for the public or agency decisionmakers to understand how mining of the Lease Modifications and the private land are related. The failure to disclose such information violates NEPA's "hard look" mandate.

[9] The lease modifications would extend mine operations by 1.6 years, while access to adjacent lands would add 1.3 years to that figure. FEIS 52.

[10] For some resources, the FEIS treats impacts from these nearby operations as cumulative. See, e.g., FEIS at 104, 118, 125, 161.

have disclosed these impacts in sufficient detail to allow informed decision-making and public participation. Colo. Envtl. Coal., 185 F.3d at 1172, 1176.

The FEIS fails to do so.

First, and most troubling, the FEIS does not contain any map or other information displaying the location of the additional minerals to be mined, and where those areas are in relation to the Lease Modifications. The FEIS states only vaguely that the federal leases from which additional coal will be mined are somewhere to "the north," and that the adjacent private land from which additional coal will be mined is to "the west." FEIS at 51. What maps the FEIS includes fail to display any information concerning the location for the adjacent recoverable coal outside of the Lease Modifications. See, e.g., FEIS at 36, 89, 107, 119, 162, 169, 171. The FEIS is able to calculate the volume of coal to be removed from private or adjacent federal land. The Forest Service makes assumptions about the precise number and configuration of underground panels from which MCC will mine coal to inform its evaluation of impacts within the Lease Modifications area, and MCC has divulged its proposal for such panels to the agency.[11] The Forest Service also estimates, in general terms, the habitat type that may be bulldozed for roads and MDWs on the private and adjacent federal land.[12] Yet despite all this data and analysis for

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[11] FEIS at 51 ("This RFMP for the lease modifications assumes the coal in the E seam would be extracted from portions of five longwall panels trending northwest-southeast."). See also MCC, Map, Projected and Maximum E-Seam Mine Layout (July 23, 2010) (MCC map showing proposed mine panels under the Lease Modifications area), attached as Exh. 3.

[12] See FEIS at 121 ("For private lands and adjacent parent lease areas, a total of 63 additional acres of vegetation loss is estimated. Of this, there would be approximately 41 acres of oak, 19 acres of aspen, 2 acres of spruce/fir, and 2 acres of shrub types. It is estimated that vegetation loss on private and parent lease surface would consist of about 42 acres for MDWs and 21 acres for roads."). The FEIS states that "estimates for vegetation loss on adjacent private lands and parent lease acres were extrapolated using proportional acres of existing vegetation types." Id. So the Forest Service must have some idea of the extent of vegetation type – and thus the location – of the private land and federal lands outside the Lease Modifications areas where these impacts will occur. Yet the FEIS fails to disclose that information to the public.

impacts within the Lease Modifications area, the FEIS fails to show even generally from where on private or adjacent federal land the coal may be removed.[13] The location of the private coal and adjacent federal coal to be mined is critical for understanding the potential impacts of all of the mining when taken together on watersheds, forests, soil types, topography, wildlife, etc. What geology, streams, roads, ditches, trails, habitat, viewsheds, and other resources are found in these areas? Without knowledge of the juxtaposition of the impacts within the lease modifications and those outside the lease modification that will occur as a result of this decision, neither the public nor the decisionmaker can understand whether specific watersheds, streams, habitats, roadless lands, and other resources are likely to see additional or magnified impacts. Subsidence impacts and impacts from MDW and road construction are tied directly to the location of the coal to be mined, as are the likely location of roads and MDWs. Yet the FEIS fails to disclose or estimate the location of that coal or of the subsidence or road and MDWs outside the lease modifications. The failure to provide such information violates NEPA.[14]

The presence of an important population of imperiled Colorado River cutthroat trout on the adjacent private land demonstrates the importance of displaying where impacts on private lands will occur. A July 2012 map in the project record indicates the existence of a "Cutthroat

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[13] At least one map discloses that private land exists adjacent to the Lease Modifications area, see FEIS at 169, but the FEIS never discloses the location on private land of the 5.6 million tons of private coal to be mined.

[14] In response to comments, the FEIS claims that it is simply impossible to determine the location of the impacts from additional mining on private and adjacent federal lands. FEIS at 531 ("At this leasing stage there are no mine plans approved for the private lands as they rely solely on a preliminary design as is the case on the lease modification areas, so it is impossible to determine exactly where, of [sic] if, surface disturbance would occur."). This is an arbitrary explanation, given that the entire FEIS is built around a reasonably foreseeable mine plan (RFMP) that makes precisely such assumptions for impacts within the Lease Modifications area. The FEIS does not – and cannot – explain why the Forest Service could develop a RFMP for the Lease Modifications area but could not do so for the other lands likely to be mined as a result of the leases.

Trout Conservation Population" in the southwest corner of Section 22, less than a half-mile from the southwest corner of the lease modification expanding COC-67232.[15] Private land directly adjacent to the Lease Modifications includes the watershed for East Minnesota Creek, as well as a portion of the Creek itself, where the Conservation Population is found.[16] Depending on the location of the 5.6 million tons of private coal to be mined under the selected alternative, road and MDW construction may occur next to East Minnesota Creek, causing sedimentation that harms the cutthroat population there. The fact that the FEIS fails to even mention the native population of Colorado River cutthroat in this stream demonstrates that the agency has failed to take the 'hard look' NEPA requires.

Second, the Forest Service fails to disclose the potential impacts of private land and adjacent public land mining on subsidence, except in the most cursory and un-illuminating way. The FEIS estimates subsidence from private and adjacent Federal lands combined. See FEIS at 91 ("If the tracts are leased, subsequent underground longwall mining would cause approximately 1500 acres of subsidence (~950 acres from mining COC-1362, ~150 acres from mining COC-67232, and ~400 acres from mining adjacent reserves in existing federal leases and adjacent private lands)."[17] This information lumps together subsidence information for both the private and adjacent public lands. The FEIS fails to provide any explanation for doing so. Further, the FEIS provides no information disclosing where this subsidence is likely to occur. Will it occur under major roads? Near watersheds already burdened by other impacts? The

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[15] Compare FEIS at 162 with U.S. Forest Service Map, Cutthroat Trout Conservation Population in Relationship to Lease Modification Project Area (July 19, 2012), attach as Exh. 4.

[16] Id.

[17] The FEIS makes similarly vague representations in numerous other locations when purporting to assess the direct and indirect impacts of the Lease Modifications. See FEIS at 100, 101, 109, 111, 113-14, 115, 116, 160, 185-86.

Forest Service's failure to disclose the location of subsidence is particularly striking because the DEIS contained a map displaying subsidence impacts on the lease modification areas and adjacent Federal and private land. See DEIS at 50. Without explanation, the Forest Service omitted that map, entitled "Projected subsidence," from the FEIS.

Third, while the FEIS estimates the total acreage of ground disturbance likely to accompany MDW pads and road construction on private and adjacent public lands outside of the Lease Modifications – 42 acres for MDW pads and 21 acres for roads to access them – the FEIS again fails to display even generally where these impacts are likely to occur. See FEIS at 92. Further, the FEIS again fails to split out on which lands the MDW pads and roads are likely to occur – private or Forest Service land, instead lumping all the impacts together. The FEIS does so despite the fact that it is far from clear that the private and public lands outside the lease modifications that can be mined are even contiguous with each other.

Fourth, the FEIS calculates air quality impacts by assuming that the West Elk Mine's current emission rates would extend for an additional 1.6 years due to the lease modifications. FEIS at 81 ("direct, indirect, and cumulative" air pollution impacts of lease modifications would be the same as that of the no action alternative "except that [pollution] would continue for an additional 1.6 years"). But the Lease Modification will extend the life of the Mine for an additional 2.9 years when mining of the private and federal lands outside the Lease Modifications is taken into account. See FEIS at 52 (lease modifications would extend the life of the mine by 2.9 years).[18]

[18] While the FEIS, in responses to comments, asserts that the cumulative effects section of the air quality analysis "addresses the duration of the lease modifications plus additional reserves on federal and fee lands," FEIS at 516, the Forest Service made no relevant changes to the text of the FEIS, which, like the DEIS, fails to account for the extension of air pollution due to the mining of lands outside the Lease Modifications.

Fifth, the FEIS fails to properly disclose the impacts of adjacent mining operations on the threatened Canada lynx and other sensitive species. While conceding that the construction of MDWs and grazing could alter vegetation on private land, the FEIS asserts that these lands are "already modified through long-term human use." FEIS at 131. This overlooks the possibility, however, that subsidence or methane drainage facilities and new roads on private or adjacent public land may impact lynx habitat. Additional data in one table in the FEIS may address the potential for alteration of lynx habitat. But Table 3.10a is hardly clear. It contains new data indicating that in addition to the estimated 75 acres of disturbance of suitable lynx habitat within the Lease Modifications area, it is "foreseeable" that 10 acres of suitable lynx habitat on private lands will be affected, and similarly "foreseeable" that 7 acres of suitable lynx habitat on "Parent Lease COC-1362" will be impacted by surface impacts. FEIS at 127-28. The FEIS does not disclose how the Forest Service arrived at these numbers. Nor are these figures reflected in the FEIS's narrative of the Lease Modifications' direct, indirect and cumulative impacts to lynx; the FEIS continues to assume that the Lease Modifications will only result in the direct loss of up to 75 acres of suitable lynx habitat within the Lease Modifications area. See FEIS at 129, 130.

The FEIS also lacks any discussion of the effects of mining on adjacent lands on sensitive species, whereas the FEIS often provides specific numbers of acres of habitat that may be lost within the lease modifications. See, e.g., FEIS at 138 (project will result in loss of 68 acres of northern goshawk habitat; figure omits potential loss of habitat on private or adjacent lands); id. at 139 (similar analysis for boreal owl); id. at 141 (similar analysis for olive-sided flycatcher); id. at 142 (similar analysis for flammulated owl); id. at 146 (similar analysis for purple martin).

Sixth, although the FEIS purports to address the "cumulative impacts" of mining activities on adjacent lands together with the effects from the Lease Modifications under the

various alternatives in its discussions of certain resources, that "analysis" is limited to the following vague statement that was cut-and-pasted throughout the FEIS:

> If the lease modifications are granted[,] effects similar to those described in Alternative 2, 3, and 4 could occur on the adjacent private land while mining 5.6 million tons of private coal reserves and on parent leases where additional 3.3 million tons federal coal reserves may be mineable. Postlease surface disturbances associated with mining those lands is estimated to be approximately 63 acres (42 acres of MDW pads, and 21 acres of MDW access).

FEIS at 104 (discussing cumulative impacts on soils); see also id. at 92 (making nearly identical statement re: topographic and physiographic environment); id. at 97 (making nearly identical statement re: geology); id. at 118 (making nearly identical statement re: watersheds); id. at 161 (making nearly identical statement re: recreation); id. at 125 (making nearly identical statement re: vegetation); id. at 186 (making nearly identical statement re: visual resources). But without reference to the slope, soil type, streams and ponds, or visual values of the private or adjacent lands, the Forest Service can have no support for its contention that the impacts outside of the Lease Modifications will be "similar." Because the FEIS fails to inventory or describe the resources at stake on the adjacent lands, or even provide an idea for where those lands are, the FEIS fails to take the required "hard look" at the direct, indirect, or cumulative effects of Alternative 3.

Given the fact that adjacent lands contain nearly as much coal as the lease modifications themselves (8.9 million tons to 10.1 million tons) and that mining these adjacent lands would almost double the extension of mining operations (from 1.6 years to 2.9 years), FEIS at 52, the Forest Service cannot claim that it simply found the direct, indirect, or cumulative impacts from nearby mining to be insignificant. Nor would it be burdensome to consider these impacts in greater depth, since they are supposedly very similar to those of Alternative 3.

Whatever the burden, NEPA requires the Forest Service to disclose the direct, indirect, and cumulative impacts of a proposed action. The FEIS's failure to analyze the impacts of mining an additional 8.9 million tons of coal outside the Lease Modifications – impacts that result directly from the lease modification decision – fails to take the hard look at such impacts as NEPA requires.

II. THE FEIS'S SOCIOECONOMICS ANALYSIS ARBITRARILY FAILS TO ACCOUNT FOR THE LEASE MODIFICATIONS' COSTS, AND INFLATES BENEFITS.

Regulations implementing NEPA require that the action agency disclose the direct, indirect, and cumulative effects of actions, including "economic, [and] social" impacts. 40 C.F.R. § 1508.8. In addition, while NEPA does not require a specific cost-benefit analysis, regulations require that when an agency prepares such an analysis that it "discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities." 40 C.F.R. § 1502.23. Federal courts have struck down NEPA documents because economic and socio-economic benefits were not properly quantified. See, e.g., Sierra Club v. Sigler, 695 F.2d 957 (5th Cir. 1983) (setting aside analysis that presented project benefits but not costs). An analysis that overstates the economic benefits of a project fails in its purpose of allowing decisionmakers to balance environmental harms against economic benefits. Hughes River Watershed Conservancy v. Glickman, 81 F.3d 437, 446-48 (4th Cir. 1996) (setting aside EIS). Similarly, an EIS that relies upon misleading economic information may violate NEPA if the errors subvert NEPA's purpose of providing decisionmakers and the public an accurate assessment upon which to evaluate the proposed project. Oregon Envtl. Council v. Kunzman, 817 F.2d 484, 492 (9th Cir. 1987).

Federal courts have also specifically set aside agency action where the agency failed to account for the social cost of carbon. See, e.g., Ctr. for Biological Diversity v. Nat'l Highway

Traffic Safety Admin., 538 F.3d 1172 (9th Cir. 2008) (agency cost-benefit analysis violated Energy Policy and Conservation Act where the agency assigned a monetary value of zero to the benefits of reduced greenhouse gas emissions).

A. The FEIS Arbitrarily Fails To Account For The Costs Of The Lease Modifications.

The DEIS contained a section analyzing the impacts of various alternatives on socioeconomics. DEIS at 147-52 (Sec. 3.33). This section contained a sub-section entitled "Benefit-Cost Analysis" for each of the action alternatives. DEIS at 151-52. In that analysis, the DEIS estimated the following benefits:

- The value of coal recovered (in $);
- The value of payroll (in $);
- The value of materials, supplies and services purchased (in $); and
- The value of royalties (in $).

DEIS at 151-52. The DEIS considered two potential "costs":

- The cost of greenhouse gas (GHG) emissions (in $, based on a per-ton social cost of CO_2 as estimated by an Interagency Working Group studying the "social cost of carbon"); and
- "Minor costs due to 72 acres of disturbance on National Forest System Lands (resulting in temporary impacts to hunting, recreation, aesthetics, and livestock grazing)."

Id. at 152.

Several commenters took issue with the DEIS's analysis of costs and benefits. Appellants here argued that the DEIS's analysis of socioeconomics was flawed because, inter alia, it failed to consider the costs of carbon produced by coal combustion, and that the DEIS

used a figure for the social cost of carbon that was too low.[19] Attorneys representing Mountain Coal Company also argued that the Forest Service should address the costs of coal combustion, though they suggested that coal combustion might have offsetting benefits. FEIS at 538-39 (reprinting comments of M. Drysdale).

In response, the FEIS modified its evaluation of the project's benefits by adding new information about the project's economic benefits. The FEIS retains all of the estimates of the project's alleged economic benefits provided in the DEIS– precisely providing numbers for the value of: coal recovered; payroll; materials, supplies and services purchased; and royalties. FEIS at 188. The FEIS also includes new information concerning direct economic benefits, the value of bonus bids, and rental payments. FEIS at 188-91.

But rather than justify or improve its analysis of costs, the Forest Service responded by completely eliminating any estimate of costs from the FEIS's analysis of the alternatives' economic impacts. See FEIS at 189-91. Where the DEIS estimated the costs of carbon in line with a federal interagency task force report, the FEIS's entire discussion of costs is narrative and incomplete:

> Social and economic costs associated with this alternative are primarily due to the 72 acres of disturbance on National Forest System Lands, resulting in temporary impacts to recreation, hunting, aesthetics, wilderness character, and grazing. However, these impacts are expected to be minimal and short-term.

FEIS at 191. This discussion is essential the same, truncated narrative of non-GHG costs associated with the Lease Modifications in the DEIS. The FEIS contains no explanation for the omission of the social costs of carbon, despite the fact that in its response to comments on the DEIS, the agency promised that "[a]dditional information has been added to FEIS to reflect

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[19] See letter of E. Zukoski, Earthjustice on behalf of High Country Citizens' Alliance, to GMUG National Forest (July 9, 2012) at 51-53 ("HCCA Comment Letter"), attached as Exh. 5; FEIS at 536-38 (reprinting relevant section of HCCA Comment letter).

social costs of coal and coal combustion," and that "social costs were discussed in the FEIS (Section 3.33)." FEIS at 536 (emphasis added), 539 (emphasis added). But neither the FEIS in general, nor the section of the FEIS the Forest Service cites specifically, contains any analysis at all of social costs. The words "social cost" appear nowhere in the FEIS except in the responses to comments. In sum, the FEIS thus only considers the alleged economic benefits of coal mining and combustion, but not one of the largest and most obvious costs. FEIS at 189-91.

The FEIS's myopic analysis – considering and quantifying only alleged economic and social benefits but ignoring relevant costs – improperly skews the agency's inquiry, and ignores NEPA's mandates to take a hard look at all of the impacts of each of the alternatives. The Forest Service's elimination of the cost-benefit information concerning the social cost of carbon without explanation is arbitrary and capricious.

The complete elimination of analysis of the social costs of carbon is particularly troubling given that the costs of carbon for the proposed lease modifications apparently outweigh the project's direct economic impacts. The FEIS discloses that combusting one year of coal from the West Elk Mine will result in, at a minimum, 18.2 million tons of CO_2 pollution. FEIS at 80 (Table 3.3k).[20] The selected alternative will result in the mine operating an additional 2.9 years, resulting in a minimum of 52.78 million tons of CO_2 emissions for the life of the project. FEIS

[20] The FEIS suggests that its CO_2 emissions estimates may be high because technical fixes may reduce such emissions. See FEIS at 79 ("a power plant that is equipped with selective catalytic reduction or practices CO_2 capture would ultimately release much smaller quantities of nitrogen oxides and CO_2 than a power plant lacking such controls." (emphasis added)). But selective catalytic reduction measures do not reduce CO_2 reduce emissions, nor are we aware of any power plant in the country that has put in place, or that proposes to put in place, successful carbon capture technology. EPA has prepared a series of technical "white papers" summarizing available and emerging technologies to reduce GHG emissions in various industrial sectors. EPA never once suggests that SCR is a GHG control technology at power plants or large industrial boilers that combust coal. See, e.g., http://www.epa.gov/nsr/ghgpermitting.html (last viewed Sept. 23, 2012).

at 190 (selected alternative will extend mine life by 2.9 years). Assuming, as the DEIS does, that the social cost of carbon is $21 per ton of CO_2 emissions, the social cost of carbon emitted by coal combustion for the selected alternative is $1.11 billion.[21] Using the $21/per ton of CO_2 figure for carbon's social costs – $1.11 billion – is greater than the FEIS's estimate of $1.08 billion for the Lease Modifications' direct economic impacts. See FEIS at 190.

But even this figure for social costs of carbon is low. First, this figure addresses only the cost of carbon combustion, omitting the more than 1.1 million – 3.6 million tons of additional CO_2-equivalent omissions that will likely result from the Lease Modifications' methane pollution.[22] Second, the $1.11 billion figure is based of the cost of carbon remaining a constant

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[21] See Coal Lease Modifications Draft EIS at 151, 152 (assuming social cost of carbon is $21 per ton). 18.2 million tons of CO_2 / year * 2.9 years * $21 per ton of CO_2 = $1.108 billion. Economists have argued that the social cost of carbon is far greater than the $21 per ton of CO_2 assumed by the DEIS. See HCCA Comment Letter (Exh. 5) at 51-53 See also F. Ackerman & E. Stanton, Climate Risks and Carbon Prices: Revising the Social Costs of Carbon (2010) (the social cost of carbon could be as over $800 per ton of CO_2 equivalent), attached as Exh. 6; P. Epstein et al., Full cost accounting for the life cycle of coal, Ann. N.Y. Acad. Sci. (2011) (estimating the social cost of coal at between $10 and $100 per ton of CO_2 equivalent), attached as Exh. 7.

In any event, the cost of carbon is projected to rise over time. In a recent rulemaking, the Department of Transportation and EPA assumed the social cost of CO_2 was $23 per ton in 2012, and would reach $25 per ton in 2015, and $26 per ton by 2017. See Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA), Final Rule, 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards (Aug. 28, 2012) (excerpts) (pre-publication version), attached as Exh. 8 (assuming 3% discount rate), available online at www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/2017-25_CAFE_Final_Rule.pdf. Coal from the Lease Modifications would likely be mined from 2013 to 2016, FEIS at 190, and thus delivered to market and combusted at about the same time. The social cost of carbon for the combustion of Lease Modification coal, using the DOT and EPA figures, should be between $23 and $26 per ton.

[22] The FEIS states that the West Elk Mine released 1.23 million tons of CO_2 equivalent of methane in 2011. See FEIS at 75, 506. Assuming a similar amount is emitted over the 2.9 years that the Lease Modification will add to the mine's life, total CO_2 methane emissions over the project's life are 3.58 million tons of CO_2e.

$21 per ton of CO_2 over the three- to four-year period the coal will be mined and subsequently combusted. This ignores the fact that the interagency study relied on by the Forest Service predicted that the social cost of carbon would rise to $24 in 2015 according to EPA.[23] Third, as Appellants noted in their comments on the DEIS, the social costs of carbon are likely far higher than those predicted by the interagency study the DEIS relies on, according to several analysis that the agency neither acknowledges nor responds to.[24]

Since the Forest Service estimated the tons of CO_2 equivalent from methane pollution and coal combustion, it easily could have, and should have, weighed the Lease Modifications' economic benefits – which the FEIS carefully catalogues in narrative form, numerically by dollar amount, and in a table (see FEIS at 188-92) – against the project's considerable, and perhaps even greater, costs. To identify and analyze just the value of the project's economic benefits while ignoring its calculable, and considerable, costs – something the agency began to do in the

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Elsewhere, the FEIS estimates that "383,250- 574,875 tonnes of CO_2 equivalent [of methane are] released per year based on ongoing mine activities." FEIS at 40. Assuming this lower figure is correct, a similar amount is emitted over the 2.9 years that the Lease Modification will add to the mine's life, total CO_2 methane emissions over the project's life are 1.11 million to 1.21 million tons CO_2e.

The FEIS never explains the disparity between the 2011 observed CO_2e emissions and the projected emissions over the life of the project, itself a violation of NEPA.

[23] See supra note 21. See also Interagency Working Group on Social Cost of Carbon, Technical Support Document (Feb. 2010) at 1, 28 (at 3% discount rate, concluding social cost of CO_2 would reach $23.80 per ton in 2007 dollars by 2015, an increase from the social costs in 2010 of $21 per ton), available online at http://www.epa.gov/otaq/climate/regulations/scc-tsd.pdf, and attached as Exh. 9.

[24] See supra note 21. A new study released last week also concludes that the $21 per ton of CO_2 figure used in the DEIS for the social cost of carbon is far too low. See L. Johnson & C. Hope, The social cost of carbon in U.S. regulatory impact analyses: an introduction and critique, J. Envtl. Stud. & Sci. (Sept. 9, 2012) (finding a social cost of a ton of CO_2 emissions to be 2.6 to over 12 times larger than the Interagency Working Group's central estimate of $21 per ton of CO_2) available online at http://www.springerlink.com/content/863287021p06m441/fulltext.pdf?MUD=MP (last viewed Sep. 23, 2012), attached as Exh. 10.

DEIS – fundamentally corrupts the NEPA process. Hughes River Watershed Conservancy, 81 F.3d at 446-48; Oregon Envtl. Council, 817 F.2d at 492 (9th Cir. 1987).[25]

The Forest Service's failure to address the costs of carbon combustion and methane pollution in the FEIS also violates NEPA because the agency fails to address or respond to scientific studies showing the cost of carbon are higher than zero, which the FEIS apparently assumes, not to mention higher than the interagency study initially relied upon by the Forest Service. NEPA requires agencies to explain opposing viewpoints and their rationale for choosing one viewpoint over the other. 40 C.F.R. § 1502.9(b) (requiring agencies to disclose and discuss responsible opposing viewpoints). See also Ctr. for Biological Diversity v. U.S. Forest Serv., 349 F.3d 1157, 1168 (9th Cir. 2003); Silva v. Lynn, 482 F.2d 1282, 1285 (1st Cir. 1973) (the NEPA requirement to prepare an EIS "helps insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug."); Sierra Club v. Eubanks, 335 F. Supp. 2d 1070, 1076 (E.D. Ca. 2004) ("[c]redible scientific evidence that [contradicts] a proposed action must also be evaluated and considered."); Seattle Audubon Soc'y v. Lyons, 871 F. Supp. 1291, 1318 (W.D. Wash. 1994) ("[the EIS] must also disclose responsible scientific opinion in opposition to the proposed action, and make a good faith, reasoned response to it."); Seattle Audubon Soc'y v. Moseley, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) ("[t]he agency's explanation is insufficient under NEPA – not because experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections."); Friends of the Earth v. Hall, 693 F. Supp. 904, 936-37 (W.D. Wash. 1988) (finding EIS

[25] The FEIS, without explanation, fails to account for another cost identified by Appellants in comments on the DEIS. The Lease Modifications will result in the loss of a federally owned mineral resource – natural gas – and thus will result in a loss of royalties that could otherwise be captured if the methane were not wasted to facilitate coal mining. See HCCA Comment Letter (Exh. 5) at 52.

inadequate because it addressed contrary scientific evidence and criticism in an appendix rather than in the body of the EIS). By sweeping the entire issue of the costs of the Lease Modifications under the rug, and ignoring the many studies showing such costs are real and quantifiable, the Forest Service violates NEPA.

Finally, the Forest Service cannot argue that it may ignore the social costs of carbon emissions because such costs are difficult to determine. Regulations implementing NEPA state that if information relevant to a comparison of the alternatives is "incomplete or unavailable," the agency "shall" obtain the data if the "overall costs" of doing so "are not exorbitant." 40 C.F.R. § 1502.22(a). Here, the costs of estimating the social costs of carbon are small; the agency must simply estimate CO_2 pollution from mining and combusting and use a defensible figure for the social cost of CO_2 per ton. All of these estimates are readily available to the Forest Service.

Further, even if the overall costs of estimating the costs of carbon were exorbitant, "or the means to obtain [such information] are not known," the Forest Service must include in the FEIS:

> (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

40 C.F.R. § 1502.22(b). The FEIS contains none of these statements; it simple omits the relevant information concerning the costs of carbon. This omission violates NEPA.

The Forest Service cannot excuse the omission of the economic and social costs of approving the Lease Modifications as mere nit-picking of the FEIS. The projects economic costs and benefits are at the core of the Forest Service's choice among alternatives. In making her

decision on the Lease Modifications, the Forest Supervisor relied heavily on the project's alleged, estimated economic benefits, despite the fact that she had chosen to ignore or leave undisclosed the economic and social costs of carbon. For example, the Supervisor states in the agency's Record of Decision that she did not adopt the "no action" alternative because "it does not achieve social and economic objectives in the area. Estimates suggest nearly a billion dollars in lost revenues, royalties, payroll and local payment for goods and services would be foregone by implementing this Alternative."[26] Similarly, in justifying the agency's selection of Alternative 3, the Supervisor states: "I determined that the economic benefits of Alternative 3 outweigh the environmental effects of disturbing a small amount of NFS lands for a short period of time as assessed in Alternative 4."[27] Here, the Supervisor states that she based her decision in comparing Alternatives 3 and 4 on a lack of any additional costs of Alternative three other than land disturbance in the Lease Modifications area, failing to factor in the additional costs of CO_2 emissions under Alternative 3. Because the Forest Service never analyzed the considerable social and economic costs of the Lease Modifications, and did so without explanation after beginning such an analysis in the Draft EIS, the most important basis for the agency's choice of alternatives was flawed, arbitrary and capricious.

