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## Western Environmental Law Center

February 8, 2012

*Sent via Overnight Federal Express Delivery (comments and exhibits) and Electronic Mail (comments only)*

August 2012 Lease Sale  
Attn: Barb Sharrow, Field Manager  
U.S. Bureau of Land Management  
Uncompahgre Field Office  
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### **Re: Comments Regarding August 2012 Oil and Gas Lease Sale**

Dear Ms. Sharrow and Ms. Hankins:

The following comments are submitted on behalf of Citizens for a Healthy Community in response to the Bureau of Land Management (“BLM”) Uncompahgre Field Office (“UFO”) nomination of 22 parcels in Gunnison and Delta Counties, Colorado, for sale at the August 2012 Oil and Gas Lease Sale.

Citizens for a Healthy Community (“CHC”) is a grass-roots organization formed in 2010 for the purpose of protecting people and their environment from irresponsible oil and gas development in the Delta County region. CHC’s members and supporters include organic farmers, ranchers, vineyard and winery owners, sportsmen, realtors, and other concerned citizens impacted by oil

and gas development. CHC members have been actively involved in commenting on BLM's oil and gas activities.

As a preliminary matter, we wish to express our appreciation for the recent changes that have resulted from BLM leasing reform policy – namely the greater emphasis that this policy has placed on public engagement and participation.<sup>1</sup> We believe these changes represent a positive step in the decision-making paradigm as it pertains to our public lands. However, we are concerned that these changes may merely be changes in form, not substance. Although BLM, through a January 3, 2012 press release, granted the requested public comment period extension – postponing the comment deadline from January 9, 2012 until February 9, 2012 – BLM UFO's delay in taking this action is problematic. A principal reason that CHC and the general public requested an extension was because the January 9<sup>th</sup> deadline conflicted with the holiday schedule. Granting the extension on January 3<sup>rd</sup> did little to accommodate for this reality, as CHC and members of the North Fork Valley community worked tirelessly over the holidays in anticipation of the January 9<sup>th</sup> deadline. Indeed, their very lives and livelihoods are at stake in this action. BLM's actions therefore did little but intensify concern over BLM's actions and undermine the public's trust in the agency's actions and underlying motives.

Moreover, it is unfortunate that BLM has repeatedly failed to communicate directly with CHC – despite our continued efforts to broach an amiable relationship and improve communication. Responding directly to our December 13, 2011 letter would have been an appreciated first step from BLM in this regard. For example, our letter of December 13, 2011 requested not only an extension of the public comment period to accommodate holiday schedules but, also, that BLM hold a public hearing and prepare an EIS, which to date BLM has failed to acknowledge. BLM has further failed to hold any public outreach, public meeting, or open house to provide the public with supplementary information or to proactively engage with the public and thereby solicit meaningful comments on the subject lease sale – which is particularly galling in the face of such a substantial proposal. Indeed, BLM's only action on this front was the issuance of a press release announcing the proposed August 2012 Lease Sale.

Due to BLM's failure to engage the public on this matter, CHC and other community groups have joined forces in an effort to fill this void. CHC has held community meetings on the proposed lease sale in three North Fork Valley Communities: Hotchkiss (12/19/11), Paonia (1/4/12), and Crawford (1/5/12). Approximately 1,000 citizens attended these three meetings – demonstrating a remarkable interest in this proposal – and virtually all in attendance expressed their opposition to the August 2012 Lease Sale. CHC also held a community hearing in Hotchkiss on January 28, 2012, in which the public had an opportunity to provide documented comments regarding the proposed lease sale.<sup>2</sup> Over five hundred people – representing more than

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<sup>1</sup> See BLM, *Interior Finalizes Onshore Oil and Gas Leasing Reforms*, available at: [http://www.blm.gov/wo/st/en/info/newsroom/2010/may/NR\\_05\\_17\\_2010.html](http://www.blm.gov/wo/st/en/info/newsroom/2010/may/NR_05_17_2010.html) (last visited, Dec. 20, 2011).

<sup>2</sup> A DVD of the event, attached hereto as Exhibit 1.1, includes public comments and parcel specific information that BLM must consider in their NEPA analysis. A written transcript of the event is also provided as Exhibit 1.2.

13 percent of the entire adult population of the North Fork Valley – attended the hearing. Public comments made evident the overwhelming opposition to all 22 parcels in the proposed lease sale.

Despite BLM’s refusal to actively engage CHC or the public on this matter, and in the spirit of the leasing reform policy, CHC wishes to offer the following comments in the hope of assisting BLM UFO in its decision-making with respect to the August 2012 Lease Sale.

## **I. BLM Should Use Its Broad Discretion Not to Lease the Proposed Parcels.**

The BLM UFO should utilize its broad discretion and remove the subject 22 parcels from nomination. Given the proximity of these parcels to the communities of Paonia, Hotchkiss, Crawford and Somerset, the critical water resources serving those communities, as well as the Paonia Reservoir and the North Fork of the Gunnison River, the BLM UFO’s chosen path of opening this area up to oil and gas development will threaten the North Fork Valley’s very foundation and further engender public contempt for the manner in which BLM has chosen to manage our public lands.<sup>3</sup>

BLM has broad discretion – and often the responsibility, though too often ignored – to not lease public lands for minerals development to safeguard other multiple use, environmental, and human health resources and values. *See, e.g., Udall v. Tallman*, 380 U.S. 1 (1965); *Rocky Mountain Oil & Gas Association v. U.S. Forest Service*, 157 F.Supp.2d 1142 (D. Mont. 2000). BLM’s authority to open these 22 parcels to oil and gas development is derived from the