B. The FEIS Arbitrarily Inflates The Economic Benefits Of Royalties And Coal Sales.

The FEIS not only entirely omits the costs of the Lease Modifications, it also appears to overstate the benefits. For example, the FEIS assumes that the Lease Modifications' benefits include an "Annual Royalty @ 8%." FEIS at 188. See also id. at 190 ("Royalty payments are 8% of the value of the coal removed" and assuming total value of royalties will therefore be

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[26] ROD at 9 (emphasis added).

[27] Id. at 10.

"approximately $30 million"). But MCC long ago announced that it is seeking to reduce from 8% to 5% the level of royalties paid to the taxpayer for these very lease expansions.[28] This would reduce the benefits from royalties by nearly 40%. The FEIS's assumption that this project will include result in about $30 million in royalties is arbitrary and capricious.[29]

Further, while the DEIS examined the benefits of coal production by assuming the value of the Lease Modifications coal would be $40 per ton, the FEIS inflates the price by nearly 40%, alleging benefits from coal priced at $55 per ton. Compare DEIS at 151, 152 ($40/ton) with FEIS at 188, 190, 191 ($55/ton). The FEIS fails to explain the use of this inflated figure, which appears to contradict the general trend in the price of North Fork Valley coal. Recent reports indicate that the price of spot coal from the region has fallen by more than 20% over the last year, from $45 in 2011 to $35 in 2012.[30]

In sum, the analysis of the socioeconomic impacts of the coal lease modifications inexplicably ignores the most significant cost of the proposal, and erroneously inflates the benefits, violating NEPA's "hard look" requirement. The Forest Service cannot rely on this flawed analysis to support its decision on the Lease Modifications.

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[28] A. Johnson, Mining officials hope for longer lease on life for West Elk Mine, Crested Butte News (Apr. 25, 2012) (Arch Coal has "ask[ed] the Bureau of Land Management for a reduction in the royalty rate to 5 percent from 8 percent"), attached as Exh. 11; E. Zukoski pers. comm. with staff of Colorado Dept. of Natural Resources (June 26, 2012) (confirming BLM has sought comments from the State of Colorado on a proposal to reduce royalty for coal leases at the West Elk Mine).

[29] Appellants raised this issue in comments on the DEIS. See HCCA Comment Letter (Exh. 5) at 53; FEIS at 537. The FEIS failed to respond to these comments. Id. at 536-37.

[30] See D. Webb, Coal taking market lumps, Grand Junction Sentinel (Aug. 17, 2012), attached as Exh. 12, available online at http://www.gjsentinel.com/news/articles/coal-taking-market-lumps (last viewed Sep. 23, 2012).

III. THE FINAL EIS'S ANALYSIS OF CUMULATIVE IMPACTS VIOLATES NEPA.

In evaluating cumulative impacts, agencies must do more than catalogue relevant "past projects in the area." City of Carmel-by-the-Sea v. United States Dep't of Transp., 123 F.3d 1142, 1160 (9th Cir. 1997). The EIS must also include a "useful analysis of the cumulative impacts of past, present and future projects." Id. This means a discussion and an analysis in sufficient detail to assist "the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative environmental impacts." Id. (citation omitted). Agencies also cannot merely list the number of road miles to be built or acres disturbed by past, present, and foreseeable projects. Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt., 387 F.3d 989, 994-95 (9th Cir. 2004) ("A calculation of the total number of acres to be harvested in the watershed is … not a sufficient description of the actual environmental effects that can be expected from logging those acres…. Moreover, while a tally of the total road construction anticipated in the … watershed is definitely a good start to an adequate analysis, stating the total miles of roads to be constructed is similar to merely stating the sum of the acres to be harvested – it is not a description of actual environmental effects.").

The FEIS's cumulative effects section, Section 3.37, largely consists of a list of present and reasonably foreseeable actions as well as "other activities." FEIS at 193-95. There is almost no evaluation of what the impacts of those projects might be. For example, the FEIS's description of Bull Mountain Unit drilling discloses only that surface impacts will occur; the FEIS does not address potential air quality impacts, nor does it explain how air or surface impacts will affect the environment when taken together with impacts of the Lease Modifications. FEIS at 195. And while the FEIS's cumulative effects section states that "[a]ll cumulative effects are addressed specific to each resource in [other sections of the FEIS's] Chapter 3," FEIS at 193, those resource-specific cumulative impacts analyses also contain little

to none of the information required by NEPA. For example, for the expected oil and gas drilling in the Bull Mountain Unit, the FEIS identifies the number of wells to be drilled (150), and acknowledges that "[c]umulative effects would be expected as they relate to criteria air pollutants and visibility within the airshed." FEIS at 50. And while the air quality effects section mentions the Bull Mountain Unit, it does so only to admit that it would add air pollutants, but then declines to even attempt to estimate or quantify such impacts, merely concluding summarily that "emissions cannot yet be quantified." FEIS at 71. Similarly, while the FEIS acknowledges the potential for cumulative effects when viewing the Lease Modifications together with the Oak Mesa coal exploration project ("cumulative effects could be expected as they relate to additional vegetation/habitat disturbance," FEIS at 50), the only other mention of Oak Mesa is the area of the project and the footprint of road and pad construction. FEIS at 194. The FEIS fails to analyze the potential for that project to impact air quality or any other value when examined together with the impacts of the Lease Modifications.

The FEIS's analysis of cumulative effects therefore does not meet the standard set by NEPA or the courts.

IV. THE FINAL EIS FAILS TO TAKE THE REQUIRED "HARD LOOK" AT NUMEROUS IMPACTS OF THE LEASE MODIFICATIONS.

A. The Final EIS Fails To Take A "Hard Look" At The Lease Modifications' Impact On Visibility.

The FEIS's analysis of the Lease Modifications' potential impacts on visibility does not take the "hard look" at visibility impacts required by NEPA.

The FEIS suggests that the Colorado Regional Haze plan supports a conclusion that "impacts from the [West Elk] Mine would not be sufficiently large to warrant additional particulate matter controls." FEIS at 82. This statement is not accurate for several reasons. First, the Regional Haze plan did not even mention, let alone analyze, the visibility impacts or

need for particulate matter (PM) controls for the West Elk Mine. In fact, the Regional Haze plan did not even analyze PM controls for coal mines generally. Instead, when considering sources that may warrant "reasonable progress" controls in the initial haze plan, the plan only analyzed specific source categories that are large sources of SO_2 and NO_x emissions, such as power plants and Portland cement plants.[31] The plan explains that while these large SO_2 and NO_x sources also generally emit substantial amounts of PM, and that "PM emissions from other anthropogenic and natural sources," such as the West Elk Mine, "are not being evaluated at this time."[32]

The Regional Haze plan is an evolving document that will be reviewed and revised every five years, and additional controls on additional sources are anticipated in future years as the State must continually improve visibility along a "glide path" toward natural visibility by 2064.[33] Consequently, the fact that the initial plan focused on specific source categories other than coal mines does not mean that the visibility impacts of the West Elk Mine are insignificant, as the FEIS suggests.

In its response to comments, the Forest Service notes that the State's Regional Haze plan modeled the overall visibility impairment at West Elk Wilderness from all sources, including emissions from the West Elk Mine. The Forest Service argues that this modeling satisfies

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[31] See Colorado Air Pollution Control Division, Colorado Visibility and Regional Haze State Implementation Plan for the Twelve Mandatory Class I Federal Areas in Colorado, Revised Regional Haze Plan (Jan. 7, 2011) ("Colo. Regional Haze Plan (2011)") at 106-08; 114 (listing the 16 point sources that were considered for "reasonable progress" controls), available at http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheadername1=Content-Disposition&blobheadername2=Content-Type&blobheadervalue1=inline%3B+filename%3D%22Regional+Haze+State+Implementation+Plan+%28January+2011%29.pdf%22&blobheadervalue2=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251808867418&ssbinary=true (last viewed Sep. 23, 2012).

[32] Id. at 107.

[33] See 40 C.F.R. §§ 51.308 (d)(1), (d)(3), (g), (h).

NEPA's requirement to take a "hard look" at the Lease Modifications' visibility impacts.[34] However, the fact that the Mine's emissions were included in the Regional Haze plan's global emissions inventory does not satisfy NEPA. Nowhere in the Regional Haze plan does the State discuss or mention the Mine's specific visibility impacts, let alone the visibility impacts of other coal mines in the region.[35] In contrast, the State calculated the actual visibility impairment caused by other sources.[36] For example, while the Regional Haze plan calculated that the Craig Station causes a 2.689 deciview visibility impact at the nearest Class I area, nowhere in the Regional Haze plan is there any attempt to calculate the visibility impact of the West Elk Mine on any Class I area.[37] Because the Regional Haze plan did not calculate the visibility impairment caused by the Mine and other coal mines in the region, the State could not analyze whether the Mine's visibility impacts are significant, as NEPA requires.

The FEIS cannot rely on a 5-year-old technical support document that does not address the West Elk Mine's visibility impacts to satisfy its NEPA obligations. Reliance on this document fails to take the hard look NEPA requires and is arbitrary and capricious.

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[34] See FEIS at 517-18.

[35] Colorado Air Pollution Control Division, Colorado State Implementation Plan for Regional Haze, Technical Support Document, Mandatory Class I Federal Area: West Elk Wilderness Area at 31 (stating only that PM sources "include construction sites, tilled fields, windblown dust, vehicle traffic, mineral processing facilities, mining wood burning"), available at http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheadername1=Content-Disposition&blobheadername2=Content-Type&blobheadervalue1=inline%3B+filename%3D%22West+Elk+Wilderness.pdf%22&blobheadervalue2=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251808872897&ssbinary=true (last viewed Sep. 23, 2012).

[36] Colo. Regional Haze Plan (2011) at 41 (modeling showing deciview impact of sources subject to BART); 114 (analysis providing a rough estimate of visibility impacts for 16 sources).

[37] Id. at 41.

B. The FEIS Fails To Properly Disclose The Likely Impacts Of Well Pads And Roads In Lease Modification COC-67232.

The FEIS declines to disclose the likely locations of roads and MDWs except in the most general terms because "a final mine plan has not been approved." FEIS at 55, 123. At the same time, the FEIS assumes that "if any exploration drilling, staging areas, and ground water monitoring drill pads and access road construction are needed, they would utilize the same locations as those used for MDWs." FEIS at 54, 121. Thus, any exploration proposal is likely a good predictor of the future location of at least some of the MDW pads and roads.

The Forest Service already has before it, as it has for more than a decade, an exploration proposal submitted by MCC.[38] The Forest Service admits that this proposal, though old, is still "pending." FEIS at 533 (Ark Land Co.'s 1998 proposal has "remained as pending" since submitted). This proposal displays the location of roads and exploration wells. Further, in the fall of 2011 the Forest Service and Ark Land Company "laid out" and mapped a dozen exploration wells in the Lease Modifications area in preparation for cultural resource surveys (which are generally only undertaken in advance of ground disturbance), indicating MCC has already chosen the site of such wells, and potentially the roads to access them.[39]

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[38] See Ark Land Co., Federal Coal Exploration License Application (Nov. 1998), attached as Exh. 13.

[39] See, e.g., email of D. Gray, GMUG NF (Mar. 7, 2012 12:29 PM) (discussing Ark Land Company and Forest Service site visit to Sunset Roadless Area "when we were laying out exp locations"), attached as Exh. 14; email of D. Gray, GMUG NF (Mar. 13, 2012 6:34:11 PM) (discussing Ark Land Company and Forest Service site visit to Sunset Roadless when the Forest Service was "working on the exp layout last fall"), attached as Exh. 15; email of D. Gray, GMUG NF (Feb. 2, 2012 4:34 PM) (discussing providing locations of twelve well locations "(SST1-SST12)", and stating that "I am assuming that they [the 12 wells] are the only ones proposed so far?" (emphasis added)), attached as Exh. 16; Map, Arch Coal Sunset Trail CR Survey and Report (Oct. 2011) (displaying wells SST1 through SST12 within the Lease Modifications area for the purposes of a cultural resources survey), attached as Exh. 17. Note that two of the well locations on the October 2011 map are directly within intermittent stream courses (SST2 and SST7), indicating the potential for damage to those sensitive areas.

The Forest Service thus could – and must, pursuant to NEPA – use this information to inform its analysis of the likely extent of the construction of roads and MDW pads within the Lease Modifications area. Whether these maps represent a "final" exploration plan or not, they demonstrate the likely arrangement of roads and MDW pads in Lease Modification COC-67232, the eastern of the two lease modifications. The October 2011 exploration plan map displays about 1.5 miles "Road" connecting 6 exploration holes within Lease Modification COC-67232.[40] The 1998 exploration plan map also shows approximately 1.5 miles of road, on this map connecting 5 exploration wells.[41] Thus, two exploration proposals more than ten years apart showed similar projects impacts to the lands within Lease Modification COC-67232.

The fact that the two exploration proposals depict similar impacts from road and MDW pad construction agreement should have informed the Forest Service of the potential impacts of development of this lease modification, even if, as the FEIS asserts, that the October 2011 exploration plan map, derived from "field work," was "more a wide-view, landscape-scale, field check, to determine the feasibility of locating future roads and well pads in the area."[42] But the Forest Service apparently ignored these best predictors of likely development in the area. The October 2011 exploration plan map shows three time the road mileage and 150% of the MDW

Moreover, MCC told the Forest Service by early April 2012 that the company wanted the Forest Service to complete "a more detailed analysis for surface disturbance [in the DEIS] … so that the document can also be used for the exploration and permitting process," indicating that the Mine was likely ready for the Forest Service to analyze proposed exploration well locations. See email of N. Mortenson (Apr. 5, 2012 8:33 AM), attached as Exh. 18. These emails and maps were obtained from GMUG NF project files pursuant to a Freedom of Information Act request.

[40] Compare Map, Arch Coal Sunset Trail CR Survey and Report (Oct. 2011) (Exh. 17) with FEIS at 162. The 2011 map shows two road segments – one running north-south in sections 11 and 14, and another running east-west in sections 14 and 15 – which total about 1.5 miles in length. The 2011 map also displays six "Exploration Hole[s] from Cad" (SST7-SST12).

[41] See map attached to Ark Land Co. Exploration License Application (Exh. 13).

[42] FEIS at 533.

pads that the FEIS predicts for Lease Modification COC-67232 under the RFMP. See FEIS at 102 (assuming 0.5 miles of road and 4 well pads within Lease Modification COC-67232, instead of the 1.5 miles of road and 6 well pads displayed on the October 2011 map of field work). The 1998 exploration application map similarly shows far more road mileage and more MDW pads in Lease Modification COC-67322 than the FEIS assumes. The FEIS fails to explain why it ignored the best evidence at the Forest Service's disposal to significantly reduce the road miles and MDW pads – and thus the disturbance caused by those developments – for the lands within Lease Modification COC-67232. In ignoring this information, the Forest Service failed to take the "hard look" NEPA requires.

Further, by underestimating the potential impacts to Lease Modification COC-67322, the Forest Service skewed a key component of the alternatives analysis. The Forest Service rejected Alternative 4 – which would have permitted MCC to obtain 97% of the coal of the selected alternative – in part because road and MDW pad construction would damage "a small amount of [Forest] lands" of the Sunset Roadless Area's wilderness-capable lands in COC-67232. If the Forest Service had properly disclosed the true impacts of the proposal to roadless lands in COC-67232, the balance of costs and benefits concerning Alternative 4 would have been different.

C. The FEIS Fails To Disclose Irreversible And Irretrievable Commitments of Resources From The Action Alternative.

Regulations implementing NEPA require that agencies disclose in an EIS "any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented." 40 C.F.R. § 1502.16. The FEIS fails to disclose several irreversible and irretrievable impacts in violation of NEPA's regulations. See FEIS at 192.

First, while the FEIS acknowledges that the Lease Modifications will likely result in the release of either hundreds of thousands or 1.2 million tons of CO_2 equivalent of methane each

year,[43] the FEIS does not disclose this loss of a federal resource, nor the loss of potential federal royalties, which are irreversible and irretrievable commitments of resources. This failure is arbitrary given that the FEIS identifies "[t]he release of greenhouse gases," which includes methane, as an irreversible or irretrievable loss.

Second, in the prior E-Seam Final EIS, the Forest Service concluded that the construction of MDWs and roads would lead to "some irreversible loss of soil due to erosion … due to wind and run-off …. Excavated and/or stockpiled soils would exhibit irretrievable losses of soil structure resulting in reduced water holding capacities."[44] The FEIS does not acknowledge the potential for such irreversible commitment, does not explain why a similar mine expansion for the same mine would result in different impacts, nor did it respond to comments raising this issue.

V. THE FOREST SERVICE'S CONSULTATION, AND THE U.S. FISH & WILDLIFE SERVICE'S CONCURRENCE, VIOLATE THE ENDANGERED SPECIES ACT.

A. The Endangered Species Act

The Endangered Species Act ("ESA") requires that each federal agency (the "action agency") "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of the designated critical habitat of the listed species. 16 U.S.C. § 1536(a)(2). See also 50 C.F.R. § 402.1(a). To assist action agencies in complying with this provision, ESA Section 7 and its implementing regulations set out a detailed

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[43] FEIS at 40 (383,250-574,875 tonnes of CO_2 equivalent of methane are released per year from the mine); id. at 75, 506 (mine released 1.23 million tons of CO_2 equivalent of methane in 2011).

[44] U.S. Forest Service, Deer Creek Shaft and E Seam Methane Drainage Wells Project FEIS (Aug. 2007) at 152 ("E-Seam Final EIS"), excerpts attached as Exh. 19.

consultation process for determining the impacts of the proposed agency action. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402. When an action agency determines that an action it proposes to take "may affect listed species or critical habitat," that agency must prepare a biological assessment ("BA") on the effects of the action. 50 C.F.R. § 402.14(a); 16 U.S.C. § 1536(c). If after preparing a BA the agency determines that the proposed action is "not likely to adversely affect" any listed species or critical habitat, then the agency need not initiate formal consultation with the U.S. Fish and Wildlife Service ("FWS").[45] 50 C.F.R. § 402.14(b). The process of determining whether consultation may be required is referred to as "informal consultation," which is described in implementing regulations as follows:

> Informal consultation is [a] … process that includes all discussions, correspondence, etc., between the Service and the Federal agency or the designated non-Federal representative, designed to assist the Federal agency in determining whether formal consultation or a conference is required. If during informal consultation it is determined by the Federal agency, with the written concurrence of the [FWS], that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary.

50 C.F.R. § 402.13.

In setting the scope of the action on which consultation must occur, the ESA mandates that agencies analyze the "entire" agency action. Conner v. Burford, 848 F.2d 1441, 1452-53 (9th Cir. 1988) (citing 16 U.S.C. § 1536(b)(3)(A)); Ctr. for Biological Diversity v. Rumsfeld, 198 F. Supp. 2d 1139, 1155 (D. Ariz. 2002). This means that a BO's (or BA's) analysis of effects to listed species and critical habitat "must be coextensive with the agency action." Conner, 848 F.2d at 1458; Greenpeace v. Nat'l Marine Fisheries Serv., 80 F. Supp. 2d 1137, 1143 (W.D. Wash. 2000) (agency "must prepare a … biological opinion equal in scope" to

[45] An action agency may be required to consult with the National Marine Fisheries Service ("NMFS") if certain aquatic species are involved. No such species are at issue here.

action consulted upon); Rumsfeld, 198 F. Supp. 2d at 1156 ("breadth and scope of the analysis must be adequate to consider all the impacts"). Accordingly, courts strike down biological opinions that fail to perform a comprehensive analysis of the entire action, including analyses that omit key areas or impacts. See, e.g., Conner, 848 F.2d at 1453-54 (analysis of entire agency action for oil and gas leasing must also include impacts from development); Native Ecosystems Council v. Dombeck, 304 F.3d 886, 902-03 (9th Cir. 2002) (overturning Forest Service's § 7 analysis because it omitted key geographic area affected by proposal).

Further, U.S. Fish and Wildlife Service regulations require every agency to ensure that "any action [the agency] authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species." 50 C.F.R. § 402.01. The regulations define "action" to include any "action[] directly or indirectly causing modifications to the land, water, or air." 50 C.F.R. § 402.02 (emphasis added). The effects of the agency action which must be evaluated include "the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action." Id. "Indirect effects" include effects "that are caused by the proposed action and are later in time, but still are reasonably certain to occur." Id. These direct and indirect effects must be considered together with a separate category of impacts known as "cumulative effects," which are "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Id.

Courts have repeatedly found that impacts are "reasonably certain to occur" – and thus must be analyzed under the ESA as "indirect effects" in a BA or BO – where federal actions induce private development. For example, when considering the potential effects of an

expansion of a military base, a court required the U.S. Army to consider the indirect impacts caused by groundwater pumping required by the development and people the base attracted to the area. See, e.g., Ctr. for Biological Diversity v. Rumsfeld, 198 F. Supp. 2d 1139 (D. Ariz. 2002). Numerous other courts agree. See, e.g., Nat'l Wildlife Fed'n v. Coleman, 529 F.2d 359, 373 (5th Cir. 1976) ("indirect effects" of highway construction include "the residential and commercial development that can be expected to result from the construction of the highway."); Riverside Irr. Dist. v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985) (agency must consider total impact on endangered species and cannot ignore indirect effects); Nat'l Wildlife Fed'n v. Fed. Emergency Mgm't Agency, 345 F. Supp. 2d 1151, 1173-74, 1176 (W.D. Wash. 2004) (Section 7 consultation on FEMA flood insurance program must address harmful impacts of induced property development in flood zone because "development [was] reasonably certain to occur as a result of" the program, even though FEMA did not "authorize, permit, or carry out the actual development that causes the harm."); Fla. Key Deer v. Paulison, 522 F.3d 1133, 1144 (11th Cir. 2008) (finding FEMA's flood insurance program may cause jeopardy to endangered Florida key deer by encouraging development).

As described below, both the Forest Service and the FWS violated their ESA consultation obligations.

B. The Forest Service BA Analyzes Only Direct And Indirect Impacts Within The Lease Modifications Area.

The Forest Service issued a BA on the Lease Modifications in April 2010, focusing on impacts to the Canada lynx, a species designated as threatened under the ESA in the southern Rockies, including Colorado. GMUG NF, Biological Assessment for Federal Coal Lease Modifications (Apr. 16, 2010) at 10 ("Lease Modifications BA"), attached as Exh. 20. See also FEIS at 129. The Lease Modification BA purported to examine the impacts of the Forest

Service's consent to the lease modifications, the destruction of habitat likely to result from road and MDW construction caused by mining the lease, and of other past and reasonably foreseeable projects. Lease Modifications BA (Exh. 20) at 10-15.

The Forest Service identified a number of stipulations to the existing leases that "would be carried over" into the Lease Modifications "slightly modified to reflect changes in Management, specifically the 2008 Southern Rockies Lynx Management Direction." Id. at 6-7. The Forest Service concluded, among other things, that these stipulations "will mitigate impacts due to creation of roads and [MDW] pads within the area, winter access, and vegetative changes." Id. at 13. The Lease Modifications BA also concluded that disturbance to lynx denning and foraging "is not anticipated to be a substantial impact as … lease stipulations for this project follow guidelines as noted" in an appendix to the BA. Id. at 15. Based on its analysis, the Lease Modifications BA concluded that "[i]mplementation of the project 'may affect, but is unlikely to adversely affect' the Canada lynx." Id.

The FWS concurred with the Forest Service's "not likely to adversely affect" determination by a letter dated June 16, 2010. Letter of A. Pfister, FWS to C. Richmond, GMUG NF (June 16, 2010) at 4 ("FWS Concurrence Letter"), attached as Exh. 21. The FWS stated that "[s]everal assumptions were incorporated into your analysis [that is, the Forest Service's BA] of effects as stated above. If these assumptions prove incorrect, please contact the [Fish and Wildlife] Service to discuss any changes that may require further analysis or reinitiation of section 7 consultation." Id.

The Forest Service's BA assumes that the total area of lynx habitat that may be disturbed by road and MDW pad construction is about 75 acres. See Lease Modifications BA (Exh. 20) at 5 (describing project as impacting 48 acres from 48 MDW pads and 24 acres from 6.5 miles of

road construction); FWS Concurrence Letter (Exh. 21) at 3 (assuming 45 acres of land cleared for MDW pads, and 24 acres cleared for temporary roads). The BA identifies the land to be analyzed because habitat may be altered there as only the land inside the Lease Modifications. Lease Modifications BA (Exh. 20) at 9 (Table 3). Thus, in assessing the impacts of "reasonably foreseeable" actions, the BA addresses only the 75 acres likely to be disturbed by mining of the Lease Modifications themselves. Id. at 10 (Table 4). The BA says nothing about the direct or indirect impacts of road or MDW pad construction on the parent leases or on adjacent private land that the FEIS admits will be induced by the Lease Modifications.

Further, the BA assumes that there is a chance that subsidence may alter 1360.5 acres of lynx habitat within the Lease Modifications area. Lease Modifications BA (Exh. 20) at 12 ("in a subsidence worst-case-scenario situation, this lease modification and the underground mining associated with it would alter the entire surface topography of the modification area") (emphasis added); id. at 15 ("If all of the lease modification area subsides to the extent that surface habitat is damaged or destroyed, an additional 1360.5 acres of habitat would be lost within the LAU" (emphasis added)). The FEIS reiterates this acreage figure, and reinforces that it does not address lands outside the Lease Modifications area. See FEIS at 130 "If all of the lease modification area subsides to the extent that surface habitat is damaged or destroyed, an additional 1360.5 acres of habitat would be lost within the LAU" (emphasis added)).

C. Because The Forest Service BA Fails To Disclose All Of The Direct And Indirect Impacts Of The Proposed Action On Lynx Habitat, The Consultation Is Invalid.

Because the assumptions included in the BA are incorrect and contradicted by the FEIS, the FWS's concurrence is invalid, and the Forest Service must reinitiate consultation. The BA's assumptions about foreseeable habitat loss are incorrect because they under-represent the Lease Modifications' impacts at least two ways.

First, a Forest Service decision to consent to the lease is the but-for cause of, and the on-off switch for, mining an additional 8.9 million tons of coal on adjacent private and public land; that additional mining will lead to the clear-cutting of forest resources, road construction, and pad clearing for the construction of methane drainage wells on those lands. See supra at 5-13; see also FEIS at 188 (assuming mining of adjacent private and parent-lease coal is a direct or indirect impact of the Lease Modifications decision). The FEIS reveals, for the first time, that road and MDW pad construction "on adjacent private land and in the parent lease of COC-1362" will destroy for decades "about 17 acres of habitat" for the imperiled lynx. FEIS at 130. Buried in the responses to comments, the FEIS further admits that "[u]pon further review, impacts to approximately 10,.3 [should be 10.3(?)] acres of private lands in presumably suitable lynx habitat may occur if private land actions related to the coal mining associated with the two lease modifications occur." FEIS at 605.

While the BA mentions private land, nowhere does the BA account for or address the impacts to lynx habitat from private and public land mining that will be induced by the Lease Modifications decision. The BA recognizes the likelihood of induced impacts. Lease Modifications BA (Exh. 20) at 4 ("The panels in the lease modifications would include the start lines and the first few thousand feet of five panels that would extend west off the FS lands and into coal reserves under private land.") But beyond that, the BA mentions private land impacts only in the context of cumulative impacts, not induced, indirect impacts. See id. at 15 (mentioning mining as a use of private lands in the BA's "Cumulative (NEPA) Effects" section); id. at 16 (stating, in the BA's "Cumulative Effects (ESA)" section: "Mining activities may occur on private lands adjacent to the lease modification, and may include MDWs and ….").

The BA thus fails to address at all the impacts of adjacent land private and public lands mining that is "reasonably certain to occur" as a result of the Lease Modifications. The BA contains no data on the likely location and extent of roads and MDWs – and thus of habitat disturbance or elimination – that will result from mining outside of the Lease Modifications on adjacent. The BA nowhere addresses new information in the FEIS – prepared two years after the BA – that the Lease Modifications will result in 17 acres of habitat disturbance outside the Lease Modification from mining there, and 10.3 acres of habitat modification on private land. FEIS at 130, 605.

Second, the BA assumes that subsidence within the Lease Modifications could impact 1360 acres of lynx habitat within the Lease Modifications area, but fails to address the potential for subsidence outside the Lease Modifications, or subsidence caused by mining on adjacent private and public land. Lease Modifications BA (Exh. 20) at 12, 15. The FEIS – for the first time – discloses that subsidence may occur on 1,500 acres in total – including lands outside the Lease Modifications area, due in part to mining of adjacent private and parent-lease coal made possible by the Lease Modifications decision. See FEIS at 90 (selected alternative "would cause approximately 1500 acres of subsidence (~950 acres from mining COC-1362, ~150 acres from mining COC-67232, and ~400 acres from mining adjacent reserves in existing federal leases and adjacent private lands)."). Thus, the FEIS contradicts the BA concerning the location and extent of potential subsidence impacts.

In sum, the BA thus fails to account for additional habitat destruction on private and adjacent federal lands due to road and MDW pad construction, and from subsidence, and fails to identify the location of this habitat damage, despite the fact that this damage is likely occur within habitat for, and the range of, the Canada lynx. Because the Forest Service has adopted a

decision that "prove[s] incorrect" the FWS's assumptions about the impacts of the Forest Service's decision, the ESA required the Forest Service to contact the FWS "to discuss any changes that may require further analysis or reinitiation of section 7 consultation." See FWS Concurrence Letter (Exh. 21) at 4; 16 U.S.C. § 1536(a)(2) (consultation mandate); 50 C.F.R. § 402.16(c) (requiring re-initiation of formal consultation if the proposed action is later modified in a manner that causes an effect that was not previously considered); 50 C.F.R. § 402.16(b) (requiring re-initiation of formal consultation if new information shows the action may impact listed species in a manner or to an extent not previously considered); Forest Guardians v. Johans, 450 F.3d 455, 458 (9th Cir. 2006) (applying requirements concerning reinitiation of formal consultation to informal consultation). The Forest Service has apparently failed to do so.

The Forest Service's failure to re-initiate consultation with the FWS on the additional, previously undisclosed habitat destruction outside of, but made possible by, the Lease Modifications violates the ESA.

D. The Forest Service's Explanation For The BA's Failure To Address Direct And Indirect Impacts Lacks Merit.

While the FEIS purports to explain how the Forest Service and FWS have addressed, through informal consultation, the impacts of adjacent private and public land drilling induced by the Lease Modifications, those explanations fail to ensure that the agencies have complied with the ESA. The Forest Service argues that the BA need not disclose the indirect impacts of mining on adjacent private and public lands outside the Lease Modifications area because the BA made conservative assumptions about surface disturbance inside the Lease Modifications area. The Forest Service thus asserts that it can wait until its conservative estimates for ground disturbance

inside the Lease Modifications are exceeded before reinitiating consultation.[46] We are unaware of any law, policy, or guidance supporting the Forest Service's novel approach. To the contrary, the Forest Service also cannot defer analysis of effects of the action – including indirect effects of mining on adjacent lands – because of assumptions made in the BA. The Forest Service cannot pick and choose which effects of which actions that it or FWS shall consider in a consultation (nor can FWS agree to such consultation). To do so impermissibly limits the scope and strength of the consultation. Conner v. Burford, 848 F.2d at 1454 (9th Cir. 1988) ("The scope of the agency action is crucial because the ESA requires the biological opinion to analyze the effect of the entire agency action.") (emphasis added); U.S. Fish and Wildlife Service & National Marine Fisheries Service, Endangered Species Consultation Handbook 4-4 (March 1998) (allowing the action agency to select the action subject to consultation only "as long as the effects of the entire action are considered" (emphasis added)).

In its BA, the Forest Service made its best, conservative, analysis of the direct impacts of its decision within the Lease Modifications area. But that estimate was wrong. The BA failed to address a key component of the indirect impacts of approving the Lease Modifications: the impacts of road and MDW pad construction, as well as subsidence, outside the Lease

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[46] See FEIS at 601 ("The analysis and concurrence included the uncertainty of surface actions in the future mine plan, and provided an upper limit to impacts covered under the analysis and consultation, which, if exceeded, require the Forest Service to re-initiate consultation and re-analyze the impact of the project to lynx."); id. at 602 ("In the event that impacts to Canada lynx exceed the limit set in the letter of concurrence by the USFWS in regards to this project, the Forest Service will re-initiate consultation as required, and additional analysis will occur."); id. at 605 ("In this consultation, an upper limit of disturbance was agreed upon, and if that limit is reached by this project, then the Forest Service will re-initiate consultation on the project. Upon further review, impacts to approximately 10,.3 acres of private lands in presumably suitable lynx habitat may occur if private land actions related to the coal mining associated with the two lease modifications occur. This amount of impact is approximately one-seventh of the area of disturbance allowed for in the project and is not sufficient to change the determination of effects for Canada Lynx for this project.").

Modifications area. The Forest Service cannot simply ignore its new, best estimate for potential impacts by alleging that its prior, flawed analysis was "conservative." Nor can it wait to see if its analysis of potential surface disturbance – which it now admits was low – is exceeded later. The Forest Service knows now that the information provided to the FWS was inaccurate, and that the impacts of the proposed action analyzed in the BA are not the same in extent or location as those of the approved action. The Forest Service must submit a revised BA to the FWS for review. As best we can tell, the Forest Service has failed to do so. Further, the Forest Service's decision on the Lease Modifications is the point at which the agency can attach stipulations to limit impacts to lynx or to address additional measures that may be needed to make up for the impacts to private land.[47] It is also arbitrary for the parent leases (where some impacts to lynx are likely to occur) to have one set of stipulations to protect lynx, while the Lease Modifications will have a different set.

The FEIS also excuses the Forest Service's failure to address the induced impacts of mining on private lands by stating: "impacts to listed species from projects occurring on private lands fall under Section 10 of the Endangered Species Act, and private landowners, not the Forest Service, are responsible for such consultation." FEIS at 605. This statement is false as a matter of law. The ESA requires the Forest Service to disclose and consult on the indirect impacts reasonably certain to occur as a result of its actions, including those on private land. See supra at 31-33. Further, Section 10 of the ESA does not require that private landowners "consult" with the FWS about anything.

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[47] The Forest Service alleges that it "recently contacted the US Fish and Wildlife Service (REF) and verified that additional consultation was not needed at this time." FEIS at 601-02. But the Forest Service and the FWS cannot agree to ignore the law requiring disclosure of indirect effects, and, if necessary, the adoption of mitigation measures to limit those effects. The agencies must remedy the BA's failure to address these impacts.

E. The Fish And Wildlife Service Violated The ESA By Relying On Mitigation Measures That Are Not "Reasonably Likely To Occur."

Mitigation measures may be included as part of the proposed action and relied upon by an agency to avoid jeopardy to listed species only where they involve "specific and binding plans" and a "clear, definite commitment of resources for future improvements" to implement those measures. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., 524 F.3d 917, 935-36 (9th Cir. 2008) (finding agency's "sincere general commitment" insufficient to support no-jeopardy conclusion). Accordingly, consulting agencies must exclude mitigation measures that are not "reasonably certain to occur" from the analysis. Id. at 936 n.17. Further, as the Court explained in Ctr. for Biological Diversity v. Rumsfeld, mitigation measures supporting a Biological Opinion's conclusion must be "reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002) (citing Sierra Club v. Marsh, 816 F.2d 1376 (9th Cir. 1987)); see also Natural Res. Def. Council v. Kempthorne, 506 F.Supp.2d 322, 350 (E.D. Cal. 2007) (same). A similar standard should be applied to evaluate measures that the FWS relies upon to concur in a "not likely to adversely affect" determination by an action agency.

Here, the FWS's concurrence relied upon mitigation measures that are not reasonably specific nor reasonably certain to occur. For example, the FWS assumed that the Forest Service would implement the following measure: "New roads will be situated away from forested stringers, if possible." FWS Concurrence Letter (Exh. 21) at 3 (emphasis added). This measure, however, is no guarantee that roads, whether permanent or temporary, will be built away from forested stringers, since the modifier "if possible" gives the agency broad discretion to ignore the

prohibition and permit road construction at any place. Thus, this measure does not actually prevent construction anywhere since it permits the roads to be built everywhere.

It is also questionable whether a second measure – "Design access roads for effective closure and reclaim or decommission all project-specific roads that are not needed for other management objectives" – is "reasonably certain to occur," since the measure permits access roads to remain open in lynx habitat if the Forest Service wishes to leave them open. FWS Concurrence Letter (Exh. 21) at 3 (emphasis added). In sum, the FWS's concurrence cannot rely on either of these mitigation measures since they are not likely to result in any protection to lynx or lynx habitat.

VI. THE FEIS'S ADOPTION AND DENIAL OF LEASE STIPULATIONS VIOLATES OF NEPA AND THE APA.

The Administrative Procedure Act ("APA") mandates that "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins., 463 U.S. 29, 43 (1983) (quotations omitted); see also Humane Soc'y of U.S. v. Locke, 626 F.3d 1040, 1048 (9th Cir. 2010). Whenever an agency departs from "prior norms," its reasoning must be "clearly set forth so that the reviewing court may understand the basis of the agency's action…." Atchison, Topeka & Santa Fe Ry. v. Wichita Bd. of Trade, 412 U.S. 800, 808 (1973); see also Humane Soc'y, 626 F.3d at 1050 n.4.

The FEIS acknowledges that the Forest Service has a responsibility to protect non-mineral resources within National Forest lands by ensuring that the parent lease stipulations carried over to the Lease Modifications are sufficient protection measures. See, e.g., FEIS at 3, 4, 6. If they are not, the Forest Service must prescribe additional stipulations to provide the needed protection.

These stipulations are a vital aspect of the Forest Service's decision whether to consent to BLM modifying the existing coal leases. Stipulations help mitigate adverse affects from the Proposed Action Alternative. See FEIS at 16 ("As part of the Proposed Action alternatives the GMUF Forest Supervisor must decide if the existing stipulations on the existing parent leases are sufficient for the protection of non-mineral (i.e. surface) resources.").

A. The Forest Service Arbitrarily Dismissed A Stipulation To Protect Lynx.

However, the Forest Service weakened at least one stipulation that was in place on the parent leases without proper explanation or analysis, in violation of the APA and NEPA. See Motor Vehicle Mfrs. Ass'n, 463 U.S. at 43; Human Soc'y, 626 F.3d at 1048. The Forest Service weakened a stipulation regarding lynx habitat: changed from, "New roads will be situated away from forest stringers" in the parent lease, to "New roads will be situated away from forest stringers, if possible" in the Lease Modifications. FEIS at 21. The FEIS alleges that this change was made to conform to the Southern Rockies Lynx Amendment which, according to the agency, states that new roads "SHOULD be situated away from forested stringers." FEIS at 606 (emphasis in original). The Forest Service argues that "should be situated away from forested stringers" means that as many roads and well pads as the agency desires can be built in forested stringers. Id. This corrupts the mandatory meaning of the word "should."

B. The Forest Service Arbitrarily Dismissed Adopting Consistent Alternatives To Restrict Surface Disturbance On Slope Greater Than 60%.

The Forest Service also adopted stipulations concerning geologic hazards that are at odds with one another and with the GMUG Forest Plan without a rational explanation. The Forest Service's decision prohibits surface occupancy on "slopes which exceed 60%" within the parent lease for COC-1362, as well as prohibiting surface occupancy "in areas of high geologic hazard or high erosion potential." See ROD at 22. While the parent lease for COC-67232 similarly

includes no surface occupancy ("NSO") stipulations for "areas of high geologic hazard or high erosion potential," that lease does not contain the NSO stipulation for "slopes which exceed 60%." Id.

Not only is the failure of lease modification COC-67232 to contain an NSO stipulation for slopes greater than 60% at odds with the stipulation for the adjoining lease (COC-1362), it conflicts with the 1993 Forest Plan amendment for oil and gas leasing. That decision required an NSO stipulation for slopes greater than 60%.[48] Why the Forest Service would prohibit road and well pad construction on such slopes for oil and gas development but not bar exactly the same type of construction for coal MDWs is nowhere explained. The Forest Service's adoption of the inconsistent stipulation for COC-67232 is arbitrary and capricious.[49]

Further, the ROD's decision to omit the stipulation on slopes greater than 60% for lease modification COC-67232 is also arbitrary and capricious because it undermines the rationale the FEIS gave for dismissing an alternative that would have required NSO stipulations on lands with slopes greater than 40%. The agency stated: "A stipulation that requires no surface occupancy be allowed ... ["]on slopes which exceed 60%" … already exist[s] as part of … Alternatives 2 and 3." FEIS at 40. But the ROD failed to adopt an NSO stipulation based on slope for lease modification COC-67232. ROD at 29.

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[48] Forest Service, Record of Decision, GMUG National Forest Oil and Gas Leasing EIS (Apr. 19, 1993), excerpts attached as Exh. 22.

[49] The Forest Service cannot argue that the NSO stipulation for slopes greater than 60% is somehow duplicative, or the same as, a stipulation that bars surface use of "areas of high geologic hazard or high erosion potential." The parent lease for C-1362 provides that NSO stipulations are necessary for both slopes greater than 60% and "areas of high geologic hazard or high erosion potential." FEIS at 23. Further, the 1993 Final EIS for oil and gas leasing considered slopes greater than 60%, areas of high geologic hazard, and areas with high erosion potential to be three separate categories of resource concern, as demonstrated by a monitoring form identifying each of the three separately. See Forest Service, GMUG National Forest Oil and Gas Leasing Final EIS, Vol. II (1993), App. H, H-31, excerpts attached as Exh. 23.

This is not a case where the Forest Service determined that no areas of 60% slopes existed within the lease modification areas. According to a map in the project file, areas of land with greater than 60% slope do occur within both lease modifications.[50]

Finally, because the two lease modifications will have different stipulations concerning construction on slopes, they may have different types of environmental impacts. However, the FEIS fails to disclose whether this is the case. This violates NEPA's "hard look" requirement.

The FEIS provides no rational basis for why the agency will provide different levels of protection in the same decision for the two lease modification areas that are directly adjacent to one another. The FEIS states only: "The Forest Service in analyzing the effects of this proposal did not find any justification to deviate from the existing stipulations on the parent leases." FEIS at 552. In other words, the Forest Service simply decided it best to perpetuate a non-sensical and unjustified difference between the two parent leases rather than correct the inconsistency with this decision. The FEIS other explanation – that inconsistent stipulations "have been determined adequate on parent leases to protect surface resources," FEIS at 571 – is equally bereft of rationality. Why the Forest Service would prevent road and well pad construction on slopes greater than 60% for all oil and gas wells, and would prevent similar construction for MDWs on similar slopes for one coal lease, but not the other, is nowhere explained. This failure to justify the difference in stipulations is arbitrary and capricious.

C. The Forest Service Arbitrarily Dismissed A Stipulation To Revegetating Lands From Livestock Grazing.

The FEIS admits that post mining "revegetation efforts can be negatively affected by livestock presence and use." FEIS at 157. However, the Forest Service has "[t]ypically" taken the following actions "to assure revegatative success," namely: "temporary electric fencing is

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[50] See Map, MCC Lease Modifications (from USFS Project File) attached as Exh. 24.

placed around newly reclaimed areas during the first growing season. After this period, fencing is removed and livestock usage does not appear to impact revegetation efforts as long as the livestock is managed according to standards." Id.

Because fencing out cattle for one growing season after re-seeding and reclamation is "typical" agency practice, and because such fencing is effective at mitigating the impacts of livestock grazing that might otherwise interfere with reclamation, we urged the Forest Service to adopt a stipulation requiring such fencing.[51] Requiring the lease-holder to ensure effective reclamation is both reasonable and in line with the Forest Service's duty to protect the Forest's non-mineral resources.

Despite the reasonableness of such an approach, the Forest Service declined to adopt it, stating:

> As indicated in the EIS, no surface disturbing activities are proposed or authorized by this action. Requiring fencing at a leasing stage, when no site specific information is available would not be appropriate. In certain areas, the use of fencing could negatively impact livestock management or other multiple use activities. This type of requirement would be more appropriate working within the State permitting process, not at the leasing stage.

FEIS at 570. This rationale is arbitrary ad capricious. The Forest Service has a duty at the lease stage to ensure that its consent to lease includes stipulations that "are sufficient for the protection of non-mineral (i.e. surface) resources." FEIS at 16. The leases currently contain stipulations designed to ensure that surface values – including livestock grazing – will not be unduly damaged by surface uses and subsidence. See, e.g., FEIS at 24-25 (requiring MCC to repair damage from subsidence to stock ponds for livestock); id. at 26-29 (numerous stipulations designed to limit destruction to lynx habitat caused by the road and MDW pad construction that will follow mining); id. at 29 (requiring lessee to work with Forest Service to "see that all mine

[51] HCCA Comment Letter (Exh. 5) at 18.

operations are situated on the ground in such a manner that reasonably minimizes the scenic integrity of the landscape"); id. at 22 (Forest Service may curtail time and season of surface use to protect wildlife). It is arbitrary for the Forest Service to find it "appropriate" to impose these numerous restrictions at the least stage to protect surface resources from surface disturbance, but then to reject the proposed stipulation concerning livestock as "not appropriate" because the agency cannot tell where surface disturbance would occur. And while the Forest Service alleges that "[i]n certain areas, the use of fencing could negatively impact livestock management or other multiple use activities," FEIS at 570, the Forest Service knows now exactly where the lands are to be leased, and it presumably knows what activities take place within the Lease Modifications area. The agency nowhere explains why or how fencing might conflict with these other resources.

VII. THE FOREST SERVICE VIOLATED NEPA BY FAILING TO ANALYZE REASONABLE ALTERNATIVES TO REDUCE THE METHANE POLLUTION FROM THE COAL LEASE MODIFICATIONS.

A. The Forest Service Must Analyze A Range Of Reasonable Alternatives.

When the Forest Service prepares an EIS, it must take a "hard look" at the project's environmental impacts and the information relevant to its decision. Wyoming v. U.S. Dep't of Agriculture, 661 F.3d 1209, 1237 (10th Cir. 2011). In taking the required "hard look," an EIS must "study, develop, and describe" reasonable alternatives to the proposed action. 42 U.S.C. § 4332(2)(E); 4332(2)(C)(iii). This alternatives analysis "is the heart of the environmental impact statement." 40 C.F.R. § 1502.14; see also All Indian Pueblo Council v. United States, 975 F.2d 1437, 1444 (10th Cir. 1992). As a result, agencies must "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14. "To comply with the National Environmental Policy Act and its implementing regulations, [agencies] are required to rigorously explore all reasonable alternatives ... and give each alternative substantial treatment in

the environmental impact statement." Custer County Action Ass'n v. Garvey, 256 F.3d 1024, 1039 (10th Cir. 2001) (emphasis added). See also New Mexico ex rel. Richardson v. Bureau of Land Management, 565 F.3d 683, 703 (10th Cir. 2009) ("an EIS must rigorously explore and objectively evaluate all reasonable alternatives to a proposed action, in order to compare the environmental impacts of all available courses of action"); Colo. Envtl. Coalition v. Dombeck, 185 F.3d 1162, 1174 (10th Cir. 1999) (explaining reasonable alternatives). "Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded." New Mexico ex rel. Richardson, 565 F.3d at 708.

B. The Coal Lease Modifications Will Cause Significant Methane Pollution.

Despite the substantial GHG emissions that will result from the Forest Service's consent to the Lease Modifications – which the FEIS estimates could have the heat-trapping impacts of as much as 1.2 million tons of CO_2 per year for nearly three years – the FEIS "eliminated from detailed study" alternatives that would reduce or otherwise mitigate these emissions.[52] These substantial annual methane emissions – with the heat-trapping potential greater than the annual CO_2 emissions of the coal-fired Valmont Power Plant in Boulder[53] – will occur for 2.9 years without controls or effective mitigation as a result of the decision to approve the Lease Modifications. This is significant. Both the U.S. Environmental Protection Agency ("EPA") and the Council on Environmental Quality ("CEQ") have concluded that projects and sources

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[52] See FEIS at 75, 506 (July 2010-June 2011 methane emissions equivalent to 1.23 million tons of CO_2); id. at 37-38 (eliminating pollution reduction measures from consideration as alternatives).

[53] See EPA, GHG Data, 2010 Greenhouse Gas Emissions from Large Facilities, available at http://ghgdata.epa.gov/ghgp/main.do (last viewed Sep. 23, 2012) (Valmont Power Plant emitted 1.1 million tons of CO2 equivalent in 2010).

with GHG emissions of 100,000 tons, or as low as 25,000 tons, of CO_2e per year – a far lower amount than the lease modifications are predicted to cause – are significant and should be subject to increased analysis and control.[54]

The U.S. Supreme Court has noted that the harms caused by climate change "are serious and well recognized," Massachusetts v. EPA, 549 U.S. 497, 521 (2007), while EPA has stated that the "root cause" of climate change is the elevated concentrations of GHGs resulting from anthropogenic activities (to which burning coal contributes). Endangerment Finding, 74 Fed. Reg. 66,496, 66,517–18 (Dec. 15, 2009). Accordingly, President Obama, Secretary of the Interior Salazar, and former Colorado Governor Ritter have issued orders calling for a reduction in GHG emissions by federal and state agencies.[55] Secretary Salazar has declared that the Department of the Interior "is responsible for helping protect the nation from the impacts of climate change."[56] The Forest Service's failure to analyze reasonable alternatives to limit GHGs while consenting to the Lease Modifications ignores this guidance and results in an inadequate consideration of a substantial environmental question of material significance to the proposed action, violating NEPA.

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[54] Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514, 31,516. 31,523(June 3, 2010) (under EPA's Tailoring Rule, sources that emit over 100,000 tons per year of CO_2e are "major sources" subject to controls); CEQ, Draft Climate Change Guidance (Feb. 18, 2010) at 3 & n.2, attached as Exh. 25 (noting that a 25,000 tons per year CO_2e threshold provides agencies with a "useful indicator" of significant climate change impacts under NEPA warranting additional analysis).

[55] See Exec. Order No. 13514 (Oct. 5, 2009), reprinted in 74 Fed. Reg. 52,117 (Oct. 8, 2009); Interior Secretary Order No. 3289 (Sept. 14, 2009), attached as Exh. 26; Colo. Exec. Order No. D 004 08 (Apr. 22, 2008), attached as Exh. 27; Speech of Interior Secretary Salazar, Copenhagen, Denmark (Dec. 10, 2009) ("the United States of America understands the danger that climate change poses to our world and we are committed to confronting it. Together with our partners in the international community, we will help build a strong, achievable, carbon reduction strategy."), attached as Exh. 28.

[56] Interior Secretary Order No. 3289, at 2 (Exh. 26).

The FEIS admits that climate change will harm the GMUG National Forest. The FEIS concludes that "Projected Climate Change" will have numerous "Potential Consequences to Resource Values" on the Forest, including: "Decreased summer stream flows;" "Potential change to aquatic species reproductive triggers or success;" "Increased risk to channel and floodplain infrastructure from higher runoff;" "Increased risk to riparian habitat/floodplains from higher flows;" "Decreased dissolved oxygen in lower elevation streams during the summer;" "Aquatic biota mortality and even loss of populations;" "Reduced riparian vegetation health and vigor;" "Increased landslides and slumps on geologically unstable areas;" "Increased potential damage to saturated roadbeds;" "Reduced aquatic habitat in summer and fall;" "Increased erosion associated with natural disturbances associated with drought (e.g. fire);" "Increased plant stress and susceptibility to insect and disease mortality;" and "Reduced wetland/riparian function." FEIS at 86-87. Based on the potential for these and other harms to the Forest's resources arising from climate change, GMUG Supervisor Charlie Richmond more than four years ago pledged that the Forest would "continue to 'lead the charge' with our partners to explore options [for coal mine methane mitigation] because it is the right thing to do for the environment."[57]

Despite the significant impacts the FEIS predicts that climate change will likely have on the GMUG National Forest, and the Forest Supervisor's commitment to "lead the charge" in "explor[ing] options" that would reduce the level of methane pollution from coal mines, the FEIS fails to analyze adequately such GHG mitigation measures for this project. This is disappointing because the FEIS's failure to adequately analyze measures to reduce methane pollution is a lose-lose-lose-lose proposition: it results in needless and damaging pollution; it represents a waste of a valuable federal resources; it represents a loss of royalties to state and

[57] See C. Richmond, "Capturing methane released by mines is a work in progress," Grand Junction Sentinel (Mar. 23, 2008), attached as Exh. 29.

county governments due to the failure to sell federal methane; and it represents a lost opportunity to create jobs in the area to construct and operate methane pollution reduction devices. It also means that the West Elk Mine will continue to lag behind the Elk Creek Mine just across the road, as well as mines in Alabama, the U.K., Australia, China, and many other countries in caring for the environment. Far from "leading the charge," as Supervisor Richmond promised, the GMUG National Forest continues to drag its feet and lag behind. The failure to consider a range of reasonable alternatives that includes pollution control also violates NEPA.

C. The Forest Service Fails To Acknowledge Opposing Viewpoints That Call Into Question The Foundation For The Agency's Refusal To Consider Requiring Methane Pollution Controls.

As noted above, NEPA requires agencies to explain opposing viewpoints and their rationale for choosing one viewpoint over the other. 40 C.F.R. § 1502.9(b) (requiring agencies to disclose and discuss responsible opposing viewpoints). See also Ctr. for Biological Diversity, 349 F.3d at 1168; Silva v. Lynn, 482 F.2d at 1285; Sierra Club v. Eubanks, 335 F. Supp. 2d at 1076 ("[c]redible … evidence that [contradicts] a proposed action must also be evaluated and considered"); Seattle Audubon Soc'y v. Lyons, 871 F. Supp. at 1318 ("[the EIS] must also disclose responsible scientific opinion in opposition to the proposed action, and make a good faith, reasoned response to it."). See also supra at 19.

As EPA recognized, the Forest Service relies heavily on a 2009 report prepared by MCC to justify a conclusion that none of the many pollution control technologies proposed by EPA and Appellants are economically feasible.[58] But the FEIS never acknowledges or addresses

[58] See letter of S. Bohan, EPA to S. Hazelhurst, GMUG National Forest (July 11, 2012) at 2 (identifying "the key role the 2009 [MCC] Report plays in the DEIS conclusion nopt to require any greenhouse gas emissions reduction technologies"), attached as Exh. 30 ("EPA July 2012 Comment Letter"). See also FEIS at 37-38 (relying on MCC's 2009 analysis, attached to the FEIS as Appendix A, to conclude that the cost of implementing such alternatives were

opposing viewpoints about the economic feasibility of the projects. Specifically, Dr. Thomas Power prepared extensive analysis of MCC's report concluding – contrary to MCC's report – that implementing several of the pollution control measures is, in fact, economically feasible.[59] Appellants have repeatedly provided these reports to the Forest Service and BLM.[60] While the Forest Service bases its decision not to require a number of pollution control methods on MCC's report, see FEIS at 38, it never discusses, yet alone acknowledges, Dr. Power's contrary findings.[61]

In addition, the Forest Service ignores and fails to acknowledge contrary scientific opinion provided by EPA concerning the feasibility of methane pollution control alternatives, including those that control pollution form ventilation air methane (VAM). While the Forest Service continues to rely on the 2009 MCC report to address the feasibility of measures to control VAM pollution, EPA noted in July that: "The commercial availability and regulatory acceptance of technologies for oxidation of VAM has improved since the 2009 [MCC] Report."[62] In dismissing VAM oxidation alternatives, the FEIS also asserts that "no technology currently exists that has been demonstrated to have the capability of handling the volume of ventilation air" emitted at West Elk. FEIS at 37. EPA's letter disputes that conclusion, stating:

"prohibitive"); id. at 66-69 (repeatedly relying on the R2P2 report, also known as the "2009 Economic Feasibility Report," in describing potential methane pollution control measures).

[59] T. Power, et al., An Economic Analysis of the Capture and Use of Coal Mine Methane at the West Elk Mine, Somerset, Colorado (Jan. 7, 2010), attached as Exh. 31; T. Power et al., An Economic Analysis of the Capture and Use of Coal Mine Methane at the West Elk Mine, Somerset, Colorado, December 2011 Update (Dec. 2011), attached as Exh. 32.

[60] Appellants submitted Dr. Power's 2010 report to the Forest Service more than two years ago, as Exh. 192 to their May 20, 2010 scoping comments on this project.

[61] The FEIS repeatedly relies on MCC's 2009 Report for all manner of analysis relating to methane pollution control in the FEIS section analyzing mitigation measures. See FEIS at 66-69.

[62] EPA July 2012 Comment Letter (Exh. 30) at 5. See also id. at 5-6 (describing industry developments in VAM oxidation since 2009).

"VAM oxidizers are capable of handling very large air volumes. The units are modular and multiple units can be configured to handle the appropriate ventilation flow rates."[63] EPA clearly has expertise in the area of methane pollution abatement, given that it regulates greenhouse gases and runs the Coalbed Methane Outreach Program, the mission of which is to encourage the capture, use, or destruction of coal mine methane. While the FEIS elsewhere appears to acknowledge this contrary expert opinion,[64] the FEIS nonetheless dismisses the alternative of VAM oxidation on the basis that "no technology … exists," an incorrect conclusion, without addressing the contrary evidence and expert opinion.

The Forest Service's failure to disclose, address, or explain the expert conclusions of either RPA or Dr. Power's that contradict the agency's conclusions violates NEPA.

D. The Forest Service Fails To Analyze Oxidation Of Ventilation Air Methane As A Reasonable Alternative To Reduce The Lease's Methane Pollution.

The Lease Modifications are predicted to prolong the West Elk Mine's life for nearly three years.[65] Methane pollution from the Mine's ventilation system will thus continue for that period. The majority of methane emissions from approving the Lease Modifications will likely be from the Mine's ventilation system. This methane pollution, known as ventilation air methane ("VAM"), is distinct from methane removed by methane drainage wells ("MDWs"). VAM makes up over half of all coal mining emissions in the United States and worldwide; data

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[63] Id. at 6.

[64] FEIS at 69 ("some VAM oxidizers "have modular designs and may be 'stacked' to meet air flow requirements").

[65] FEIS at 54 (Alternative 3 "would extend the life of the West Elk Mine by approximately 2.9 years").

from the West Elk Mine from early 2010 showed that VAM constituted a little over half of the Mine's total of 7.5 million cubic feet of daily methane emissions.[66]

VAM mitigation measures are technically and economically feasible. Such measures have been adopted at coal mines elsewhere in the United States and around the world.[67] VAM cannot be flared because the concentrations of methane in ventilation air are too dilute, so other technologies must be used to combust VAM. EPA and others report, however, that technology is available and is being successfully employed to reduce 95% or more of VAM emissions from numerous coal mines.[68]

EPA's Coalbed Methane Outreach Project has identified at least four VAM oxidation projects that are completed, underway, or planned across the United States that utilize oxidation to eliminate VAM.[69] EPA has also compiled additional examples of technologies that use or destroy VAM in coal mines in the U.S. and around the world.[70] For example, a coal mine in

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[66] See Mountain Coal Co., First Quarter 2010 Methane Release Data (May 3, 2010), attached as Exh. 1.

[67] See, e.g., J.M. Somers & H.L. Schultz, Coal mine ventilation air emissions: project development planning and mitigation technologies 116-21 (2010), attached as Exh. 33.

[68] See, e.g., Durr Envtl. & Energy Sys., Securing Your VAM Investment with Proper RTO Technology 4 (2010), attached as Exh. 34; EPA, Ventilation Air Methane (VAM) Utilization Technologies (2009), attached as Exh. 35; Deborah A. Kosmack, Capture and Use of Coal Mine Ventilation Air Methane 79 (2009), excerpts attached as Exh. 36; EPA July 2012 Comment Letter (Exh. 30) at 5-6 (listing three mines utilizing VAM oxidation technologies in the U.S., and noting that 10 more overseas use such pollution controls).

[69] Pamela Franklin et al., EPA, EPA Activities to Promote Coal Mine Methane Recovery, at unnumbered slide 5 (2010), attached as Exh. 37. The four projects include: the CONSOL Windsor Mine (closed) (MEGTEC vocsidizer); Jim Walter Resources Mine No. 4 (Biothermica VAMOX); CONSOL McElroy mine in West Virginia (Durr Ecopure technology) – to go online in the second quarter of 2011; and CONSOL Enlow Fork mine in Pennsylvania – scheduled to be operational in late 2010. Further, as explained below, MSHA data demonstrates that VAM oxidation is likely technically feasible at the Elk Creek Mine. See EPA, U.S. Underground Coal Mine VAM Exhaust Characterization 1, 11, attached as Exh. 38.

[70] EPA, VAM Utilization Technologies at 1-4 (Exh. 35).

Australia uses VAM to generate power, and at least five VAM projects in China will begin operations in the next two years, including a project that will generate electricity from VAM.[71]

The Forest Service must consider "all possible approaches to, and potential environmental impacts of, a particular project." Wilderness Soc'y v. Wisely, 524 F. Supp. 2d 1285, 1309 (D. Colo. 2007) (emphasis added). Granting MCC consent for the Lease Modifications while requiring MCC to put in place VAM controls on its ventilation system to reduce methane emissions clearly represents one possible, reasonable approach to MCC's request for the lease expansions. These technologies and controls are "alternatives" to the proposed action – they would, when combined with the proposed action, achieve the basic aims of the proposed action by different means, while eliminating or lessening the adverse environmental consequences of that action.

Despite the multiple examples of successful VAM mitigation measures, the FEIS eliminated from detailed study an alternative that would require MCC to mitigate or eliminate VAM emissions. FEIS at 37-38. Data and independent research demonstrate that VAM reduction technologies may likely be technically feasible at the West Elk Mine. Data prepared for MCC shows that the Mine is producing methane in sufficient concentrations to operate a VAM oxidizer at least part of the time. These data show methane concentrations ranging from 0.15% to 0.31%.[72] While in general, the higher the methane concentration the more economical

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[71] See, e.g., BHP Billiton, World's First Power Plant to Use Coal Mine Ventilation Air as Fuel, attached as Exh. 39; EPA, Coalbed Methane Extra, Summer 2010, at 4, attached as Exh. 40; EPA, Coalbed Methane Extra, Dec. 2009, at 2, attached as Exh. 41; Letter of E. Zukoski, Earthjustice, to C. Richmond, GMUG NF (May 20, 2010) at 91 ("Conservation Scoping Letter"), attached as Exh. 42.

[72] FEIS at 69. See also Verdeo Group, Inc., Ventilation Air Methane Oxidation Feasibility Study: Evaluation of Technical and Economic Project Viability at the West Elk Mine, at 3, 9 (September 2009), attached as Exh. 43; MCC, West Elk Mine E-Seam Gas Economic Evaluation Report, at 17 (Sept. 24, 2009) ("R2P2"), attached as Exh. 44.

VAM becomes, VAM oxidizers are proven to operate reliably at concentrations as low as 0.2%. For example, an EPA report dated 2010 concluded that "one technology (the thermal flow-reversal reactor or TFRR) has been proven to operate reliably on VAM, even at concentrations as low as 0.2 percent."[73] MEGTEC's brochure states that its VAM destruction technology can generate heat or energy with volumes as low as 0.3% methane, and at varying volumes of VAM. Modular systems allow a mine to purchase the right number of VAM oxidizers for the volume of VAM for which the VAM wishes to remediate methane pollution.[74] Biothermica states that its "VAMOX" VAM destruction system "[a]ccepts a broad methane level range (0.2% to more than 1%)."[75] Further, a 2010 study prepared by Ph.D. economist Thomas Power suggests that the low level of methane in West Elk's VAM may be a transitory phenomenon, and that there may be ways MCC can alter its ventilation system to produce VAM at concentrations that could be combusted.[76] EPA agrees with both of Dr. Power's conclusions, urging the Forest Service to undertake a reevaluation that addresses the options of boosting methane levels in VAM, and that determines whether the 2009 data concerning VAM methane concentrations remain accurate.[77]

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[73] EPA, U.S. Underground Coal Mine VAM Exhaust Characterization at 1 (Exh. 38). See also id. at 13 ("If the concentration of methane entering flow-reversal reactors is high enough (i.e. ≥ 0.2 percent), the proper amount of heat will be released into the oxidizer bed to support ongoing auto-oxidation of incoming VAM without the need for any supplemental fuel."); J.M. Somers & H.L. Schultz (Exh. 33) at 120 (showing 6 technologies that oxidize VAM where methane concentrations are 0.25% or lower).

[74] MEGTEC, Ventilation Air Methane (VAM) Processing, MEGTEC Solutions for VAM Abatement, Energy Recovery & Utilization, attached as Exh. 45, and available at http://www.megtec.com/documents/MEGTEC%20Ventilation%20Air%20Methane%20(VAM)%20Processing.pdf (last viewed Sep. 23, 2011).

[75] Biothermica, VAMOX, Create Value from VAM, attached as Exh. 46, and available at http://www.biothermica.com/brochure_pdf/vamox_2010_en.pdf (last viewed Sep. 23, 2012).

[76] See Power 2010 report (Exh. 31) at 22-23.

[77] EPA July 2012 Comment Letter (Exh. 30) at 6.

The FEIS dismisses VAM reduction as an option for a number of reasons, all of which lack support. The FEIS's failure to fully and fairly evaluate an alternative that would include a requirement that MCC reduce or eliminate methane in VAM emissions is arbitrary and capricious and must be set aside. See Wilderness Soc'y, 524 F. Supp. 2d at 1311 (holding that BLM violated NEPA for failing to "adequately explain why the … alternative was dropped").

The FEIS argues that "no technology currently exists that has been demonstrated to have the capability of handling the volume of methane air and dilute concentrations of methane at the West Elk Mine to make capture economically feasible." FEIS at 37. This assertion is wrong for at least three reasons. First, MEGTEC has explained that its VAM oxidation system can be expanded with additional units to handle greater volumes of VAM.[78] EPA has agreed that this is so. See supra at 52-53. So, technology does exist that can handle the volume of ventilation air at West Elk. Further, the mine need not treat all of the ventilation air. It could simply oxidize some of the VAM. The FEIS fails to address such an alternative.

Second, existing technology and strategies could address the dilute concentrations of methane, including supplementing the methane that is emitted as VAM and only oxidizing methane when the concentration exceeds 0.2%. See supra at 56.

Third, there is no reason why the Forest Service must make VAM technology economically attractive to MCC. The Forest Service can simply require the Mine to reduce methane pollution from VAM to protect Forest Service surface resources currently being damaged by climate change.

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[78] MEGTEC (Exh. 45) ("The MEGTEC VAM solution is modular, based on VOCSIDIZER Twin Units with a capacity of handling 125,000 Nm3/h (80,000 scfm) of ventilation air. Larger installations are multiples of VAM Cubes, where the twin units are installed on two levels" (emphasis added); id. (table showing 4 VAM Cubes can process 1,000,000 normal cubic meters per hour of ventilation air, or 640,000 standard cubic feet per minute). Using this system, larger volumes of VAM could be handled by additional units.

Elsewhere in the FEIS, the Forest Service purports to address VAM pollution control as a mitigation measure. Its analysis there is equally flawed, and its rationales for giving VAM pollution control short shrift are equally baseless. First, the FEIS pleads ignorance as to how a VAM system would be designed. FEIS at 69 ("The design of such [VAM oxidation] units may ultimately be ineffective for total VAM oxidation if space is an issue, or if vent configuration is not conducive to efficient engineering standards" (emphasis added)). This ignores the fact that it is the Forest Service's duty to explore options and track down information, not simply to rely on its own ignorance of a particular topic to dismiss an alternative. Obtaining such information would not be difficult, given that other mines in the U.S. (and around the world) have designed and operated such systems. The Forest Service could easily contact any or all of the numerous vendors known to install such systems, and reviewed the terrain and layout of MCC's mining operations. The Forest Service's failure to obtain this necessary information shows that the agency failed to take the "hard look" NEPA requires.

Second, the Forest Service alleges that it is "is unknown and unforeseeable is what those [VAM pollution control] scenarios might look like at the West Elk mine or more specifically if they would be economically beneficial to the mine or the greater public." FEIS at 69. Again, alternatives incorporating pollution control measures need not economically benefit the lease holder to be reasonable or to be fully disclosed, analyzed, and adopted by the agency. The FEIS provides no explanation for why it assumes MCC must profit from mitigating pollution it would otherwise emit. And again, the Forest Service cannot base dismissal of an alternative on grounds of ignorance. Further, an expert economist found that MCC's conclusions about the economic feasibility of mitigation measures were based on flawed assumptions.[79]

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[79] See Power 2010 report (Exh. 31).

Third, the FEIS asserts that VAM oxidation will result in pollution, including CO_2, and criteria pollutants. FEIS at 69. This contention does not justify the elimination of an otherwise reasonable alternative. The FEIS provides no information on the nature or extent of criteria pollutant emissions that might result from VAM oxidation, nor does it explain why the Forest Service could not provide such information to the public. In contrast, the Forest Service and the public know that VAM would reduce and mitigate hundreds of thousands of tons of CO_2e pollution annually, which would have concrete climate benefits. Without more detailed information concerning the potential levels of criteria air pollutants, it is impossible for the Forest Service or the public to weigh the climate benefits of VAM oxidation against VAM oxidation's potential air pollution impacts. The FEIS's failure to provide or investigate such information undermines the "heart" of NEPA: comparing alternatives. See Diné Citizens, 747 F. Supp. 2d at 1254.

Any suggestion that VAM oxidation is unreasonable because of criteria pollutant and CO_2 pollution is undermined by the fact that EPA – the federal agency responsible for regulating criteria air pollutants and GHG emissions – has an entire program dedicated to reducing coal mine methane emissions in part through VAM oxidation.[80] EPA has urged agencies – including encouraging the Forest Service with respect to this very mine – to analyze VAM oxidation in EISs and EAs analyzing Colorado mine expansions. For these reasons, the FEIS's decision to not analyze a VAM pollution control alternative in detail violates NEPA.

In sum, the FEIS contains a host of erroneous or unsupported rationales for declining to consider in detail the alternative of requiring MCC to adopt VAM technologies to reduce methane pollution. The FEIS's analysis must therefore be set aside and remanded.

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[80] See EPA, Coalbed Methane Outreach Program, http://www.epa.gov/cmop/ (last viewed Sep. 23, 2012).

E. The Forest Service Fails To Analyze Methane Flaring As A Reasonable Alternative.

The West Elk Mine removes methane not only through ventilation systems (as VAM), it also vents methane through MDWs. The FEIS predicts that MCC will construct 48 MDWs to remove methane in order to mine the lease modification areas. FEIS at 54. Methane vented though MDWs represented nearly 3.5 million cubic feet a day in early 2010, when the Mine was operating far below its estimated capacity.[81]

Coal mine methane from drainage wells can be combusted, or flared, before it enters the atmosphere. Flaring results in 7.5 times fewer GHG emissions than venting methane directly into the atmosphere.[82] Despite the potential benefits of methane flaring, the FEIS dismisses detailed consideration of a flaring alternative without a rational basis. Methane flaring, however, is a reasonable, practical, effective, and feasible alternative to reduce the Lease Modifications' GHG emissions.[83]

There is a long and safe history of flaring at working underground coal mines. Active mine flaring has been conducted at working coal mines in Australia and the United Kingdom.[84] The Global Methane Initiative's database lists eight operating underground coal mines around the world that utilize flares, including mines in Australia, South Africa, the UK, and the

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[81] See MCC First Quarter 2010 Methane Report (Exh. 1). Of the 3.5 million cubic feet per day vented from the mine in early 2010, 1 million was emitted from MDWs in the E Seam, and 2.5 million from MDWs in the B Seam. Id.

[82] Daniel J. Brunner & Karl Schultz, Effective Gob Well Flaring 724 (1999), attached as Exh. 47.

[83] See Conservation Scoping Letter (Exh. 42) at 88-89.

[84] EPA, International News – Coalbed Methane Outreach Program (2009) (Australia), attached as Exh. 48; The Coal Authority, Coal Mine Methane Activity in the UK (UK), attached as Exh. 49.

Ukraine.[85] A Global Methane Initiative white paper identifies flaring projects at coal mines in the UK and Russia.[86] Evidence was presented at a 2007 EPA conference that methane flaring at working coal mines was "state of the art," and that flaring to dispose of vented methane at coal mines was "[s]imple, low cost and reliable to operate" with "[l]ow maintenance requirements."[87]

One industry expert with over thirty years of experience has noted that "[o]ff the shelf systems are available from companies that provide Flaring systems that are designed for and are in use around the world over coal mines."[88] A November 2011 compilation by the Global Methane Initiative indicated ten vendors worldwide selling coal mine methane flare systems.[89]

EPA has reported that flaring is standard safety practice in many industries, and concluded that "outside of the United States, methane flaring at underground coal mines is widely accepted and approved as a safe practice."[90] As a result, EPA has repeatedly urged the Forest Service and BLM to consider flaring as an alternative in NEPA documents evaluating coal mine expansions in Colorado - including encouraging the Forest Service five years ago with respect to this very mine.[91] EPA also created a conceptual design for a system to flare coal mine

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[85] See Global Methane Initiative database print out, attached as Exh. 50, available at http://www2.ergweb.com/cmm/index.aspx (last viewed Sep. 23, 2012).

[86] Global Methane Initiative Coal Subcommittee, Flaring of Coal Mine Methane: Assessing Appropriate Opportunities (Nov. 1, 2011) at 6-7, attached as Exh. 51.

[87] See Harworth Power Ltd., CMM Flaring, at 6, 26 (2007), excerpts attached as Exh. 52.

[88] J. Hempel, Preliminary Assessment of the Feasibility of Capturing and Using Coalbed Methane Gas 4, unmarked pages 8-11 (2008), attached as Exh. 53 (résumé noting Mr. Hempel's extensive experience).

[89] Global Methane Initiative, Coal Mine Methane Mitigation and Utilization Technologies and Project Profiles (Nov. 16, 2011), excerpts attached as Exh. 54.

[90] Letter of L. Svoboda to C. Richmond (Aug. 7, 2007) at 6, attached as Exh. 55.

[91] See, e.g., id. (noting widespread use and benefits of flaring); letter of Larry Svoboda, EPA, to Melissa Smeins, BLM, at 3 (Apr. 22, 2010) (comment letter on BLM's EA on a coal lease for Colorado's New Elk Mine, stating: "We recommend that BLM issue additional analysis for

methane, which the agency promoted as a way to reduce coal mine methane pollution, notwithstanding other pollutants flaring might cause.[92]

Other agencies have realized the potential benefits of flaring. BLM's regulations specifically permit flaring of natural gas (methane) from oil and gas wells during, inter alia, initial production tests.[93] MSHA has also stated that methane flaring is safe and that "there are no specific obstacles" preventing MSHA from approving flaring at working coal mines in western Colorado under certain conditions.[94]

And at another mine removing coal from GMUG National Forest lands – the Elk Creek Mine, located just a few hundred yards west of the West Elk Mine – Oxbow Mining has sought a permit to capture methane from drainage systems at one part of the Mine to generate electricity.[95] Oxbow's planned methane capture facilities would apparently include a flare – "a thermal oxidizer capable of oxidizing or 'flaring' the mine methane."[96] The Colorado Division of

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public review that assesses alternatives and/or potential mitigation measures to reduce the projected [coal mine] methane emissions, including … flaring …."), attached as Exh. 56.

[92] EPA, Conceptual Design for a Coal Mine Gob Well Flare (1999), excerpts attached as Exh. 57.

[93] See U.S. Dep't of Interior, Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases (NTL-4A), at III (1980) (authorizing flaring of gas wells), attached as Exh. 58.

[94] See, e.g., email from Hubert E. Sherer, MSHA, to Liane Mattson, USFS (Oct. 26, 2007, 3:12 pm), attached as Exh. 59; letter of A. Davis, MSHA District 9 to D. Dyer, BLM (May 18, 2010), attached as Exh. 60 ("Since flaring has not been done on active mine gobs in the past in this MSHA district, a plan to flare would have to be reviewed by MSHA's Technical Support group to ensure it adequately addresses all the necessary precautions to ensure safety of all persons in the mine. There is no specific obstacle to accomplishing this ….").

[95] See Letter of J. Kiger, Oxbow, to B. Bowles, Colo. Div. of Mining, Reclamation & Safety, at 1 (Oct. 14, 2011) (stating that "North Fork Energy LLC has determined the economic viability of constructing and operating a facility to utilize mine methane from Oxbow's underground mine methane collection system" and seeking agency approval for the same), attached as Exh. 61.

[96] Id. at un-paginated attachment to letter (emphasis added).

Mining, Reclamation and Safety ("DRMS") apparently approved this project, including the flare, in March 2012.[97]

The Solvay trona mine in Wyoming is now using an enclosed flare to address methane pollution, something for which that mine is generating 1.2 million "climate reserve tonnes" that can be purchased as carbon offsets verified by the Climate Action Reserve.[98] Further, the Pinnacle underground coal mine in West Virginia is putting in place an enclosed flare that will also 1.2 million climate reserve tonnes.[99] "The flare will be located at the wellhead of the mine's highest producing gob well."[100]

EPA, in comments on this EIS, reaffirmed its belief in the practicality and environmental benefits of flaring, reinforcing many of the points discussed above.

> [T]the DEIS evaluation did not provide or discuss any monetary benefit to flaring as a mitigation option such as carbon credits which could improve the economic feasibility of flaring. Furthermore, EPA believes it is worth disclosing the potential health and safety benefits attributable to using a flare to destroy VOCs and hazardous air pollutants (HAPs). More specifically, flaring of methane gas is a standard safety practice in many industries and is routinely used during processing and production of oil and gas, from landfill collection systems and the petroleum industry. Flaring appears to provide substantial benefit with less capital cost than … power generation.
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> The [Forest Service's] reevaluation of flaring should also disclose the increasing commercial availability and acceptance of flaring by regulatory agencies. The

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[97] See letter of J. Kiger, Oxbow to F. Kirby, Office of Surface Mining, (Mar. 15, 2012), attached as Exh. 62.

[98] Sindicatum Projects, Coal Mine Methane, US: SOLVAY, Wyoming, attached as Exh. 63, available at http://www.sindicatum.com/portfolio_item/coal-mine-methane-us-solvay-wyoming/ (last viewed Sep. 23, 2012); see also Climate Action Reserve website http://www.climateactionreserve.org/how/crt-marketplace/ (explaining how Climate Action Reserve carbon offsets work) (last viewed Sep. 23, 2012), attached as Exh. 64.

[99] Sindicatum Projects, Coal Mine Methane, US: CLIFFS, West Virginia, attached as Exh. 65, available at http://www.sindicatum.com/portfolio_item/coal-mine-methane-us-cliffs-west-virginia/ (last viewed Sep. 23, 2012).

[100] Id.

> MSHA safety concerns expressed in the DEIS (page 35) do not make flaring infeasible. It is EPA's understanding that MSHA has not received or reviewed any applications for flaring at a U.S. coal mine. EPA agrees with the characterization in the DEIS that describes MSHA's policy of reviewing mine applications for flaring on a case-by-case basis. MSHA does not have an official policy on flaring of gas at coal mines, therefore MSHA would review each flaring plan individually to ensure that it adequately incorporates appropriate protections such as bubble traps, fail-safe valving, flame arresters, or monitoring and control systems.
>
> MSHA has in fact authorized a flare for mine methane from a mine degasification system that was commissioned in August 2010 and is now operating at Solvay's underground trona mine near Green River, Wyoming.
>
> While there are currently no United States underground coal mines operating with flares, there are approximately 23 installed coal mine methane flares elsewhere in the world. Methane flaring at underground coal mines has been approved as a safe practice by national level mine safety oversight agencies in the United Kingdom and Australia. Flares can combust methane in air with fluctuating concentrations between 30 to 100 percent by volume. Portable flares are also commercially available, to provide flexibility to move to different wells. It is EPA's understanding that Solvay now intends to utilize the gas for productive use in their processing plant. Trona mines have similar characteristics to underground coal mines in terms of their methane gas production and degasification technologies, and the experience at the Solvay trona mine should be applicable to underground coal mine operations.

EPA July 2012 Comment Letter (Exh. 30) at 7 (citations omitted).

Given the mountain of evidence showing flaring to be both practical and effective, the FEIS should have analyzed a flaring alternative in detail because such an alternative would allow MCC to produce the coal within and adjacent to the Lease Modifications, thereby fulfilling the project's purpose and need, while reducing the damaging impacts of methane pollution.

But the Forest Service failed to provide <u>any reason at all</u> for failing to consider a flaring alternative. It simply ignored EPA's and Appellants request that such an alternative be considered. It provided no reason for its failure to do so. While the FEIS "considered but eliminate from detailed study" two alternatives concerning methane pollution control – (1) "requiring MCC to use MDW ventilation air methane," and (2) "requiring MCC to purchase

…carbon credits or do off-set mitigations" – neither of these eliminated alternatives involves flaring. FEIS at 37-38. The FEIS's failure to even address the alternative of methane flaring cuts "the heart" out of the NEPA process. 40 C.F.R. § 1502.14; All Indian Pueblo Council, 975 F.2d at 1444.

Rather than address the flaring option as an alternative, as required by NEPA, the Forest Service has chosen to consider the giving MCC the option of flaring as a mitigation measure. FEIS at 68-69. There, the Forest Service downplays the feasibility of flaring. But this "analysis" also fails to provide the necessary justification required by NEPA for failing to fully analyze a reasonable alternative of mandating that MCC flare methane. Indeed, the FEIS does not address at all – or explain why it does not address – the option of requiring flaring, even as a mitigation measure. This failure to take the required "hard look" at the impacts of a potential flaring alternative , even in the guise of a mitigation measure, violates NEPA.

First, the FEIS's discussion of flaring as a mitigation measure fails to disclose flaring's environmental benefits. For example, EPA told the Forest Service that the FEIS should "disclos[e] the potential health and safety benefits attributable to using a flare to destroy VOCs and hazardous air pollutants (HAPs)."[101] The FEIS contains no discussion of such benefits, nor does it explain why it does not.

Second, as with its discussion of VAM, the Forest Service pleads ignorance as to whether an effective flaring system could be designed. FEIS at 68 ("The probability of needing to provide supplemental fuel, or allow for the bypass of the flare is not known at this time, and therefore the portable flare mitigation effectiveness is uncertain. It is unlikely that supplemental fuel would be supplied to a portable flare located at an individual MDW, given the cost and

[101] EPA July 2012 Comment Letter (Exh. 30) at 7.

additional safety considerations that would need to be realized."). Once again, the Forest Service ignores its duty to explore options and track down information, not simply to rely on its own ignorance of a particular topic to dismiss an alternative. Numerous coal mines in the UK, Australia, and elsewhere safely and cost-effectively use flares to destroy coal mine methane. The Forest Service could have contacted these mines so that decisionmakers and the public could understand the potential need for supplemental fuel and cost issues. The Forest Service's failure to obtain this necessary information demonstrates that the agency failed to take the "hard look" NEPA requires.

Third, the FEIS alleges that MSHA's approval of flaring at a working trona mine a few hours drive from the West Elk Mine is somehow not relevant to whether MSHA would approve flaring at a working coal mine. FEIS at 68-69. The FEIS also downplays the role of flares world-wide, characterizing this pollution control practice as "in limited use in other countries." FEIS at 68. These characterizations are deceptive to say the least. EPA published a conceptual design for a flare more than a decade ago; flaring is in common practice in working coal mines and in other industries world-wide; and MSHA has invited all comers to propose a flare at a working mine. The record before the Forest Service conclusively demonstrates that flares are a practical, reasonable, and safe way to reduce methane pollution.

In sum, methane flaring is a reasonable, practical, proven, effective, and feasible alternative to reduce methane pollution that would allow for the accomplishment of the Lease Modifications' purpose and need. The FEIS's abject failure to consider a methane flaring alternative, and its improper analysis of flaring as a mitigation measure, violates NEPA. See, e.g., Davis, 302 F.3d at 1122 (agency cannot reject an alternative as unreasonable or infeasible with little or no documents in the record supporting its conclusion); Wilderness Soc'y, 524 F.

Supp. 2d at 1311-12 (overturning agency when no evidence in the record supported the agency's conclusion that an alternative was infeasible).

F. The Forest Service Fails To Sufficiently Analyze Capture And Use Of Vented Methane As A Reasonable Alternative.

The FEIS fails to adequately analyze an alternative that would require MCC to capture methane or use the methane for power generation.

Such alternatives are reasonable. BLM has previously acknowledged the agency's need and duty to consider such alternatives during preparation of an EA for another BLM coal lease in Colorado. A BLM staffer considering the nearby Elk Creek East lease by application stated:

> Clearly, there are very real limitations to the applicability of CMM [coal mine methane] projects. However, they have been successfully demonstrated in many places and we need to fully and honestly explore the possibilities before we claim we can not require or even allow them ....[102]

Given BLM's admission that coal mine methane pollution mitigation alternatives "have been successfully demonstrated in many places," the Forest Service should have "fully and honestly explore[d]" any such alternative possibilities in any subsequently prepared NEPA document. Indeed for this project, BLM NEPA staff recommended that the Forest Service consider a "Capture Alternative," a recommendation that the Forest Service apparently declined to accept.[103]

The West Elk Mine could make use of methane as alternatives to methane venting in a number of ways. For example, a 2007 EPA presentation documents numerous methods for preventing methane waste, including 10 capture and utilization projects at active mines in the

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[102] Email of A. Worstell, BLM to B. Sharrow, BLM (May 7, 2009 2:11 PM), attached as Exh. 65A (emphasis added).

[103] See email of Angela Glenn, BLM to D. Nolte, MCC (June 20, 2011 7:30 AM), attached as Exh. 65B.

United States that involve natural gas pipeline injection, mine air heating, and coal drying.[104]

Reasonable alternatives that the FEIS should have addressed include:

- Capture and sale of methane. Methane released from ventilation wells could be pressurized and injected into a commercial pipeline for sale.

- Liquefied natural gas. In addition, captured methane could be essentially frozen and turned into liquefied natural gas ("LNG") for transportation and sale to market in Denver.[105] Such a mitigation measure has been proposed to address methane venting at the West Elk Mine, and is being pursued in China.[106]

- Capture and use of methane for on-site electric generation. Mountain Coal Company could capture methane and combust it in engines on-site. This electricity could be used by the mine or sold to the grid. The reasonableness of such an approach is demonstrated by the fact that the mine directly across Highway 133 from the West Elk Mine – the Oxbow's Elk Creek Mine – has won approval from DRMS to gather methane, combust it on site, and sell the electricity generated to a utility, and has found financing from Aspen Skiing Co. to construct the project.[107]

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[104] See P. Franklin, US EPA Coalbed Methane Outreach Program, "Coal Mine Methane Recovery & Utilization in the United States" (Sept. 25, 2007), at 8-11, available at http://www.epa.gov/cmop/docs/cmm_conference_sep07/franklin_cmop_st_louis_sept2007.pdf (last viewed Sep. 23, 2012), attached as Exh. 66. Additional documentation of methane utilization projects is available in the EPA Coalbed Methane Outreach Program Technical Options Series, the Coalbed Methane Outreach Program's website, www.epa.gov/coalbed/resources/technical_options.html (last viewed Sep. 23, 2012).

[105] See U.S. Department of Energy, Project Fact Sheet http://fossil.energy.gov/fred/factsheet.jsp?doc=2252&projtitle=LNG%20from%20Coal%20Mine%20Methane%20for%20Industrial%20and%20Transportation%20Applications (last viewed May 20, 2010) (describing Department of Energy support for coal mine methane to LNG project), attached as Exh. 67; U.S Department of Energy, Liquefaction of Coal Mine Methane to produce LNG for Industrial and Transportation Applications, http://www.netl.doe.gov/technologies/oil-gas/NaturalGas/Projects_n/TDS/LNG/LNG_40978CoalMineMethane.html (last viewed Sep. 23, 2012), attached as Exh. 68.

[106] See U.S. EPA, The U.S. Government's Methane to Markets Partnership Accomplishments (Oct. 2009) at 17, attached as Exh. 69 ("A recent EPA-sponsored feasibility study is helping operators at six mines in the Chongquing Municipality of China to purify and liquefy medium-concentration CMM [coal mine methane] into LNG").

[107] See letter of J. Kiger (Oct. 14, 2011) (Exh. 61) (stating that "North Fork Energy LLC has determined the economic viability of constructing and operating a facility to utilize mine methane from Oxbow's underground mine methane collection system" and seeking agency approval for the same); letter of J. Kiger (Mar. 15, 2012) (Exh. 62) (discussing DRMS approval);

The FEIS's dismissal of such alternatives is without support.

First, the FEIS concludes that capturing methane for delivery to market will have "prohibitive" costs, based on the 2009 MCC Report.[108] As noted above, the FEIS's economic explanations ignore the fact that independent economic studies – previously submitted to, but never acknowledged by or responded to by the Forest Service – have debunked the 2009 MCC Report and shown that several capture and use options are economically feasible at West Elk.[109] Further, if the Forest Service will consider an alternative (Alternative 2) that the FEIS concludes may be "prohibitively costly" and "may be limited by … expense," it is arbitrary and capricious for the Forest Service to dismiss methane capture and use alternatives for which it has reached the same conclusion.[110] Oxbow, the mine across the road from the West Elk Mine, has won approval from state regulators and found financial support to break ground on a coal mine methane-to-energy project, further contradicting the FEIS's analysis.

Second, the FEIS asserts that collecting methane would "produce additional impacts across multiple resource areas including air resources and roadless areas."[111] Here, the FEIS

S. Condon, Aspen Skiing Co. goes big in its effort to offset carbon, Aspen Times (June 26, 2012) (noting Aspen Ski Co. has signed a contract to build and benefit from the Oxbow coal mine methane power facility, and that the project is "replicable"), available at http://www.aspentimes.com/article/20120626/NEWS/120629901 (last viewed Sep. 23, 2012), attached as Exh. 70.

[108] FEIS at 37-38 ("the cost of treatment of the gas, the cost of gas compression, and the distance to access available existing pipeline systems were prohibitive for delivery of gas as a saleable product.")

[109] See Exh. 31 (Power 2010 report); Exh. 32 (Power Dec. 2011 report). See also supra at 51-52.

[110] FEIS at 34, 35.

[111] FEIS at 38. See also id. (concluding that methane capture would "likely include more miles of road construction connecting to a capture facility … and pipeline construction (even though pipelines may occur near or in roads) and surface disturbance than would" the proposed action alternatives).

predetermines the analysis of the trade-offs – the unknown potential for surface impacts against more jobs, more revenue for the United States and the State of Colorado, and a potentially significant reduction in carbon pollution, all of which could follow from construction of methane capture facilities – without performing the analysis NEPA requires. This approach stands NEPA on its head, presuming a conclusion without taking a hard look at the alternative and its impacts.

Third, the FEIS fails to acknowledge or address at all an alternative that would liquefy captured methane and transport it for sale to market, despite the fact that economic expert Dr. Thomas Power concluded that such a proposal could be economically viable.[112]

In addition, the FEIS's purported analysis of methane capture as a mitigation measure is equally flawed.[113] This analysis is based almost exclusively on the 2009 MCC Report which as, discussed above, has failings identified by experts that the Forest Service has never addressed.[114] As with the discussion of methane capture as an alternative, the Forest Service in its discussion of mitigation also fails to disclose the relative benefits and costs of capture alternatives, instead stating there are too many "unknowns" to address them.[115] Failing to account for the costs and benefits of a proposed alternative is not the "hard look" NEPA mandates. Davis v. Mineta, 302

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[112] See Exh. 31 (Power 2010 report).

[113] FEIS at 67.

[114] Id. (BLM assumes "potential methane capture for sale would occur in one of two ways analyzed in detail in the 2009 Economic Feasibility Report"); id. ("The evaluation in the 2009 Economic Feasibility Report provided sufficient detail to explore multiple scenarios for various configurations of equipment"); id. at 68 (discussing costs estimated in the MCC 2009 Report as a "hurdle" to making capture and sale of methane "economically viable").

[115] Id. at 67 ("It is currently unknown whether the geologic structure of the modification areas would have the potential for the level of methane release that would facilitate electrical generation. Additionally, it is unknown if there will be a future opportunity for sale of any energy generated." (emphasis added)); id. at 68 ("existing pipelines may have limited capacity for transporting additional gas supplies or operational pressures may require additional compression capacity to access existing pipelines" (emphasis added).)

F.3d 1104, 1120 (10th Cir. 2002) (setting aside NEPA document where the agency "rejected without a hard look" a reasonable alternative).

G. The Forest Service Fails To Analyze Carbon Offsets As A Reasonable Alternative To Reduce The Impacts Of The Lease's Methane Pollution.

Carbon offsets are a tested, feasible, and practical alternative to allowing the West Elk Mine to vent millions of cubic feet of methane into the atmosphere every day as a result of the Lease Modifications without mitigation or control, or with incomplete mitigation or control.

EPA has repeatedly urged land management agencies to assess carbon offsets in EAs and EISs as a way to reduce climate change impacts of agency actions. EPA has specifically noted that offsets are a reasonable alternative to lessen the impacts of coal mine methane emissions. In a 2007 letter concerning a proposal to permit MDWs at the West Elk Mine, EPA specifically rejected the Forest Service's assertion that a carbon offset alternative was not reasonable: "[I]t is reasonable to consider offset mitigation for the release of methane, as appropriate. Acquiring offsets to counter the greenhouse gas impacts of a particular project is something that thousands of organizations, including private corporations, are doing today."[116] EPA specifically recommended that the Forest Service's Lease Modifications EIS "acknowledge that revenues for carbon credits are available via several existing markets."[117] Similarly, EPA has recommended that a Forest Service NEPA analysis of a forest health project "discuss reasonable alternatives and/or potential means to mitigate or offset the GHG emissions from the action."[118] Numerous state agencies already use offsets to control GHG emissions.[119]

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[116] Letter of L. Svoboda (Aug. 7, 2007) (Exh. 55) at 7 (Aug. 7, 2007) (emphasis added).

[117] EPA July 2012 Comment Letter (Exh. 30) at 5 (identifying four U.S. carbon exchanges creating a market for carbon credits).

[118] Letter of L. Svoboda, EPA, to T. Malecek, USFS, at 8 (Oct. 27, 2010), attached as Exh. 71.

[119] See, e.g., Settlement Agreement, ConocoPhillips and California (Sept. 10, 2007) (California

As EPA noted, many entities exist that permit agencies and polluters to purchase carbon offsets that are third-party verified. For example, the Carbon Fund and the Climate Action Reserve both allow entities to purchase carbon "credits." In 2009, the total U.S. carbon offset market was worth $74 million, with 19.4 million metric tons of CO_2e in traded volume.[120]

The FEIS dismisses any analysis of the economic costs or the environmental benefits of requiring MCC to purchase carbon offsets by stating:

> [P]urchasing carbon credits is a voluntary financial investment that MCC may choose to entertain for business reasons. The federal agencies are not involved in any financial investment decisions that MCC makes as a corporation.

FEIS at 38. This excuse for failing to analyze or adopt offsets lacks a rational basis. Federal agencies are deeply involved in decisions that impact lease-holders investment decisions. Federal agencies require lease-holders to pay royalties, implement reclamation requirements, post bonds, conduct surveys, and any number of other mandates that require lease-holders to expend financial resources. BLM has required companies seeking to exploit oil and gas leases to fund numerous surveys for wildlife, cultural resources, and air quality.[121] Other agencies require those damaging wetlands to participate in wetlands mitigation banks.[122] The Forest Service has

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agency requiring offsets as a condition of approving a project), attached as Exh. 72; Minn. Stat. § 216H.03 subd. 4(b) (Minnesota law requiring offsets for certain new coal-fired power plants); Me. Rev. Stat. Ann. tit. 38, § 580-B(4)(c) (Maine law establishing greenhouse gas initiative that includes the use of carbon offsets).

[120] Point Carbon Research, US Offset Markets in 2010: The Road Not Yet Taken 1 (2010), attached as Exh. 73.

[121] See, e.g., BLM, West Tavaputs Record of Decision, Attachment 2 (2010), attached as Exh. 74 (requiring oil and gas operators to fund, among other things: a "Class II cultural resource inventory;" "a research project" to determine the impact of dust on ancient rock art; "[r]aptor next surveys;" and "ground trothing exercises" to determine the value of Mexican spotted owl habitat); BLM, Jonah Infill Drilling Project Record of Decision, Appendix A (2006) at A-4 ("The Operators will fund and participate in a joint industry/state/federal monitoring agreement to maintain and enhance air quality monitoring."), attached as Exh. 75.

[122] See EPA, Mitigation Banking Fact Sheet, available at

required mining companies to fund wildlife and law enforcement personnel, and measures to protect wildlife.[123]

An alternative that proposes that the Forest Service consent to MCC's proposed Lease Modifications while requiring MCC to purchase carbon offsets is consistent with the proposed action's purpose and need. MCC would be able to obtain the lease modifications and expand its operations in the exact same manner as it proposed. A carbon offset alternative would simply require MCC to purchase carbon credits from a reputable vendor. At the end of 2009, carbon offsets were priced from $2.80 to $5.20 per ton of CO_2e, which is a small fraction of the September 2012 coal spot price of $35.60 per ton of coal, and far less than the $55 per ton assumed in the FEIS.[124] Thus, MCC could sell the Lease Modification's 10.1 million tons of coal for between $360 million and $556 million, using the sale price assumptions in the FEIS), while it could completely offset the CO_2e emissions from methane venting caused by mining the Lease Modifications coal for about $11 million – or about 2%-3% of the sale price of the coal. Moreover, offsets do not present the Forest Service or MCC with an all-or-nothing scenario – the Forest Service could require MCC to offset less than 100% of the GHG emissions attributable to the Lease Modifications.

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http://www.epa.gov/owow/wetlands/facts/fact16.html (last viewed Sep. 23, 2012), attached as Exh. 76.

[123] Kootenai National Forest, Record of Decision, Rock Creek Project (June 2003) at 29 (measures required to mitigate for mine's potential impacts grizzly bears), excerpts attached at Exh. 77.

[124] See Point Carbon Research, US Offset Markets in 2010 (Exh. 73) at 9, Table 6; U.S. Energy Information Association, Coal News & Markets, assuming Uinta Basin coal of 11,700 BTU at $35.60/short ton, available at http://www.eia.gov/coal/news_markets/ (last viewed Sep. 23, 2012). The FEIS assumes the value of coal mined in the Lease Modifications will be $55 per ton, FEIS at 188, making the additional cost of carbon credits an even smaller percentage of the price of coal.

The FEIS also states that while "off-set (or off-site) mitigations may be possible, they have not been brought forward for consideration related to this leasing analysis." FEIS at 37. To the extent that the FEIS implies that the purchase of carbon credits or offsets was not suggested during prior comment periods, that implication is false, since Appellants suggested off-set and off-site mitigation in 2010.[125] Further, as noted above, a number of programs exist from which MCC could buy carbon credits, including a California cap and trade program, and including the Climate Action Reserve.[126] The Climate Action Reserves lists more than two dozen wholesale sellers of carbon credits, and one operating carbon exchange where a polluter like MCC could purchase credits to offset its emissions.[127] It is unclear why, if an exchange exists, commentators must suggest a specific project for MCC to purchase to offset its carbon pollution. Further, the Forest Service itself previously identified a number of potential offsets for this very mine in 2008.[128]

The FEIS's failure to properly analyze the reasonable alternative of carbon offsets violates NEPA's mandate that an agency study, develop, and describe all reasonable alternatives to the proposed action. See, e.g., Native Ecosystems Council v. U.S. Forest Serv., 428 F.3d 1233, 1245-47 (9th Cir. 2005). In addition, the FEIS violates NEPA's requirement that an agency provide a reasoned explanation why an alternative was eliminated from detailed analysis. See, e.g., id. at 1245-46; Wilderness Soc'y, 524 F. Supp. 2d at 1309.

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[125] See Conservation Scoping Letter (Exh. 42) at 93-95

[126] See supra at 72; see also http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm, (website for the California Air Resources Board's cap and trade program) (last viewed Sep. 23, 2012).

[127] See Climate Action Reserve website (Exh. 64).

[128] See E Seam FEIS (Exh. 19) at 61 (addressing tree planting, replacing incandescent lightbulbs with compact fluorescent bulbs, replacing SUVs with hybrids).

VIII. THE FEIS FAILS TO INCLUDE A REASONABLY COMPLETE DISCUSSION OF GREENHOUSE GAS MITIGATION MEASURES.

In addition to requiring agencies to consider reasonable alternatives to the proposed action, NEPA requires agencies to provide a detailed statement of "any adverse environmental effects which cannot be avoided should the proposal be implemented." 42 U.S.C. § 4332(2)(C)(ii). For these unavoidable impacts, an agency must adequately propose and discuss appropriate mitigation measures in an EA or EIS. 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1505.2(c), 1508.25(b)(3). This discussion of mitigation measures is required "precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided." S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of Interior, 588 F.3d 718, 727 (9th Cir. 2009). A NEPA document "should include sufficient discussion and analysis to allow the public or a reviewing court to evaluate the adequacy of proposed mitigation measures." Diné Citizens, 747 F. Supp. 2d at 1258 & n.39. And if "all practicable means to avoid or minimize environmental harm from the alternative selected" have not been adopted, the agency's record of decision must explain "why they were not." 40 C.F.R. § 1505.2(c).

Mitigation must "be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated." City of Carmel-by-the-Sea v. U.S. Dep't of Transp., 123 F.3d 1142, 1154 (9th Cir. 1997) (quoting Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 353 (1989)); see also Colo. Envtl. Coal. v. Dombeck, 185 F.3d 1162, 1173 (10th Cir. 1999) (analysis of mitigation "must be reasonably complete"). A "perfunctory description" of mitigation measures, without supporting data analyzing their efficacy, is inadequate to satisfy NEPA's requirements that an agency take a "hard look" at mitigation. Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1380–81 (9th Cir. 1998). An agency's "broad generalizations and vague references to mitigation measures … do not constitute the detail as to

mitigation measures that would be undertaken, and their effectiveness that [an agency] is required to provide." Id. at 1381.

VAM combustion, methane flaring, carbon offsets, and capture and use of methane would all mitigate and reduce the Lease Modifications' GHG emissions and climate change impacts. Thus, these are all practicable mitigation measures that the Forest Service should have properly analyzed in the FEIS. In draft guidance, CEQ has singled out methane venting from coal mines as warranting a mitigation discussion under NEPA: "Examples of proposals for Federal agency action that may warrant a discussion of the GHG impacts of various alternatives, as well as possible measures to mitigate climate change impacts include ... authorization of a methane venting coal mine."[129]

As discussed above, the FEIS's analysis of VAM oxidation, methane flaring, carbon offsets, and methane capture and use was flawed, based on false assumptions, and/or characterized by misinterpretations and erroneous conclusions. Such an arbitrary and capricious analysis violates NEPA. Further, the Forest Service's failure to rationally justify why "practicable means to avoid or minimize environmental harm from the alternative selected" were not adopted also violates NEPA. See 40 C.F.R. § 1505.2(c).

IX. THE FOREST SERVICE CANNOT ADOPT ALTERNATIVE 3 BECAUSE THE COLORADO ROADLESS RULE WAS ADOPTED IN VIOLATION OF LAW.

The FEIS and ROD assume that Alternative 3 can be implemented once the Colorado Roadless Rule is finalized. See ROD at 3. However, while the Colorado Rule is final, it was

[129] CEQ Climate Change Guidance (Draft) at 3 (Exh. 25).

adopted in violation of law. The Forest Service's ability to implement Alternative 3 is thus subject to an injunction based on its reliance on an illegally promulgated rule.[130]

In at least three ways, the Forest Service has not taken a hard look at all of the reasonably foreseeable environmental impacts of the Colorado Roadless Rule. NEPA requires that federal agencies take a "hard look at [the] environmental consequences" of their proposed actions. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) (internal quotation omitted). "The purpose of the 'hard look' requirement is to ensure that the 'agency has adequately considered and disclosed the environmental impact of its actions and that its decision is not arbitrary or capricious.'" Colo. Envtl. Coal. v. Salazar, --- F.Supp.2d ---, 2012 WL 2370067, *11 (D. Colo. 2012) (quoting Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, 462 U.S. 87, 97 (1983)).

A. The Colorado Roadless Rule EIS Failed To Take A 'Hard Look' At Impacts To Water Resources.

The Forest Service failed to take the required "hard look" to impacts of the Colorado Roadless Rule on water resources, particularly wetlands and groundwater, because the Forest Service provides no baseline information or assessment of impacts regarding these resources. All alternatives could result in impacts to wetlands, but the Forest Service deemed it impossible to quantify those impacts for any alternative, abandoned any effort to describe impacts qualitatively, and rendered only relative comparisons among alternatives. See Final Environmental Impact Statement, Rulemaking for Colorado Roadless Areas 120 (May 2012) ("Colorado Rule FEIS"). The Forest Service also failed to take a hard look at potentially affected groundwater resources, omitting baseline information and disclosure of adverse effects.

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[130] The Lease Modifications FEIS admits that "[i]f the Colorado Roadless Rule is enjoined by a court of law, then the responsible official would not be able to select Alternative 3." FEIS at 585.

Forest Service position that amassing this level of water resource data is inappropriate for the scale of this FEIS, id. at H-50, is contrary to the importance the agency otherwise places on the value of roadless areas to protecting and conserving water resources. See id. ("The conservation of Colorado's water resources for beneficial uses under the Clean Water Act is integral to the purpose and need for this rule.").

Furthermore, the Colorado Rule FEIS's cursory treatment of water resources demonstrates that the Forest Service did not take a hard look at potential environmental consequences because it improperly minimized negative adverse effects. Rather than examine the data in order to support a finding that impacts to water resources will be minimal or minimized, the Forest Service simply relied on future compliance a range of federal and state laws and permits. See Colorado Rule FEIS at 120 (invoking Exec. Order 11990, Protection of Wetlands, and Clean Water Act permitting requirements to avoid, minimize, or mitigate environmental impacts to wetlands); id. at 124 (same); id. at 119 (invoking Colorado Oil and Gas Commission permits and state regulation of the disposal of produced water to protect water quality); id. at 120 (relying on the Federal Land Policy and Management Act to protect fish and wildlife habitat and other environmental values). This the agency cannot do. See S. Fork Band Council of W. Shoshone v. U.S. Dep't of the Interior, 588 F.3d 718, 726 (9th Cir. 2009) ("[a] non-NEPA document -- let alone one prepared and adopted by a state government -- cannot satisfy a federal agency's obligations under NEPA."). "[T]he mere presence of these regulations cannot make up for [the agency's] failure to demonstrate that it 'examined relevant data' supporting a finding that impacts … will be minimal." New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 715 (10th Cir. 2009).

B. The Colorado Roadless Rule EIS Failed To Take A 'Hard Look' At Impacts Outside Of Roadless Areas.

The Forest Service unreasonably failed to examine additional environmental impacts that occur beyond its analysis area, including municipal water supply systems and at-risk communities. "An agency must provide support for its choice of analysis area and must show that it considered the relevant factors." Native Ecosystems Council v. Dombeck, 304 F.3d 886, 902 (9th Cir. 2002). Based on the broad geographic scope of the project, the Forest Service did not meet its obligation to supply "articulable reasons" for constraining its analysis to roadless areas and excluding areas adjacent to roadless areas but potentially impacted by activities authorized by the proposed action. Alliance for the Wild Rockies v. Bradford, 720 F.Supp.2d 1193, 1220 (D.Mont. 2010). The Forest Service does not identify or locate municipal water supply systems or at-risk communities, but uses proxies – Source Water Assessment Areas ("SWAAs") and housing densities, Colorado Rule FEIS at 116, 120, 155. The Forest Service's silence as to whether these proxies are reasonable dooms the analysis. See Alliance for the Wild Rockies, 720 F. Supp. 2d at 1220 (the agency choice "may well be a proper proxy for the project's action area, but one cannot tell this from the administrative record").

Assuming the proxies are reasonable, the Forest Service has not taken the hard look that would support assertions of beneficial impacts of the proposed action for SWAAs or at-risk communities. The Forest Service assumes that the inability to conduct vegetation treatments could result in an increase in fire suppression costs, property loss, and other economic impacts. Colorado Rule FEIS at 164. When this assumption is not borne out by the numbers, the Forest Service's conclusions disregard the numbers. For example, the Forest Plans Alternative should always result in the most protection because it offers the greatest access to roadless areas. See Colorado Rule FEIS at 339 ("greatest opportunities for hazard fuel reduction for at-risk

communities"), id. at 123 ("slightly reduced potential for high severity fire near communities and water supply systems"). However, the Forest Service projects that the proposed action would have higher acreages with "some potential for treatment" and with "high potential for treatment." Id. at 331.

C. The Colorado Roadless Rule EIS Failed To Take A 'Hard Look' At Impacts Water Conveyance Structures.

The Forest Service did not evaluate the environmental effects of the proposed action's exceptions to road and linear construction prohibitions for water conveyance structures. The stated need to permit the construction and maintenance of water conveyance structures, Colorado Rule FEIS at 5, would allow linear construction zones in all roadless areas, road construction in non-upper tier roadless areas, and road construction in upper tier CRAs in case of emergency. Id. at 26-27, H-9. Without data on existing or future water conveyance structures or their underlying existing or pending water rights, the Forest Service is unable to take a hard look at the affected environment or any environmental consequences. Impacts from water conveyance structures constructed under the applicable road-building or LCZ-constructing exceptions could be significant. For example, the proposed action allows the construction or expansion of reservoirs in all roadless areas. Id. at H-46 (allowing activity through use of an LCZ or road construction).

D. The Colorado Roadless Rule EIS Failed To Take A 'Hard Look' At The Rule's Impacts On Greenhouse Gas Emissions.

The Forest Service has failed to address direct, indirect, and cumulative effects of the proposed action, by disclosing reasonably foreseeable greenhouse gas ("GHG") emissions of the proposed action and evaluating the impacts of those emissions on climate change. See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1194 (9th Cir. 2008) (establishing that an agency has taken a hard look at environmental effects of its action

when it has provided "a reasonably thorough discussion of the significant aspects of the probable environmental consequences") (internal quotations omitted); Mayo Found. v. Surface Transp. Bd., 472 F.3d 545, 556 (8th Cir. 2006) (upholding EIS that adequately considered "reasonably foreseeable significant adverse effects" on the environment). The Forest Service acknowledges the types and sources of GHG emissions caused by each of the alternatives. They include carbon dioxide, nitrogen oxides, and methane. Colorado Rule FEIS at 128-29, 130. The Forest Service does not analyze emissions data from existing activities, see WildEarth Guardians v. U.S. Forest Serv., 828 F.Supp.2d 1223, 1231 (D. Colo. 2011), and does not argue that the scale of the proposed action is so small that an effects analysis would meaningless, see Hapner v. Tidwell, 621 F.3d 1239, 1245 (9th Cir. 2010). Instead, the Forest Service asserts that the "nature of the proposed Colorado Roadless Rule is programmatic and the extent of greenhouse gas emission is not quantifiable at this stage." Colorado Rule FEIS at 130.

The Forest Service's explanation supporting its assertions in the FEIS that GHG emissions caused by the action are impossible or too speculative to quantify is arbitrary and capricious. Citizens' Comm. to Save Our Canyons v. U.S. Forest Serv., 297 F.3d 1012, 1035 (10th Cir. 2002) (explaining that agency's reasoned basis for decision must be clearly disclosed in and supported by the record). Contrary to being uncertain, the Forest Service has the means and the data to project a whole host of reasonably foreseeable future activities under the proposed action, including those relating to projected future coal mining. See Colorado Rule FEIS at 57, 59, 61, 71, 72, 74-77, 87 (projecting acres of tree removal, miles of road construction, number of leasing actions, number of well pads). With this information and additional assumptions, the Forest Service concluded energy development (including coal mining) was one of only two issues that it could analyze "quantitatively" in the economic

consequences section of the Colorado Rule FEIS, id. at 304, and projected "direct, indirect, and induced effects" for production value, employment, and labor income. Id. at 315, 316. One of the very purposes of the Colorado Roadless Rule was to facilitate coal mining in an area notorious for its gassy coal seams, far gassier than surface coal mines in the Powder River Basin. The Colorado Rule FEIS's accounting for many of the alleged "benefits" of coal mining (e.g., production value, employment, and labor income) while refusing to project the costs in terms of massive GHG pollution, is arbitrary and capricious.

Even assuming that GHG emissions are speculative, the Forest Service failed to employ applicable regulations designed to assist the Forest Service address such unknowns. See Mayo Found. v. Surface Transp. Bd., 472 F.3d 545 (8th Cir. 2006) (citing 40 C.F.R. § 1502.22). Lastly, the Forest Service failed to acknowledge existing legal requirements to disclose GHG emissions[131], information that must be disclosed in an EIS. See 40 C.F.R. § 1508.27(b)(10) (measuring significance of environmental effects by whether the action may violate federal, state, or local environmental protection laws).

Given the numerous legal violations in the Colorado Rule FEIS, the Forest Service cannot implement the proposed Lease Modifications in reliance on that rule.

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[131] EPA has established mandatory reporting requirements for underground coal mines that emit more than 100,000 cubic feet of methane per day. See generally 40 C.F.R. Part 98; see 40 C.F.R. § 98.320 – § 98.328 (requirements for underground coal mines); Final Rule, Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56260 (Oct. 30, 2009). In addition, the State of Colorado has a state-wide goal of reducing emissions to 20% below its 2005 levels by 2020. See Executive Order D-004-08, Reducing Greenhouse Gas Emissions in Colorado (April 22, 2008); Governor Bill Ritter, Jr., Colorado Climate Action Plan: A Strategy to Address Global Warming 10 (2007), available at http://www.colorado.gov/governor/images/nee/CO_Climate_Action_Plan.pdf.

X. THE FOREST SERVICE HAS FAILED TO MAKE THE REQUIRED DETERMINATION THAT MOTORIZED ACCESS IS "NOT FEASIBLE," AND NEW RECORD EVIDENCE WOULD CONTRADICT SUCH A DETERMINATION.

The Colorado Roadless Rule prohibits road construction/reconstruction subject to several exceptions. The exception relevant to roads in the Sunset Roadless Area in the North Fork coal mining area states that "a road or temporary road may only be constructed …if the responsible official determines" that "a temporary road is needed" for coal exploration and/or coal-related surface activities …." 36 C.F.R. § 294.43(c)(1)(ix) (emphasis added). If the activity meets this exception, "the responsible official must determine: (i) Motorized access, without road construction is not feasible …." Id. § 294.43(c)(2)(i) (emphasis added). The determination of feasibility "must be made, through a site-specific analysis …." Colorado Roadless Rule FEIS at 28.

In the Record of Decision, the Acting Forest Supervisor concluded that "development of the lease modifications without roads … is not feasible at this time. Therefore, motorized access via roads is necessary." ROD at 17. This conclusion misstates the operative regulation, and gets the standard backwards. The question is not whether development of the lease modifications is "not feasible" without roads, as the ROD states, nor whether motorized access is "necessary," as the ROD concludes. Instead, the Colorado Roadless Rule requires the Forest Service to determine whether: (1) temporary roads are "needed" for coal mining purposes, and (2) "[m]otorized access without road construction is not feasible." 36 C.F.R. § 294.43(c)(2)(i). Because the Acting Forest Supervisor failed to determine that "motorized access without road construction is not feasible," her finding does not meet one of the exceptions to the Colorado Roadless Rule, and so no road construction can take place in the Sunset Roadless Area within the Lease Modifications.

Further, even if the ROD included the correct findings, new evidence in the record would contradict any Forest Service conclusion that the development of, or motorized access to, the Lease Modifications without road construction is not "feasible." Specifically, MCC's attorney has stated that MCC does not yet have the required information to determine whether the Lease Modifications can be developed without roads.

> The description of effects caused by Alternative 2 thus depends on the discovery of "a way to construct the pads and drill the wells without building roads." All information in MCC's and Ark's possession indicates that this is unlikely. Although MCC/Ark cannot know for certain until they conduct exploration in the lease modification area, our expectation of geologic conditions suggests that helicopter borne/off-road borne drill rigs cannot effectively drill the holes required to the depths needed in the type of ground conditions found in the lease modification area. If MCC/Ark's expectation proves correct, then coal development will not be feasible under the terms of the 2001 Roadless Rule.[132]

MCC's representative thus states clearly that MCC cannot and will not know whether it is "feasible" to access the Lease Modifications to build MDWs without roads unless and until the company better understands the area's geology, which the company can only do after it conducts exploration of the area. This is not to say that the Forest Service must simply defer to every statement of the project proponent about the need for roads in roadless areas. But the Forest Service's assertions that the Lease Modifications cannot be mined economically if no roads are built, see ROD at 9-10, are contradicted by the project proponent's statements that it "cannot know for certain" the feasibility of accessing the area without roads until it has more information.[133] If the project proponent "cannot know for certain" whether access without roads

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[132] Letter of M. Drysdale, Dorsey & Whitney to Forest Supervisor, GMUG National Forest, U.S. Forest Service (July 9, 2012) at 4 (emphasis added), attached as Exh. 78; see also id. at 1 (Mr. Drysdale's comments submitted "[o]n behalf of" MCC). The quoted paragraph is also reprinted in the FEIS at 549.

[133] MCC's attorney's statement that MCC "cannot know for certain" whether the Lease Modification can be exploited for coal without roads is in line with the FEIS's decision to

is feasible or not, the Forest Service cannot find that "motorized access without road construction is not feasible."[134]

XI. THE FOREST SERVICE VIOLATES NEPA BY FAILING TO PROPERLY ANALYZE THE 2001 ROADLESS RULE ALTERNATIVE.

The Final EIS, like the Draft, takes a schizophrenic analytical approach to Alternative 2, the 2001 Roadless Rule alternative. Under this alternative, the Forest Service assumes no roads could be built within the Lease Modifications. FEIS at 33 ("road construction would not be allowed in the modification areas"). The Forest Service then analyzes the potential environmental impacts of MDW pads being constructed by equipment (including drill rigs and backhoes) that travel overland without roads. FEIS at 35 ("mining without construction of temporary roads may be physically possible"; "a Reasonably Foreseeable Development Scenario has been developed … to try to address surface impacts subsequent to leasing and permitting for this situation."); 40-45 (summarizing impact of all alternatives, and assuming impacts from cross-country vehicle travel). The FEIS assumes that just as much coal could be mined and just as much road and MDW pad construction would take place under this alternative as under the Colorado Roadless Rule alternative. Id. at 40-45. The FEIS generally dismisses the potential use of helicopters to drill MDWs as "prohibitively costly," FEIS at 33-34, although "from a regulatory standpoint" MDWs could be constructed in this way. FEIS at 190.Final

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analyze the potential impacts of coal mining and MDW construction under Alternative 2. See infra at 85-86.

[134] There is information in the record from MCC that the use of large helicopters for heavy drill rigs would be costly. See HCCA Comment Letter (Exh. 5) at 5-8. MCC's most recently submitted comments, however, make clear that with respect to the MDWs proposed for these Lease Modifications, MCC has not yet determined whether it is feasible or not to use smaller helicopters or off-road vehicles to move smaller drill rigs that may be effective in creating methane vents in the geology present there.

While the FEIS analyzes surface impacts from moving equipment in the Lease Modifications area without roads under Alternative 2, the FEIS also asserts that implementing "Alternative 2 may be physically possible but it is infeasible today …" FEIS at 182. See also id. at 582 (FEIS acknowledges "that development is remote and speculative under … the provisions of the 2001 Roadless Rule [that is, Alternative 2] based on MCC's experience").

The FEIS seems to want to have it both ways. But only one outcome will occur. Either the 2001 Roadless Rule would make it such that zero coal would be removed from the Lease Modifications area or the coal "could" be mined absent roads, as the FEIS asserts.

Absent economic analyses comparing the costs of roads, the costs and practicality of moving vehicles overland, and the costs of helicopters – none of which we could not locate in the record – against the likely profit MCC hopes to realize at a given price for coal, it is very difficult to determine whether coal could be mined in the Lease Modifications absent road construction. Indeed, as noted above, a representative of MCC concluded more information is necessary to make such a determination. Through the FEIS, the Forest Service should have properly and honestly disclosed whether mining the Lease Modifications under the 2001 Roadless Rule could reasonably occur, taking into consideration and fully disclosing the economic and technical basis for its analysis. However, the FEIS failed to take the hard look at this alternative that NEPA required..

XII. THE FOREST SERVICE FAILED TO ANALYZE A REASONABLE ALTERNATIVE THAT WOULD PROHIBIT SURFACE OCCUPANCY WITHIN THE SUNSET ROADLESS AREA'S WILDERNESS CAPABLE LANDS.

One way to balance MCC's desire for coal against the potential harm to roadless lands from a network of well pads and roads would be to add "no surface occupancy" ("NSO") stipulations: (1) to Lease Modification COC-67232; or (2) to either of the Lease Modifications where the lease modifications overlay lands found to be "wilderness capable" in the GMUG

National Forest's 2005 inventory. The stipulations could make clear that they do not seek to preclude surface impacts from subsidence, only from roads, well pads, and similar surface developments related to the construction, use, and maintenance of methane drainage wells. As a practical matter, such alternatives might have impacts very similar to the alternative of only approving lease modification COC-1362, which the FEIS analyzed as Alternative 4. .

The Final EIS responds to these suggested alternatives as follows:

> There are no lands within the project area which have been recommended or available for Wilderness designation, or are now Wilderness. Alternative 4 was developed responsive to concern.

FEIS at 573-74. This response lacks merit for several reasons. There is no dispute that in 2005, the Forest Service concluded that a 3,000 acre expanse of the Sunset Roadless Area adjacent to the West Elk Wilderness was "capable" of being managed for its wilderness character. See FEIS at 171 (map) & 479-480 (GMUG National Forest's 2005 roadless inventory). The fact that the current Forest Plan did not designate the area as recommended wilderness does not prevent the agency from considering, as one alternative, protecting those multiple use values from the damage and destruction that road and MDW pad construction will cause.

Further, placing a NSO stipulation on those lands found wilderness capable in 2005 would permit surface occupancy on roughly half of Lease Modification COC-67232, likely increasing the amount of coal that could be removed in comparison to Alternative 4.[135]

In addition, while Alternative 4 may protect some of the same lands from road and MDW pad construction, it is also possible that permitting MCC to lease Lease Modification COC-67232 but not build MDWs on that lease may also increase amount of coal MCC can mine

[135] See FEIS at 171 (map) and 167 ("roughly half of this proposed coal lease modification area [COC-67232] was identified as 'capable' in the wilderness screening process").

relative to Alternative 4. This is so because it could permit MCC to mine right up to the eastern boundary of COC-1362 without concern that subsidence would occur east of that boundary.

The Forest Service's failure to address these reasonable alternatives, representing potential middle ground areas between Alternative 4 and Alternative 3, violates NEPA.

XIII. THE FINAL EIS FAILS TO TAKE A HARD LOOK AT THE IMPACTS TO THE SUNSET ROADLESS AREA.

The FEIS dismisses the impacts of the proposed lease modifications on the Sunset Roadless Area, a 5,880-acre area where the agency has repeatedly documented roadless characteristics, nearly 3,000 acres of which the Forest Service found "capable" of wilderness protection in 2005.[136] The FEIS's failure to accurately disclose the impacts to the Sunset Roadless Area violates NEPA.

A. NEPA Requires That The Forest Service "Consider Every Significant Aspect of the Environmental Impact" Of The Proposed Lease Modifications.

The National Environmental Policy Act, 42 U.S.C. § 4321 et seq. ("NEPA"), "places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action," an inquiry described by the federal courts as a "hard look." Wyoming v. United States Dep't of Agric., 661 F.3d 1209, 1236-37 (10th Cir. 2011) (upholding the Forest Service's NEPA analysis for the 2001 Roadless Area Conservation Rule) (internal quotation marks and citation omitted). NEPA does not require the federal agency to make substantive decisions; rather it "prohibits uninformed – rather than unwise – agency action." New Mexico ex rel. Richardson v. BLM, 565 F.3d 683, 704 (10th Cir. 2009). Courts must "ensure" that, in an EA or EIS, "the agency has adequately considered and disclosed the environmental impact of its

[136] We use the term "Sunset Roadless Area" to refer to that area found to be roadless and identified in the GMUG National Forest's 2005 inventory. This is coextensive with the area identified in the FEIS as the "Sunset CRA."

actions and that its decision is not arbitrary and capricious." Citizens' Comm. to Save Our Canyons v. Krueger, 513 F.3d 1169, 1178 (10th Cir. 2008) (internal quotations and citations omitted). Further,

> [a]n agency's decision is arbitrary and capricious if the agency (1) entirely failed to consider an important aspect of the problem, (2) offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise, (3) failed to base its decision on consideration of the relevant factors, or (4) made a clear error of judgment.

New Mexico ex rel. Richardson, 565 F.3d at 704 (internal quotations and citations omitted); see also Wyoming, 661 F.3d at 1227.

B. In General, Road Construction In Roadless Areas Has Significant, Damaging Impacts To The Roadless And Potential Wilderness Character Of The Land.

Under well-established law, the Forest Service must generally prepare an environmental impact statement ("EIS") pursuant to NEPA for actions that impact roadless areas because such actions are "an 'irreversible and irretrievable' commitment of resources that 'could have serious environmental consequences." Sierra Club, Inc. v. Austin, 82 Fed. Appx. 570, 573 (9th Cir. 2003) (observing that "[i]t is well established in this circuit that logging in an unroaded area is an 'irreversible and irretrievable' commitment of resources that 'could have serious environmental consequences'") (quoting Smith v. U.S. Forest Serv., 33 F.3d 1072, 1078 (9th Cir. 1994)); see also Nat'l Audubon Soc'y v. U.S. Forest Serv., 46 F.3d 1437, 1448 (9th Cir. 1993) ("the decision to harvest timber on a previously undeveloped tract of land is 'an irreversible and irretrievable decision' which could have 'serious environmental consequences.'").[137]

[137] While the courts have refrained from creating a per se rule that actions in roadless areas require an EIS, see, e.g., Smith, 33 F.3d at 1079, NEPA requires an EIS for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C).

Not only must the Forest Service analyze the impact of the proposed action on the independent attributes of roadless areas, such as "water resources, soils, wildlife habitat, and recreation opportunities," but it must also analyze the impact on the lands' "potential for designation as wilderness." See Lands Council v. Martin, 529 F.3d 1219, 1230 (9th Cir. 2008) (internal quotations and citations omitted); see generally Draft Roadless Rule, 65 Fed. Reg. 30276, 30281-83 (May 10, 2000) (identifying the attributes of roadless areas). The Forest Service must, at the very least, "acknowledge the existence of the 5,000 acre roadless area" that would be capable of a wilderness designation. Smith, 33 F.3d at 1079. Furthermore, it is not enough for the Forest Service to limit its analysis to the direct impacts of the proposed action, i.e. the number of acres that will be consumed by roads. NEPA requires that the agency examine the impact that disruption of the roadless values in the project location will have on the entire roadless area. See id. at 1078 (holding that the Forest Service must analyze the impacts to lands in addition to the lands that will be logged because they "will no longer be part of a 5,000 acre roadless expanse"); Sierra Club, Inc., 82 Fed. Appx. at 573 (finding an EIS deficient because it "did not reference the impact of logging on unroaded areas contiguous to IRAs [inventoried roadless areas]").

In line with this caselaw, the Forest Service Handbook and the Forest Service's NEPA implementing regulations require that "[p]roposals that would substantially alter the undeveloped character of an inventoried roadless area or potential wilderness area" require an EIS. FSH § 1909.15, 21.2 (effective Sept. 14, 2011); see also, 36 C.F.R. § 220.5(a)(2) (EIS required where "[c]onstructing roads and harvesting timber in an inventoried roadless area where the proposed road and harvest units impact a substantial part of the inventoried roadless area.").

Two additional factors confirm that Forest Service road construction and well-pad clearing activities in roadless areas are likely to result in significant impacts that require broader disclosure of impacts to roadless values and character. First, the 2001 Roadless Area Conservation Rule generally prohibits road construction — including temporary roads — in inventoried roadless areas. The 2001 Roadless Rule has been the subject of considerable litigation over the last decade. In promulgating the 2001 Roadless Area Conservation Rule and defending the rule in courtrooms throughout the country for more than ten years, the Forest Service has made its view clear, based on the evidence, that a near total ban on road construction in inventoried roadless areas is essential to protect and preserve their unique characteristics. See Wyoming, 661 F.3d at 1245-46.[138]

Second, the Forest Service has extensive experience with forest roads, and the agency's own materials provide a well-supported catalogue of adverse impacts of road construction in roadless areas. The agency has previously recognized that roads in IRAs:

> (a) create "the greatest likelihood of altering landscapes," "[o]ften cause substantial landscape fragmentation and adverse changes to native plant and animal communities," and can "result in immediate, irretrievable, and long-term loss of roadless characteristics;" (b) are "the primary human-caused source of soil and water disturbances in forested environments;" (c) "contribute more sediment to streams than any other land management activity;" (d) are "major contributors to forest fragmentation" and the associated disturbance of important wildlife habitat;" (e) "convert[ ] large areas of habitat into nonhabitat" and "negative[ly] [a]ffect[ ] . . . both terrestrial and aquatic ecosystems;" (f) create "avenues for invasion by nonnative invasive plant species that frequently compete with or displace native vegetation;" and (g) adversely impact threatened and endangered

[138] The Colorado Roadless Rule similarly recognizes the critical value of roadless areas and the damage road building can cause. See 77 Fed. Reg. 39,576 (July 3, 2012) ("A need exists to provide for the conservation and management of roadless area characteristics." "The [Agriculture] Department, the Forest Service, and the State of Colorado recognize that timber cutting, sale, or removal and road construction/reconstruction have the greatest likelihood of altering and fragmenting landscapes, resulting in immediate, long-term loss of roadless area characteristics. Therefore, there is a need to generally prohibit these activities in roadless areas.")

> wildlife species, through habitat loss, loss of connectivity with other habitats, displacement, and access for poaching and illegal collection.

Id. at 1246 (quoting Forest Service, Final EIS, Forest Service Roadless Area Conservation Implementation, Proposal to Protect Roadless Areas, 1-16, 3-44, 3-131 – 133, 3-149 – 150, 3-165, 3-174, 3-181 – 182 (Nov. 2000)). Cleared pads for methane drainage wells ("MDWs"), 48 of which are likely to be constructed in the Lease Modification areas, will have similar impacts, if not greater impacts, than road construction.

C. The FEIS's Analysis Of Impacts To The Roadless Character Of The Sunset Roadless Area Fails To Take The 'Hard Look' NEPA Mandates.

While the FEIS admits that all of the action alternatives would damage roadless character, the FEIS concludes that impacts to the Sunset Roadless Area will not be significant because they would be "[s]hort-term," would "likely be temporary," and would take place in an area where "[r]oad construction for mineral exploration and extraction has led to a fragmented landscape." FEIS at 44, 181, 182.

The agency's analysis of the Lease Modifications' impacts on roadless characteristics is deficient because: (1) the Forest Service often mixes up the spatial scale of its impacts, discussing the broader West Elk roadless area rather than the Sunset Roadless Area; (2) the Forest Service ignores its own 2005 on-the-ground inventory concluding that the area possessed uncompromised roadless (and, for much of the area at stake in this decision, wilderness) character, and fails to disclose the existence of and impacts to wilderness capable lands; and (3) the impacts analysis that the Forest Service did include in the FEIS reaches conclusions about impacts — i.e., that any impacts will be "temporary"— that are unsupported or contradicted by other FEIS statements. For these reasons, the FEIS's analysis of the impacts of the Lease Modifications on the Sunset Roadless Area is arbitrary and capricious and violates NEPA's

obligation that the agency "consider every significant aspect of the environmental impact of a proposed action."

1. The FEIS Fails To Focus Its Analysis At The Appropriate Spatial Scale To Recognize Impacts To Roadless Characteristics.

The FEIS's analysis of impacts to the Sunset Roadless Area's roadless character is confusing and misleading because the agency frames its inquiry at varying spatial scales. Although the Forest Service stated in its November 2011 EA that "[f]or roadless character, the impact and cumulative area is the lease modifications area," the FEIS begins its analysis by dismissing any possible impacts to roadless characteristics as irrelevant because "[m]uch of the West Elk Roadless Area (current Forest Plan designation) has compromised character due to management activities before and after 1979 including roads, ditches, reservoirs, full-sized trails, etc." FEIS at 49; see also id. at 165 (making similar statement); id. at 181 ("Management projects in the Sunset CRA and West Elk IRA have been happening over time. Road construction for mineral exploration and extraction has led to a fragmented landscape. Some of this activity can be traced back to the 1940s." (emphasis added)). In fact, Forest Service staff preparing the FEIS stated, disparagingly, that "the roadless character [of the area] was considered crappy."[139] Yet, the Sunset Roadless Area is a "small subset" – 5,880 acres – of the West Elk IRA, see FEIS at 49, the entirety of which includes more than 90,000 acres.[140] Similarly, in addressing existing roadless character in the Lease Modifications area, the FEIS mixes together its analysis of the West Elk IRA and Sunset Roadless Area so that it is often difficult if not impossible to tell which area the FEIS is discussing. See FEIS at 165-66.

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[139] Email from Ryan Taylor, GMUG NF, to Niccole Mortensen, GMUG NF (March 31, 2011) (emphasis added), attached as Exh. 79.

[140] See E-Seam Final EIS (Exh. 19) at 128.

By relying on over-broad statements that roadless values are compromised somewhere in the much larger West Elk IRA, the FEIS glosses over the impacts to the roadless values of the specific 1,722 acres that will be mined under the proposed Lease Modifications and the 5,880-acre Sunset Roadless Area of which the Lease Modifications are a part. As a result, the agency violated NEPA's instruction that the agency take a "hard look" at the environmental impacts of its actions.

2. The Forest Service's Assertions That The Roadless Characteristics Of The Proposed Lease Modification Areas Are Compromised Is Contradicted By The Agency's Own Inventory Results.

The FEIS purports to demonstrate that the Sunset Roadless Area has been degraded, and thus, apparently, that further road construction will have little impact on the area. But the agency's own record contradicts such a conclusion.

For example, the FEIS asserts that "heavy equipment" was repeatedly used in the Sunset Roadless Area for livestock management "to clear fence lines and stock trails, as well as to build stockponds." FEIS at 172. Further, the FEIS alleges that "[n]umerous temporary roads associated with coal and oil/gas exploration have been pushed into the Sunset CRA since the 1940s. Atlantic Richfield (ARCO) drilled at least 13 coal and oil/gas exploration wells in the Sunset Roadless area beginning in the 1960s." Id. The FEIS further states that an "inventory evaluation process for the Colorado Roadless Rule reaffirmed these [prior] impacts to roadless characteristics" that allegedly compromised the West Elk roadless area. FEIS at 165.

But the Forest Service's assertions that the roadless characteristics of the Lease Modifications area are compromised (and "crappy") is arbitrary because it is based on outdated information, and contradicted by later Forest Service inventories confirming Sunset Roadless Area's roadless (and wilderness) character.

For example, while the FEIS discusses wells drilled somewhere in the area in the 1960s, the Forest Service considered the Sunset Roadless Area to be roadless in its subsequent 1979 RARE II inventory. The 1979 RARE II inventory was generally confirmed by the agency's 2005 on-the-ground assessment of roadless conditions in the North Fork Valley.[141] In 2005, the agency conducted an inventory of roadless characteristics throughout most of the West Elk IRA by grouping the remaining IRA lands into seven distinct tracts.[142] The Forest Service observed that within the Sunset Roadless Area, "[t]he lands directly adjacent to the Wilderness boundary offer a high degree of naturalness" and "[o]pportunities for remoteness and solitude are present in the vicinity of the wilderness boundary."[143] The agency noted the existence of the "Deep Creek Slide area," which the agency characterized as a "Special Feature" and a "striking geologic feature."[144] The Forest Service concluded that "[t]he portion of the unit immediately adjacent to the wilderness retains the roadless qualities that make it **capable** of wilderness," and the agency's 2005 inventory map indicates that about one-half of the entire 5880-acre area – approximately 2940 acres – is capable of supporting wilderness.[145] Furthermore, even though the Forest Service noted that the Sunset Roadless Area is proximate to roads and trails at its margins,[146] the 2005 inventory is devoid of any mention of roads, "ditches, reservoirs, [or] full-sized trails" detracting from the Sunset area's roadless character. In its inventory analysis, the

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[141] U.S. Forest Service, North Fork Valley – Roadless Evaluation (2005) at 35-53, attached as Exh. 80. See also FEIS at 479-480.

[142] See North Fork Valley – Roadless Evaluation (Exh. 80) at 35 (identifying the Sunset Roadless Area as tract no. 23).

[143] Id. at 49 (emphasis added).

[144] Id.

[145] See id. at 48-49 (emphasis in original).

[146] See id. at 49.

Forest Service made clear that it specifically excluded lands compromised by roads within the West Elk IRA from the 2005 inventory.[147] The existence of a few old stock ponds, see FEIS at 171, even if created by bulldozers 40 years ago, does not mean the area lacks roadless, or even wilderness, character, since many roadless and wilderness areas have fences and stock ponds for livestock.[148] Far from "reaffirming" impacts to roadless character, as the FEIS alleges (at 165), the 2005 inventory found that despite such impacts – to the extent there actually were any – the Sunset Roadless Area was roadless in 2005, and that nearly 3,000 acres of Sunset Roadless Area were capable of wilderness protection.

None of the maps in the Lease Modifications FEIS contradict the 2005 inventory results concerning the wilderness capable portion of the Sunset Roadless Area; none of the roads identified on FEIS's maps occur within the proposed lease modification areas. See FEIS at 169, 171. Further, the Forest Service itself has repeatedly relied on the 2005 inventory since 2005. In 2010, as part of scoping on this project, the Forest Service published a map on its website that displays the vast majority of each lease modification area as roadless according to the 1970s-era RARE II inventory (the "Inventoried Roadless Area Boundary" on the map) and the more recent 2005 inventory (the "Proposed Colorado Roadless Area Boundary" on the map).[149] The Forest Service also relies on the 2005 inventory for its 2011 Colorado Roadless Rule Draft EIS and for its 2012 Colorado Roadless Rule Final EIS, each time adopting a map that displays the same

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[147] See id. at 35 ("Lands altered by road construction and timber harvest ... were removed from the inventory." (emphasis added)).

[148] See, e.g., FEIS at 171 (map displaying fence lines and a stock pond inside the West Elk Wilderness).

[149] See Forest Service, Map, Mtn. Coal Lease Modification (April 2010), attached as Exh. 81, available at http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/68608_FSPLT1_027748.pdf (last viewed Sep. 23, 2012).

boundaries for the Sunset Roadless Area as those in the 2005 inventory.[150] For the FEIS to describe the Sunset Roadless Area's roadless character as determined in the 2005 inventory to be "compromised" while simultaneously relying on that inventory in the Final EIS for the Colorado Roadless Rule, published only a few months ago, is arbitrary and capricious.

Despite its own fact-finding concerning roadless characteristics of the Sunset Roadless Area in 2005, the Forest Service erroneously elected to offer: (1) no acknowledgement that the Lease Modifications — and the 6.5 miles of road and 48 well pads that any coal mining will require — will affect lands that are a capable of supporting wilderness; or (2) any analysis of how the impacts to the lease area (1722 acres) will affect the larger 5880-acre roadless area or the approximately 2940 acres capable of supporting wilderness. The proposed lease modification areas includes lands contiguous with the West Elk Wilderness, and methane well and access road installation on these lands will likely reduce the likelihood of their future addition to the existing wilderness area for a generation. The Lease Modifications open the door to development where wilderness values are the highest, and will bisect and fragment the entire 5880-acre Sunset Roadless Area. In electing to ignore these impacts, the FEIS contradicts the clear instruction of Smith and its progeny and violates NEPA's hard look requirement.[151]

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[150] Compare 2005 inventory map (Exh. 80) at 48 with Forest Service, Map, North Fork Coal Mining Area, Alternatives 2 & 4 (Mar. 2012), attached as Exh. 82, available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5365967.pdf (last viewed Sep. 23, 2012).

[151] The Forest Service was aware that the Smith line of cases provided instructive guidance for evaluating the impacts to roadless areas in the present case. See email correspondence between Ken Tu, Regional Environmental Coordinator, Rocky Mountain Region, U.S. Forest Service and Ryan Taylor (Mar. 29, 2011) (citing Smith and observing that, generally, it is "Forest Service policy that proposals that would substantially alter the undeveloped character of an inventoried roadless area normally require an EIS.") (attached as Exh. 79).

The Forest Service at one point appears to dismiss the 2005 inventory as irrelevant in the Lease Modification FEIS in part because the "Sunset Trail roadless area ... came about in the Draft Forest Plan Revision, a plan that has been rescinded because of litigation over the Planning Rule(s)." FEIS at 49. However, the Forest Service cannot reject the 2005 inventory on those grounds: while the Forest Service may have shelved the 2005 Draft Forest Plan Revision for reasons having nothing to do with a resource inventory, the agency cannot ignore its own factual determination, based on on-the-ground inventories, that the Sunset Roadless Area identified in 2005 possesses roadless values, particularly not when the Forest Service continued to rely on the 2005 inventory in the 2007 E-Seam Final EIS, the 2011 Colorado Roadless Rule Draft EIS, and the 2012 Colorado Roadless Rule Final EIS. There is no evidence in the record that contradicts the Forest Service's 2005 roadless inventory, nor is there any evidence of any more recent Forest Service inventory, or of the identification of any additional roads in the area of the lease modifications.[152] Cf. Smith, 33 F.3d at 1078 ("That the land has been released by Congress for nonwilderness use does not excuse the agency from complying with its NEPA obligations when implementing a land-use program."). The FEIS's statement that "much of the West Elk roadless area … has compromised character due to management activities," FEIS at 49, apparently refers to areas other than the 5,880-acre Sunset Roadless Area, and certainly other than the nearly 3,000 acre wilderness-capable portion of that roadless area. As it relates to the wilderness capable

[152] The FEIS states, somewhat equivocally, that: "Aerial photography indicates that there may be remnants of motorized roads or trails in the lease modifications area." FEIS at 161 (emphasis added). While the project record reviewed in June 2012 contained one aerial photo, we did not locate photo analysis or interpretation in the record. A review by an expert in photo interpretation found that the vast majority of the Lease Modifications area appeared to be free from motorized roads or trails. See Declaration of Douglas C. Pflugh (Dec. 23, 2011), attached as Exh. 83.

portion of the Sunset area, that "compromised" characterization is unsupported in the record, and directly contradicted by the 2005 inventory.[153]

The FEIS's characterization of the Sunset Roadless Area – and of the "wilderness capable" lands therein – as "compromised" is arbitrary and capricious.[154]

3. The Forest Service's Analysis Of Impacts To Roadless And Wilderness Character Is Contradictory And Contrary To Evidence Before The Agency.

The FEIS fails to characterize impacts to roadless character from the selected alternative as "significant" or "not significant," but asserts that impacts to roadless character would generally be "short-term," although it fails to identify where those "short-term" impacts would occur.[155] (For example, the FEIS does not clarify whether the impacts to roadless character would occur just in the roadbed of the MDW access routes, as the Nov. 2011 EA asserted, or

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[153] The FEIS also alleges that the West Elk IRA's roadless character was "reevaluated in the 2002 EA for Methane Drainage, as well as the 2008 EIS for E-Seam development," which found the area compromised at that time. FEIS at 49. These statements are either irrelevant or false. It is irrelevant as to the 2002 EA because the subsequent 2005 inventory found the Sunset area to remain roadless. It is also irrelevant because road building in the West Elk IRA occurred not in the Sunset Roadless Area but in the Coal Creek Mesa area. E-Seam Final EIS (Exh. 19) at 128. It is false as to the 2008 E-Seam EIS, which did not purport to undertake a roadless inventory but relied on the 2005 inventory which the Forest Service here seeks to disparage. See id. (relying on the 2005 "Roadless Inventory & Evaluation of Potential Wilderness Areas"). Further, even if the E-Seam Final EIS states that the Sunset Roadless Area was "compromised … within the immediate area" of the E-Seam proposal, see id. (emphasis added), such a allegation is not determinative here. As noted above, the Lease Modifications at issue here will intrude into the most pristine, "wilderness capable" areas of the Sunset Colorado Roadless Area (in sections 11, 14 and 15), which are not directly adjacent to the E-Seam project.

[154] Even if the Forest Service is correct that an old stock trail and 40-year-old exploration tracks "compromise" and "fragment" the Sunset Roadless Area, as the FEIS alleges (at 181-182), it is arbitrary for the FEIS to conclude that these old routes have persisted in their damaging impacts for decades, but that the 6.5 miles of new roads and 48 acres of clear cuts for well pads under Alternative 3 will have only minor "short term" impacts to the area's roadless character. See FEIS at 191.

[155] FEIS at 177 ("The roadless area characteristics within the Sunset CRA would be generally adversely impacted over the short-term, although aspen and spruce/ fir types would take longer to regain natural appearances from temporary road construction activities and well pads.").

whether road construction would, even temporarily, impact a larger area). Installation of well pads and access roads in the Sunset Roadless Area will significantly alter the lands' character, yet the Forest Service fails to define the spatial reach of the expected impacts on roadless characteristics and has understated their likely duration. Further, the FEIS contains contradictory statements about the extent of the harm to roadless character from the construction and bulldozing of roads and MDW pads.

First, the agency must accurately portray the impacts of the proposed action. Road construction may directly consume 24 acres of lands (FEIS at 54), but it will result in the establishment of a spider-web of roads and well pads throughout the Lease Modifications area. The Forest Service anticipates the installation of 48 methane wells, each requiring 1 acre of cleared, level ground, and 6.5 miles of access road construction in the Lease Modifications area over the life of the leases. See FEIS at 54. In general, mines in the North Fork Valley require the installation of one methane venting well for every 32-64 acre tract of surface acres over the mine, or 10-20 pads per square mile.[156] The dispersal of approximately 48 methane venting wells connected by 6.5 miles of access roads in the Sunset Roadless Area will convert more than 1,700 acres of undeveloped, unroaded lands, which is contiguous with the West Elk Wilderness and much of which is capable of supporting wilderness, into heavily developed lands

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[156] See U.S. Forest Service, Rulemaking for Colorado Roadless Areas, Draft Environmental Impact Statement, 108 (July 2008) ("Colorado Rule 2008 DEIS"), available at http://fs.usda.gov/Internet/FSE_DOCUMENTS/fsm8_035972.pdf, (last viewed Sep. 23, 2012), excerpts attached as Exh. 84; see also U.S. Forest Service Rulemaking for Colorado Roadless Areas, Revised Draft Environmental Impact Statement, at 124 (2011) ("Colorado Rule 2011 Revised DEIS") ("between 10 and 20 methane drainage well locations per 640-acre section have been constructed at the existing mines. For the purpose of this analysis, it was assumed that about three miles of road per section would be needed for methane drainage purposes."), excerpts attached as Exh. 85; Colorado Rule 2011 Revised FEIS at 72 (2012) ("it was assumed that … 3 miles of road per section for methane drainage wells" would be needed), excerpts attached as Exh. 86.

crisscrossed by roads and well pads. The well pads are generally sited at regular intervals in a linear manner over the coal panel beneath and connected by roads, making it impossible for anyone (or any wildlife) to walk more than a few hundred yards without hitting a road or well pad, and leaving obvious linear scars visible from every ridge-top. See E-Seam Final EIS (Exh. 19) at Figure 3, (illustrating the density of methane venting wells at the West Elk Mine to the north of the proposed lease modification areas); FEIS at 171 (Figure 3.30b) (illustrating the location of E-Seam drainage wells near the Lease Modifications). The entire 1,700 acres of roadless land within the Lease Modifications will likely see its roadless character degraded. Yet the FEIS fails to disclose the broad extent of these impacts, or the effect on the larger Sunset Roadless Area.[157]

These are, however, exactly the types of impacts federal courts require federal agencies to disclose. As the Tenth Circuit has noted: "the location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface acreage may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them." New Mexico ex rel. Richardson, 565 F.3d at 706 (emphasis added). Here, the Forest Service has made no attempt to address the nature or location of the road and MDW network (beyond estimating road mileage and the number of MDWs), although it could readily do so, as it did for the E-Seam EIS, and as BLM has done for the road and MDW network needed for other coal lease expansions in the North Fork Valley.[158] At a minimum, the Forest Service should have – and could have – disclosed the likely general location of roads and

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[157] While the FEIS contains a table for each alternative addressing impacts to various roadless characteristics, the document fails to address where those impacts would occur, or to compare where on the ground those by alternative. FEIS at 173-179.

[158] See, e.g., BLM, Environmental Assessment, Elk Creek East Tract Coal Lease (June 2011) at 9, excerpts attached as Exh. 87.

well pads, based on the location of proposed coal panels underground and on past experience with ongoing E-Seam mining. The Forest Service has had an MCC map for more than three years displaying the likely location of coal panels in the Lease Modifications area.[159]

Second, the Forest Service must evaluate the impact of road construction in the proposed lease modification areas on the entirety of the 5880-acre Sunset Colorado Roadless Area. See, e.g., Smith, 33 F.3d at 1078. Here, the Forest Service has failed to undertake any meaningful analysis of the impact of the proposed lease modifications on roadless values. Instead, it offers the superficial determination that impacts to an unspecific portion of the Sunset Roadless Area would be, in general, "short-term." FEIS at 177. Nowhere does the FEIS state the extent (in terms of area) of these "temporary" impacts. The Forest Service's analysis fails to meet NEPA's requirements. See, e.g., Sierra Club, Inc., 82 Fed. Appx. at 573 (finding an EIS deficient for "[s]imply disclosing the fact that the unique qualities of the unroaded areas may be diminished" without analysis).

The FEIS itself acknowledges in several cases that road and well pad construction will result in impacts extending decades into the future, impacts that are "long term" rather than temporary.[160] The Forest Service expressly acknowledged that "based on current mining practices, … about 72 total acres of surface disturbance would occur from mine operations over the life of the lease modifications (expected to be about 25 years ….)." FEIS at 53. The Final EIS also admits that reclamation elsewhere in connection with the West Elk Mine has, in fact,

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[159] See Ark Land Co., Application to Modify Federal Coal Leases C-1362 and COC-67232 (Jan. 19, 2009) at 4 (map displaying coal panels under the two lease modification areas, dated January 2009), attached as Exh. 88.

[160] The FEIS defines "long-term effects" as "those that would occur after coal is mined." FEIS at 47. Coal would be mined "over a period of approximately 3 years." Id. at 52. Thus the FEIS defines any impact longer than three years to be "long term."

permanently altered the natural community occurring in the reclamation area from oak brush to grassland. Draft EIS at 157 ("Once revegetation has occurred, the areas of previous disturbance (usually oak brush or shrub areas in the case of the West Elk Mine) become grassland areas that are a benefit to wildlife and livestock."). For the proposed Lease Modifications area, the effect of reclamation efforts will likely be even more pronounced and long term because the impacted area is mostly mature forest at higher elevations, where the growing season is shorter than in lower oak scrub habitat where most of MCC's previous MDWs have been bulldozed. See id. at 39-40, 128 (road and MDW pad construction is likely to destroy "approximately 7 acres of oak, 58 acres of aspen, and 7 acres of spruce-fir" in primarily "mature/overmature" condition). Nearly 90% of road and MDW construction will thus likely occur on roadless lands where aspen or spruce-fir more than a century old will be chainsawed and removed. Id. Not surprisingly in light of the mature forest in these areas, the Forest Service concedes that the impacts to vegetation are not temporary: "This project will … not remove habitat permanently from the landscape, but will remove it in the short- and mid-term." Id. at 123 (emphasis added). The Draft EIS also admitted that "the construction of access roads and drill pads will result in a long-term loss of forage on about 72 acres," further underscoring the significant, long-lasting impacts to vegetation. Draft EIS at 127 (emphasis added).[161] The Forest Service must explain its apparently contradictory conclusions that clearing mature forest vegetation over 72 acres for roads and well-pads will have impacts into the "mid-term" and possibly permanently alter the plant community in these areas from forest to grassland, but that the impacts to roadless values

[161] After Appellants pointed out that the Draft EIS stated that the loss of forage could be "long term," the Forest Service scrubbed the phrase "long term" from the corresponding sentence in the Final EIS. See FEIS at 156 (road and MDW pad construction "will result in a short and mid-term (3-6 years) loss of forage on about 72 acres").

would, nonetheless, last only a few years. See FEIS at 192 (labeling impacts of road and MDW construction not irreversible in part because lands would "revegetate within a few years").[162]

The Forest Service's recognition of the long-term impacts to forest vegetation in the Lease Modifications area is echoed by the U.S. Fish and Wildlife Service and by other Forest Service analysis for this area. In its concurrence letter addressing the project's impacts to lynx, the Fish and Wildlife Service assumed that "lynx habitat may recover to year-round functionality approximately 30-40 years post disturbance."[163] Further, in a prior NEPA document, the Forest Service concluded that road building in roadless areas near the West Elk Mine will result in long-term and irreversible impacts to roadless characteristics. "Road construction and operation" affiliated with the E-seam project in roadless areas "would be considered long term, and would impact roadless area character and management long term and diminished [sic] the quality of essential [roadless] criterions/characteristics and values." E-Seam Final EIS (Exh. 19) at 150. The agency further concluded that such road construction would result in an "irreversible and

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[162] Photos in the FEIS confirm the potential for long-term impacts to vegetation. Figure 3.30g shows two men standing in what is an obvious clearcut "3 to 4 years after final reclamation." FEIS at 181. The FEIS states that roads (and MDWs) will likely remain in use on the landscape for 2-6 years. Id. at 182. Thus, the Forest Service projects an obvious clearcut will remain on the landscape a decade after construction begins. And it will take many more years, perhaps decades, to restore vegetative cover to the clearcut area that is similar to the cover that existed before the MDW pad was built. See FEIS at 177 (admitting that "naturally appearing landscapes wit high scenic quality in the roadless area" may take "25 years" after reclamation to regain those qualities); id. at 182 ("restoration of aspen and spruce/ fir to generally natural appearances may take as much as 25 years"); id. at 192 ("it could be several decades until reclaimed areas reach their pre-disturbance character").

[163] FWS Concurrence Letter (Exh. 21) at 3 (emphasis added). While the Final EIS does admit that aspen and spruce-fir will not recover from a scenery perspective for up to "25 years," FEIS at 177, the FEIS contains no similar assessment of the duration of damaging impacts to habitat. The FEIS merely states that "[r]estoration requirements will minimize long term impacts." FEIS at 176. The FEIS nowhere discloses the FWS's conclusion that habitat functionality for wildlife could be lost for up to 40 years. The Forest Service's decision to not disclose contrary scientific conclusions without explanation violates NEPA's "hard look" requirement.

irretrievable commitment" of the roadless resource: "Cumulative loss of roadless character in this portion of the IRA would result in the long term (extending beyond life of project estimated at 12 years) loss of manageability and planning consideration for this resource." Id. at 152. The Lease Modifications Final EIS offers no explanation for the discrepancy between its conclusions and the conclusions of the E-Seam Final EIS (which addressed the same types of impacts, from the same mine, near the Sunset Roadless Area) regarding the long-term nature of impacts to roadless values from well pad and access road construction.

The FEIS's conclusion that impacts to the Sunset Roadless Area will be generally short-term and temporary is further contradicted by the Forest Service's Final EIS on the Roadless Area Conservation Rule in 2000. See supra at 91-92. The FEIS offers no reasonable explanation for contradicting the 2000 Roadless Area Conservation Rule Final EIS on the impacts of "temporary" roads; the failure to explain that contradiction is arbitrary and capricious.

While the FEIS fails to explain the spatial dimension of impacts to roadless character, it does list roadless characteristics and generally discusses the impacts from roads and well pads. See FEIS at 175-77. But this analysis is flawed and fails to take the hard look NEPA requires.

For example, the FEIS fails to properly disclose the impacts on roadless recreational values. In assessing the impacts of the proposed action on recreational resources, the FEIS states: "[t]he Recreational Opportunity Spectrum (ROS) setting for the area ranges from semi-primitive non-motorized to roaded natural." FEIS at 170. But despite statements to the contrary, Appellants could locate no map in the FEIS showing the location of the ROS settings within the Lease Modifications, making it difficult to understand impacts to, or required management of,

lands to be managed to different recreation settings within the Lease Modifications.[164] The Lease Modifications area is entirely within a 6B prescription area, which directs that the GMUG National Forest "[p]rovide semi-primitive recreation opportunities in all areas more than ½ mile away from roads and trails open to motorized recreation use." GMUG National Forest Plan (as amended, 1991) at III-146. Given that few, if any, lands in the Lease Modifications are within a ½ mile from an open road, the Forest Service should have disclose that the agency must manage virtually entire area for semi-primitive, non-motorized recreation. The FEIS omits this critical fact, in violation of NEPA's "hard look" requirement. And by failing to include this information, the FEIS cannot adequately assess the impacts of years of road and MDW construction and operation on the recreational opportunities within the area.

Second, the FEIS fails to disclose the Lease Modifications' impacts to the wilderness capability of the Sunset Roadless Area. The fact that a portion of the roadless area is capable of wilderness protection is a key attribute of the area, one recognized by the Forest Service in its 2005 inventory. See FEIS at 171 (Figure 3.30b) (displaying areas identified as wilderness capable in the 2005 inventory); FEIS at 479-480 (GMUG National forest inventory report). While the FEIS purports to examine the alternatives' potential impacts on some roadless characteristics, FEIS at 172-182, the impacts to wilderness capability is summarily dismissed as follows:

[164] The FEIS states: "A map of the Recreation Opportunity Spectrum (ROS) has been included in the FEIS." FEIS at 586. But the FEIS table of contents lists no such map, and we could not locate one in the document.

> Part of IRA was identified as "capable" in wilderness screening process. The area is contiguous to wilderness and includes a unique geologic feature; however, the area was not recommended for Wilderness designation.[165]

This response misses the point. Wilderness values are present in the Sunset Roadless Area; that wilderness capability may be irretrievably lost through the construction of a web of roads and MDWs in the heart of the wilderness capable lands. The fact that the GMUG National Forest does not manage the lands to protect those wilderness values does not erase those values, nor does it eliminate the Forest Service's duty to take a hard look at a project's potential impacts to those multiple use values. The FEIS failed to take the hard look at the impacts of bulldozing and road and MDW construction that would follow the Lease Modifications to wilderness capable lands; that failure violates NEPA.

XIV. THE FOREST SERVICE FAILED TO ADDRESS DIRECT VOC EMISSIONS ASSOCIATED WITH METHANE VENTING IN ACCORDANCE WITH NEPA

Despite Appellants urging, the Forest Service failed to analyze and assess the volatile organic compound ("VOC") emissions that will result from the reasonably foreseeable impacts of methane venting resulting from the Lease Modifications.[166] As the Forest Service explains, VOC emissions form ozone pollution, making them pollutants of significant concern. See FEIS at 57. Under Clean Air Act regulations, VOCs, include "any compound of carbon," but exclude a number of carbon compounds, such as methane and ethane. However, while methane and

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[165] FEIS at 175. See also id. at 176 (similar analysis); id. at 585 ("The Forest is not required to hold areas that are found to be capable in that status indefinitely if they did not make it through the screening process to be recommended.").

[166] Appellants WildEarth Guardians and Rocky Mountain Wild provided detailed comments on the DEIS regarding the issue of VOC emissions associated with methane venting. See FEIS, Appendix H at 509-512. See also letter of J. Nichols WildEarth Guardians to GMUG Nat'l Forest (July 9, 2012) at 2-7, attached as Exh. 89.

ethane are expressly excluded as VOCs, other related compounds, including propane, pentane, butane, hexane and benzene are expressly regulated as VOCs. See 40 C.F.R. § 51.100(s).

The Forest Service recognizes that VOCs are released as a result of methane venting (see FEIS at 75-76), even presenting data gathered by MCC demonstrating that VOC emissions are a significant issue. However, the Forest Service makes no effort analyze or assess these emissions and whether or not such emissions are significant under NEPA, even though Appellants explained in detail how VOC emissions were significant and warranted detailed attention in the FEIS. The Forest Service explicitly refused to analyze these emissions, stating, "no attempt is made here to quantify all non-methane emissions on an annual basis." FEIS at 76.

The Forest Service proffers several assertions as a basis for its refusal to analyze and assess VOC emissions, but in all respects, these assertions are contrary to NEPA.

NEPA presumes that issues identified as significant and carried forward for analysis will be adequately analyzed and assessed in an EIS. NEPA regulations explicitly require that "environmental impacts" of alternatives be discussed by federal agencies, including "direct effects and their significance." 40 C.F.R. § 1502.16(a). The only exception to the rule that environmental impacts be analyzed and assessed under NEPA is where information is "incomplete or unavailable." 40 C.F.R. § 1502.22. Even then, this exception is not absolute. Where information relevant to reasonably foreseeable significant adverse impacts is incomplete, yet is "essential to a reasoned choice among alternatives," federal agencies must still obtain the information if the costs are "not exorbitant." 40 C.F.R. § 1502.22(a). Where information is unavailable or the costs of obtaining it are exorbitant, federal agencies must still include within an EIS a statement that explains that such information is incomplete or unavailable, a statement of the relevance of the incomplete or unavailable information, a summary of existing credible

scientific evidence relevant to evaluating impacts, and an evaluation of such impacts based upon theoretical approaches or research methods. See 40 C.F.R. § 1502.22(b). See also supra at 20.

Here, VOC emissions were identified by the Forest Service as a significant issue carried forward for further analysis in the FEIS. See FEIS at 9. Furthermore, the Forest Service did not identify that information related to VOC emissions was "incomplete or unavailable." Thus, the Agency had a duty to analyze and assess VOC emissions pursuant to NEPA.

The Forest Service undertook no such analysis or assessment. Instead, the Forest Service asserted a number of excuses for avoiding this analysis and assessment. None of these excuses are authorized or contemplated by NEPA.

For example, the Forest Service asserts that existing data on VOC emissions is "limited." FEIS at 76. However, the fact that such data may be "limited" underscores the need for the Forest Service to obtain additional data for purposes of ensuring an adequate FEIS. As Appellants pointed out in comments on the Draft EIS, even if the VOC data is "limited," it demonstrates that VOCs are likely being released at levels that would render the West Elk Mine in violation of the Clean Air Act. Such impacts are directly relevant to the Forest Service's duties pursuant to NEPA, particularly the Agency's duty to demonstrate that its action will ensure compliance with applicable environmental laws and regulations. Indeed, the Forest Service asserts in its ROD that its decision is "consistent with [the Clean Air] Act." ROD at 15. If VOC emissions are released at levels showing that the West Elk Mine is in violation of Clean Air Act permitting requirements, then the Agency's assertions would be patently erroneous. Regardless, simply because data may be "limited" does not allow a federal agency to avoid analyzing or assessing potentially significant impacts under NEPA.

The Forest Service also asserts that VOC emissions are likely "highly variable." FEIS at 76. Again, regardless of whether VOC emissions are "highly variable," it is unclear how this supports refusing to analyze or assess the potentially significant impacts of such emissions. Indeed, if emissions are "highly variable," then in all likelihood, they could be much higher than previously documented, underscoring the need for an analysis and assessment of such impacts.

The Forest Service lastly seems to imply that it is not obligated to analyze and assess VOC emissions from methane venting because, it asserts, the Colorado Air Pollution Control Division "will be requiring all coal mines in the state, including the West Elk Mine, to gather additional data to provide a more accurate annual estimate of VOC emissions." FEIS at 76. However, simply because the Colorado Air Pollution Control Division may at some point in the future be requiring the West Elk Mine to gather data related to VOC emissions does not allow the Forest Service to forego its duties under NEPA. If anything, the fact that the Air Pollution Control Division may be requiring the West Elk Mine to gather such data underscores that the Forest Service could have done the same in order to fulfill its obligations under NEPA, or at least could have waited until such information became available from the Air Pollution Control Division for purposes of ensuring an adequate FEIS.[167]

In any case, the fact that another agency may be gathering data at some point in the future does not allow the Forest Service to ignore its duties under NEPA, as federal courts have repeatedly found. In Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n, 449 F.2d 1109, 1123 (D.C. Cir. 1971), the D.C. Circuit held that relying on another agency's permitting duty to decline to disclose information pursuant to NEPA "neglects [NEPA's]

[167] The fact that the Colorado Air Pollution Control Division will be requiring the West Elk Mine to gather data on VOC emissions further underscores that it is both possible to gather such data and not exorbitantly costly to do so.

mandated balancing analysis. Concerned members of the public are thereby precluded from raising a wide range of environmental issues in order to affect particular [agency] decisions. And the special purpose of NEPA is subverted." Id. Similarly, in South Fork Band Council v. Dep't of the Interior, 588 F.3d 718 (9th Cir. 2009), the Ninth Circuit rejected BLM's argument that NEPA did not require the agency to consider air impacts from certain mining operations because the facility was regulated under a state air permit. The court stated: "This argument also is without merit. A non-NEPA document – let alone one prepared and adopted by a state government – cannot satisfy a federal agency's obligations under NEPA." S. Fork Band Council, 588 F.3d at 726.

The FEIS's failure to address VOC emissions renders the Forest Service's analysis and assessment of air quality impacts arbitrary and capricious in key regards. For example, the Forest Service dismissed analyzing and assessing the impacts of coal mining to ambient concentrations of ground-level ozone because it asserted that the West Elk mine "emits and will continue to emit ... ozone precursors at relatively low levels." FEIS at 76. The agency further explained that "the levels of emissions discussed in previous sections do not warrant ... photochemical modeling analysis to assess impacts from ozone." Id. However, without an actual analysis and assessment of VOC emissions from methane venting, the Forest Service has no basis to assert that ozone precursor emissions, including VOC emissions, are "low" or otherwise "do not warrant" modeling to assess ozone impacts.

Further, an analysis and assessment of VOC emissions is directly relevant to whether the Forest Service's decision "threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment," a factor that agencies must address when assessing the significance of impacts under NEPA. See 40 C.F.R. § 1508.27(b)(10). As

Appellants noted in their comments, if VOC emissions are such that major source thresholds have been triggered under the Clean Air Act's prevention of significant deterioration ("PSD") program (see 42 U.S.C. § 7475), then the West Elk Mine is currently operating in violation of the Clean Air Act.[168] Given that NEPA explicitly requires federal agencies to consider whether their actions threaten a violation of federal law imposed for the protection of the environment, the Forest Service must analyze and assess VOC emissions in order to provide a rational basis for its assertion that operations at the West Elk Mine will be in compliance with the Clean Air Act.[169]

The Forest Service failed to analyze or assess VOC emissions related to methane venting. However, simply because a federal agency declined to comply with NEPA does not allow it to forego its legal obligations. In this case, an adequate analysis and assessment of VOC emissions was necessary to support the Forest Service's contention that the West Elk Mine is operating and will operate in compliance with the Clean Air Act, and that VOC emissions, as well as the potential impacts of mining operations to ambient concentrations of ozone, are not significant. The Forest Service did not demonstrate that information related to VOC emissions was "incomplete" or "unavailable" such that it would be allowed under NEPA to avoid analyzing and assessing such impacts. The ROD must therefore be set and the Forest Service directed to analyze and assess VOC emissions related to methane venting at the West Elk Mine.

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[168] See letter of J. Nichols (Exh. 89) at 4.

[169] The Forest Service must also analyze and disclose this information because the Clean Air Act explicitly requires the agency to ensure that agency actions "comply with" all Federal, State, and other requirements respecting the control and abatement of air pollution. See 42 U.S.C. § 7418(a). This requirement is echoed by the GMUG Land and Resource Management Plan, which requires the Forest to "Comply with State and Federal air quality standards." See LRMP at III-85.

XV. THE FOREST SERVICE FAILED TO TAKE THE REQUIRED 'HARD LOOK' AT THE LEASE MODIFICATIONS' CONTRIBUTION TO OZONE POLLUTION.

The Forest Service failed to analyze or assess the impacts of the lease modifications to National Ambient Air Quality Standards ("NAAQS") for ground-level ozone. The agency does not appear to deny this in the FEIS, but rather appears to provide a number of excuses for not conducting such an analysis and assessment. These excuses do not permit the Forest Service to escape its duty under NEPA to take a "hard look" at the Lease Modifications' ozone impacts. The agency's failure to take the required hard look follows in part from its failure to analyze and assess VOC emissions associated with the West Elk Mine discussed above.

The Forest Service asserts that ozone precursor emissions must be "substantial in quantity" before an analysis and assessment of ozone impacts becomes useful. FEIS at 76. Accordingly, the Agency claimed that VOC emissions from the Mine would be "at relatively low levels," or at levels that "do not warrant" ozone analysis. Id. Although it may be true that ozone precursor emissions should be "substantial in quantity" in order to prompt an analysis and assessment of ozone impacts, the Forest Service here provided no information or analysis to demonstrate that VOC emissions from the West Elk Mine would not be "substantial." The Forest Service thus has no reasoned basis for declining to analyze or assess ozone impacts.

The FEIS appears to justify its failure to address ozone impacts due to the "complexities" of ozone formation. FEIS at 76. However, the agency provides no information or analysis to demonstrate that information related to impacts to the ozone NAAQS is "incomplete," "unavailable," or that the costs of obtaining such information would be exorbitant. NEPA does not allow federal agencies to forego an analysis and assessment of environmental impacts because they are "complex," but rather only allows an agency to forego such an analysis and assessment in accordance with the standards at 40 C.F.R. § 1502.22.

The Forest Service also asserts that "modeling of the mine's emissions [is] highly unlikely to yield any significant impacts to atmospheric concentrations." FEIS at 76. This assertion is an unfounded presupposition. To the extent the Forest Service may claim that this statement represents "professional judgment," even professional judgment must be based on a rational and reasonable foundation of information and analysis. See, e.g., Pub. Citizen Health Research Group v. Tyson, 796 F.2d 1479, 1505 (D.C.Cir.1986) ("While we acknowledge our deference to the agency's expertise in most cases, we cannot defer when the agency simply has not exercised its expertise.").

In this case, the Forest Service's presupposition appears based on the claim that emissions from the West Elk Mine will continue as they always have, and therefore current monitoring is "considered representative of expected future ambient concentrations" of ozone. FEIS at 76. This "things will stay the same forever" approach espoused by the Forest Service is wholly unsubstantiated, especially given the agency's refusal to analyze and assess VOC emissions related to methane venting from the West Elk Mine. Further, it does not appear to reflect the reality of the past. As the FEIS discloses, ozone concentrations in western Colorado have been increasing since 2009. See FEIS at 60. For example, ozone concentrations in Garfield County have increased form 0.062 parts per million to 0.066 parts per million and concentrations in Mesa County have increased from 0.064 parts per million to 0.068 parts per million. If trends continue, both Garfield and Mesa Counties will violate the ozone NAAQS in the future.

Although the Forest Service may assert that nearby Colorado counties do not yet violate the ozone NAAQS, and therefore the impacts of the West Elk Mine will not cause or contribute

to violations of the NAAQS, this argument lacks merit.[170] NEPA requires that agencies disclose and analyze reasonably foreseeable impacts of an agency action. To this end, although an area may be in compliance with the ozone NAAQS today, it may not be in compliance tomorrow. NEPA contemplates that agencies analyze and assess future environmental impacts. The Forest Service's refusal to analyze and assess ozone impacts on the basis of past and present impacts violates NEPA.

The Forest Service provided no reasonable basis for refusing to analyze and assess the impacts of the lease modifications to the ozone NAAQS. The ROD must therefore be set aside and the agency directed to fully analyze and assess ozone impacts, taking into account actual VOC emissions from the West Elk Mine, in order to comply with NEPA and other substantive air quality requirements.

XVI. THE FOREST SERVICE FAILED TO ENSURE COMPLIANCE WITH THE GMUG FOREST PLAN WITH REGARDS TO AIR QUALITY

The GMUG Forest Plan explicitly requires the Forest Service to "[c]omply with State and Federal air quality standards." See Forest Plan at III-85. Given the failure of the Forest Service to analyze and assess the reasonably foreseeable direct, indirect, and cumulative impacts of the lease modifications to the ozone NAAQS, including the failure to adequately analyze and assess VOC emissions related to methane venting, the agency has failed to demonstrate that consent to the Lease Modifications will comply with federal air quality standards.

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[170] Based on the Forest Service's argument, there should be no areas of the United States that are currently in violation of the ozone NAAQS as every part of the United States has, at some point in the past, been in compliance with the ozone NAAQS. According to the EPA, however, there are many areas of the U.S., including in Colorado and Wyoming, that are currently in violation of the NAAQS. See EPA, List of 8-hour Ozone Nonattainment Areas, http://www.epa.gov/airquality/greenbook/hnc.html (last viewed Sept. 23, 2012).

Under the National Forest Management Act ("NFMA") the Forest Service has a duty to ensure that instruments for the use and occupancy of Forest land (like the agency's consent to the Lease Modifications) comply with its Forest Plan. See 16 U.S.C. § 1604(i). The agency's failure to ensure that consent to the Lease Modifications will be consistent with the Forest Plan's duty that the agency comply with federal air quality standards thus violates NFMA.

Although the Forest Service may claim that it lacks authority to address air emissions, this ignores the plain language of the GMUG Forest Plan. Furthermore, it fails to comply with other relevant and applicable legal duties and authorities.

The Forest Service's 1982 planning rules are explicit with regards to setting forth the agency's obligations to protect air quality, stating that management prescriptions must "[b]e consistent with maintaining air quality at a level that is adequate for the protection and use of National Forest System resources and that meets or exceeds applicable Federal, State and/or local standards or regulations." 36 C.F.R. § 219.27(a)(12) (emphasis added).

In other words, the applicable planning rules require that the Forest Service is obligated to independently assure compliance with Federal, State, and local air quality standards. To this end, it is not enough to simply assert that an activity or use will comply with relevant Federal, State, and/or local air quality standards or regulations. Rather the Agency must affirmatively demonstrate that management actions are consistent with maintaining air quality at levels meeting or exceeding such standards or regulations. This affirmative duty is well-founded in NFMA, as well as a number of the Forest Service's other overarching environmental mandates.

The GMUG Forest Plan states that the Forest Service must protect federal air quality standards and applicable legal obligations under NFMA, including the applicable planning rule, confirm that the agency has an affirmative and independent duty to demonstrate that its actions

will protect such air quality standards. The Forest Service has failed to do so with regards to the ozone NAAQS, thereby violating its Forest Plan and NFMA.

XVII. THE FOREST SERVICE MUST SUPPLEMENT ITS LRMP FEIS TO ADDRESS SIGNIFICANT NEW INFORMATION REGARDING AIR QUALITY

Regulations implementing NEPA require the Forest Service to supplement draft or final EISs whenever "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(ii); see also FSH 1909.15-18.

Here, the Forest Service was required to supplement the GMUG Forest Plan EIS before authorizing the Lease Modifications in order to address significant new circumstances and information relevant to, inter alia, air quality impacts. Since the GMUG Forest Plan EIS was prepared in 1983 and subsequently amended in 1991, a number of new federal air quality standards have been adopted and implemented. These include the 2008 ozone NAAQS (40 C.F.R. § 50.15), the 2006 PM2.5 NAAQS (40 C.F.R. § 50.13), the 1-hour NO_2 NAAQS (40 C.F.R. § 50.11(b)), the 1-hour SO_2 NAAQS (40 C.F.R. § 50.17), and PSD increments for $PM_{2.5}$ (75 Fed. Reg. 64863-64907).

Neither the 1983 nor the 1991 EIS on the GMUG Forest Plan address these air quality standards. In fact, the 1991 EIS does not even mention any of the relevant air quality standards that were applicable at the time. In its analysis of air quality impacts, the EIS merely states: "All of the alternatives may temporarily affect local air quality by creating dust and smoke." GMUG Forest Plan, 1991 EIS at IV-24. The EIS does not mention, let alone disclose and analyze, the potentially significant impacts of land management activities to ozone, NO_2, SO_2, and $PM_{2.5}$. This significant flaw must be addressed in a supplemental EIS before the Forest Service can consent to the Lease Modifications.

The need to supplement is especially critical given that a number of land management activities have the potential to significantly directly, indirectly, and cumulatively impact air quality in ways that were not even contemplated in 1983 and 1991. For example, nowhere in the 1991 EIS did the Forest Service address the direct, indirect, and cumulative impacts of coal mining to ambient ozone concentrations. Thus, the agency has no reasonable basis to conclude that the Lease Modifications here will adequately protect ozone air quality standards when considered together with other management activities on the GMUG National Forest. This is significant because NFMA planning regulations command the Forest Service to ensure that management prescriptions "[b]e consistent with maintaining air quality at a level that is adequate for the protection and use of National Forest System resources and that meets or exceeds applicable Federal, State and/or local standards or regulations." 36 C.F.R. § 219.27(a)(12) (emphasis added). In this case, without supplementing the Forest Plan EIS, the Forest Service has no basis to conclude that the GMUG Forest Plan provides adequate management prescriptions that ensure ozone air quality standards will be met or exceeded as a result of implementing the lease modifications.

At the least, the Forest Service was required to assess whether the Forest Plan EIS should be supplemented in light of significant new circumstances and information relevant to air quality impacts that has bearing on the Lease Modifications and their impacts. Such an analysis is required by the FSH, which states:

> If new information or changed circumstances relating to the environmental impacts of a proposed action come to the attention of the responsible official after a decision has been made and prior to completion of the approved program or project, the responsible official should review the information carefully to determine its importance. Consideration should be given to whether or not the new information or changed circumstances are within the scope and range of effects considered in the original analysis.

> If, after an interdisciplinary review and consideration of new information within the context of the overall program or project, the responsible official determines that a correction, supplement, or revision to an environmental document is not necessary, implementation should continue.
>
> Document the results of the interdisciplinary review in the appropriate program or project file. This documentation is sometimes called a supplemental information report (SIR) and should conclude with whether or not a correction, supplement, or revision is needed, and if not, the reasons why.

FSH 1909.15-18.1. The Agency did not undertake such an assessment and instead implied that under the Forest Plan, air quality would be adequately protected. Because it did not asses whether new information regarding air quality impacts is significant, the Forest Service has violated NEPA and the FSH.

Much has changed since 1983 and 1991. The Forest Service has an ongoing duty to ensure that its programmatic NEPA adequately justifies current management decisions. In this case, the Forest Service at least had a duty to assess whether new information regarding air quality impact should trigger the preparation of a supplemental EIS, if not a duty to actually supplement. Especially given that the Forest Plan EIS predates the adoption of a number of air quality standards, this duty is especially critical. The Forest Service failed to address whether its programmatic NEPA was adequately in the context of air quality impacts, and therefore the agency's ROD violates NEPA.

XVIII. THE FOREST SERVICE'S SUITABILITY RECOMMENDATION FAILS TO ADDRESS ROADLESS VALUES.

The Forest Service recognizes that it has a duty to demonstrate that the lands subject to the Lease Modifications are "suitable" for coal mining in accordance with the Surface Mine Control and Reclamation Act ("SMCRA"). See 30 U.S.C. § 1272(e)(2); see also 30 C.F.R. § 761.11(b) and 43 C.F.R. § 3461.5(a). SMCRA allows surface coal mining in National Forests only where surface operations are incident to underground mining and only where the Secretary

of the Interior finds that such National Forest lands lack "significant recreational, timber, economic, or other values which may be incompatible with such surface mining operations." Id. Although the Secretary of the Interior is charged with making suitability determinations under SMCRA, the FEIS states that the Forest Service has a duty to make a recommendation to the Secretary of the Interior as to the suitability of National Forest lands.

Here, the Forest Service's suitability recommendation fails to demonstrate that the lands in question are, in fact, suitable for surface coal mining.

At issue here is SMCRA's mandate that surface coal mining be allowed on National Forest lands only where there they lack "significant recreational, timber, economic, or other values which may be incompatible with such surface mining operations." In its "Unsuitability Analysis" in the FEIS (see FEIS, Appendix B), the Forest Service asserts that there are no "significant recreational, timber, economic, or other values" in the area of the Lease Modifications that may be incompatible with surface mining. The analysis, however, overlooks key values that "may be" incompatible with surface mining.

In particular, the Forest Service does not address the fact that the lands that will be impacted are within Inventoried Roadless Areas that are capable of being protected under the Wilderness Act. The Forest Service further does not address the fact that surface mining will have impacts degrading the Sunset Roadless Areas roadless character for years and decades, and thus could diminish the amount of lands that would be considered capable of being protected under the Wilderness Act. See supra at 94-106. Because the Forest Service gives no

consideration to the unique roadless values of this area, its assertion that there are no significant values in the area is wholly unsupported.[171]

In its unsuitability analysis, the Forest Service does not mention the existence of roadless values in the area. Its analysis comprises two paragraphs in the FEIS. See FEIS at 466. Although values such as timber, livestock grazing, and recreation are mentioned, there is no mention of the wilderness capacity of the area, or of the roadless values that are encompassed by the Inventoried Roadless Areas, and how surface mining may affect such characteristics or values. These omissions are arbitrary and capricious.

Although the Forest Service may have some discretion to determine which "significant other values" warrant attention when assessing the suitability of lands for coal leasing, the agency cannot simply ignore the impacts of surface mining – here, construction that will clearcut a web of roads and drilling pads, removing century-old forest that will not recover to its current state for decades, thereby damaging both wilderness and roadless values. The Forest Service acknowledges in its FEIS that the Lease Modification lands are inventoried roadless areas, and that the lands were found to be capable of being protected as wilderness. Some impacts of the Lease Modifications are likely to be irreversible. See supra at 29-30, 94-107.

The Forest Service's failure to address the fact that the Lease Modifications area contain significant roadless and/or wilderness values when assessing the suitability of the lands for surface coal mining is a significant oversight. Accordingly, the ROD must be set aside and the Forest Service directed to consider such values in conducting any future suitability analysis.

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[171] A visitor can easily discern the area's unique, scenic, roadless, and wilderness values, with its large spruce trees and aspen stands, its meadows, ponds, and unique geologic features. See E. Zukoski, Photos of Sunset Roadless Area (2001, 2011), attached as Exh. 90.

REQUEST FOR RELIEF

Based on the foregoing Statement of Reasons, Appellants request the following relief:

1. The Regional Forester must set aside the Record of Decision providing the Forest Service's consent to the Federal Coal Lease Modifications COC-1362 & COC-67232.

2. If the Forest Service intends to consent to Federal Coal Lease Modifications COC-1362 & COC-67232, the agency must prepare NEPA documentation (including opportunities for public involvement and appeal) that complies fully with NEPA, the Clean Air Act, the Administrative Procedure Act, the Endangered Species Act, the National Forest Management Act, SMCRA, the Forest Plan, and any other relevant law, and that addresses all of the issues raised in this appeal.

3. Any decision on this appeal must include a full response to each issue raised in the Statement of Reasons.

4. The Regional Forester must direct the Forest Supervisor of the GMUG National Forest to refrain from committing any agency resources to implement or otherwise consent to Federal Coal Lease Modifications COC-1362 & COC-67232 unless and until the Forest Service complies with all applicable law, as described in paragraphs 1-3, above.

Appellants further request that all communications concerning this appeal be delivered to:

(1) Edward B. Zukoski, Appellants' attorney; and

(2) Jeremy Nichols, representative of WildEarth Guardians, Lead Appellant.

Addresses of attorneys and Appellants are provided below. We look forward to being offered an opportunity to meet with Supervisor Armentrout to attempt to informally resolve this appeal, as provided by 36 C.F.R. § 215.17(a).

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TABLE OF EXHIBITS[1]

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Exhibit 1	Mountain Coal Company, First Quarter 2010 Methane Release Data (May 3, 2010)
Exhibit 2	Letter of H. Whitman, Mount Gunnison Fuel Co. (May 17, 2012)
Exhibit 3	MCC, Map, Projected and Maximum E-Seam Mine Layout (July 23, 2010)
Exhibit 4	U.S. Forest Service Map, Cutthroat Trout Conservation Population in Relationship to Lease Modification Project Area (July 19, 2012)
Exhibit 5	Letter of E. Zukoski, Earthjustice on behalf of High Country Citizens' Alliance, to GMUG National Forest (July 9, 2012)
Exhibit 6	F. Ackerman & E. Stanton, Climate Risks and Carbon Prices: Revising the Social Costs of Carbon (2010)
Exhibit 7	P. Epstein et al., Full cost accounting for the life cycle of coal, Ann. N.Y. Acad. Sci. (2011)
Exhibit 8	Environmental Protection Agency and National Highway Traffic Safety Administration, Final Rule, 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards (Aug. 28, 2012) (excerpts) available online at www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/2017-25_CAFE_Final_Rule.pdf.
Exhibit 9	Interagency Working Group on Social Cost of Carbon, Technical Support Document (Feb. 2010)
Exhibit 10	L. Johnson & C. Hope, The social cost of carbon in U.S. regulatory impact analyses: an introduction and critique, J. Environ. Stud. Sci. (Sept. 9, 2012), available online at http://www.springerlink.com/content/863287021p06m441/fulltext.pdf?MUD=MP (last viewed Sep. 18, 2012)
Exhibit 11	A. Johnson, Mining officials hope for longer lease on life for West Elk Mine, Crested Butte News (Apr. 25, 2012)

[1] All exhibits are provided in PDF format on the attached disc (or emailed separately to email recipients).

Exhibit #	Description
Exhibit 12	D. Webb, Coal taking market lumps, Grand Junction Sentinel (Aug. 17, 2012), available online at http://www.gjsentinel.com/news/articles/coal-taking-market-lumps
Exhibit 13	Ark Land Co., Federal Coal Exploration License Application (Nov. 1998)
Exhibit 14	Email of D. Gray, GMUG NF (Mar. 7, 2012 12:29 PM)
Exhibit 15	Email of D. Gray, GMUG NF (Mar. 13, 2012 6:34:11 PM)
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Exhibit 17	Map, Arch Coal Sunset Trail CR Survey and Report (Oct. 2011)
Exhibit 18	Email of N. Mortenson (Apr. 5, 2012 8:33 AM)
Exhibit 19	U.S. Forest Service, Deer Creek Shaft and E Seam Methane Drainage Wells Project FEIS (Aug. 2007) (excerpts)
Exhibit 20	GMUG National Forest, Biological Assessment For Federal Coal Lease Modifications COC-1362 & COC-67232 (April 2010)
Exhibit 21	Letter of A. Pfister, US Fish & Wildlife Service to C. Richmond, GMUG National Forest (June 16, 2010)
Exhibit 22	Forest Service, Record of Decision, GMUG National Forest Oil and Gas Leasing EIS (Apr. 19, 1993) (excerpts)
Exhibit 23	Forest Service, GMUG National Forest Oil and Gas Leasing Final EIS, Vol. II (1993) (excerpts)
Exhibit 24	Map, MCC Lease Modifications (from USFS Project File)
Exhibit 25	CEQ, Draft Climate Change Guidance (Feb. 18, 2010)
Exhibit 26	Interior Secretary Order No. 3289 (Sept. 14, 2009)
Exhibit 27	Colo. Exec. Order No. D 004 08 (Apr. 22, 2008)
Exhibit 28	Speech of Interior Secretary Salazar, Copenhagen, Denmark (Dec. 10, 2009)
Exhibit 29	C. Richmond, "Capturing methane released by mines is a work in progress," Grand Junction Sentinel (Mar. 23, 2008)
Exhibit 30	Letter of S. Bohan, EPA to S. Hazelhurst, GMUG National Forest (July 11, 2012)

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Exhibit 31	T. Power, et al., An Economic Analysis of the Capture and Use of Coal Mine Methane at the West Elk Mine, Somerset, Colorado (Jan. 7, 2010)
Exhibit 32	T. Power et al., An Economic Analysis of the Capture and Use of Coal Mine Methane at the West Elk Mine, Somerset, Colorado, December 2011 Update (Dec. 2011)
Exhibit 33	J.M. Somers & H.L. Schultz, Coal mine ventilation air emissions: project development planning and mitigation technologies (2010)
Exhibit 34	Durr Envtl. & Energy Sys., Securing Your VAM Investment with Proper RTO Technology (2010)
Exhibit 35	EPA, Ventilation Air Methane (VAM) Utilization Technologies (2009)
Exhibit 36	Deborah A. Kosmack, Capture and Use of Coal Mine Ventilation Air Methane (2009), Excerpts
Exhibit 37	Pamela Franklin et al., EPA, EPA Activities to Promote Coal Mine Methane Recovery (2010)
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Exhibit 40	EPA, Coalbed Methane Extra, Summer 2010 (excerpts)
Exhibit 41	EPA, Coalbed Methane Extra, Dec. 2009
Exhibit 42	Letter of E. Zukoski, Earthjustice, to C. Richmond, GMUG NF (May 20, 2010)
Exhibit 43	Verdeo Group, Inc., Ventilation Air Methane Oxidation Feasibility Study: Evaluation of Technical and Economic Project Viability at the West Elk Mine (September 2009)
Exhibit 44	MCC, West Elk Mine E-Seam Gas Economic Evaluation Report (Sept. 24, 2009)
Exhibit 45	MEGTEC, Ventilation Air Methane (VAM) Processing, MEGTEC Solutions for VAM Abatement, Energy Recovery & Utilization
Exhibit 46	Biothermica, VAMOX, Create Value from VAM
Exhibit 47	Daniel J. Brunner & Karl Schultz, Effective Gob Well Flaring (1999), (excerpts)
Exhibit 48	EPA, International News – Coalbed Methane Outreach Program (2009)
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Exhibit 51	Global Methane Initiative Coal Subcommittee, Flaring of Coal Mine Methane: Assessing Appropriate Opportunities (Nov. 1, 2011)
Exhibit 52	Harworth Power Ltd., CMM Flaring (2007) (excerpts)
Exhibit 53	John C. Hempel, Preliminary Assessment of the Feasibility of Capturing and Using Coalbed Methane Gas
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Exhibit 55	Letter of Larry Svoboda, EPA, to Charles Richmond, USFS (Aug. 7, 2007)
Exhibit 56	Letter of Larry Svoboda, EPA, to Melissa Smeins, BLM (Apr. 22, 2010)
Exhibit 57	EPA, Conceptual Design for Coal Mine Gob Well Flare (1999) (excerpts)
Exhibit 58	Dep't of Interior, Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases (1980)
Exhibit 59	Email of Hubert E. Sherer, MSHA, to Liane Mattson, USFS (Oct. 26, 2007)
Exhibit 60	Letter from Allyn Davis, MSHA, to Desty Dyer, BLM (May 18, 2010)
Exhibit 61	Letter of J. Kiger, Oxbow, to B. Bowles, Colo. Div. of Mining, Reclamation & Safety (Oct. 14, 2011)
Exhibit 62	Letter of J. Kiger, Oxbow to F. Kirby, Office of Surface Mining, (Mar. 15, 2012)
Exhibit 63	Sindicatum Projects, Coal Mine Methane, US: SOLVAY, Wyoming, available at http://www.sindicatum.com/portfolio_item/coal-mine-methane-us-solvay-wyoming/ (last viewed July 2012)
Exhibit 64	Climate Action Reserve website http://www.climateactionreserve.org/how/crt-marketplace/ (last viewed July 2012)
Exhibit 65	Sindicatum Projects, Coal Mine Methane, US: CLIFFS, West Virginia, available at http://www.sindicatum.com/portfolio_item/coal-mine-methane-us-cliffs-west-virginia/ (last viewed July 2012).
Exhibit 65A	Email of A. Worstell, BLM to B. Sharrow, BLM (May 7, 2009 2:11 PM)
Exhibit 65B	Email of Angela Glenn, BLM to D. Nolte, MCC (June 20, 2011 7:30 AM)

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Exhibit 66	P. Franklin, US EPA Coalbed Methane Outreach Program, "Coal Mine Methane Recovery & Utilization in the United States" (Sept. 25, 2007)
Exhibit 67	U.S. Department of Energy, Project Fact Sheet http://fossil.energy.gov/fred/factsheet.jsp?doc=2252&projtitle=LNG%20from%20Coal%20Mine%20Methane%20for%20Industrial%20and%20Transportation%20Applications
Exhibit 68	U.S Department of Energy, Liquefaction of Coal Mine Methane to produce LNG for Industrial and Transportation Applications, http://www.netl.doe.gov/technologies/oil-gas/NaturalGas/Projects_n/TDS/LNG/LNG_40978CoalMineMethane.html (last viewed July 2012)
Exhibit 69	U.S. EPA, The U.S. Government's Methane to Markets Partnership Accomplishments (Oct. 2009)
Exhibit 70	S. Condon, Aspen Skiing Co. goes big in its effort to offset carbon, Aspen Times (June 26, 2012) available at http://www.aspentimes.com/article/20120626/NEWS/120629901 (last viewed July 6, 2012)
Exhibit 71	Letter of Larry Svoboda, EPA, to Thomas Malecek, USFS (Oct. 27, 2010)
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Exhibit 87	BLM, Environmental Assessment, Elk Creek East Tract Coal Lease (June 2011) (excerpts)
Exhibit 88	Ark Land Co., Application to Modify Federal Coal Leases C-1362 and COC-67232 (Jan. 19, 2009)
Exhibit 89	Letter of J. Nichols WildEarth Guardians to GMUG Nat'l Forest (July 9, 2012)
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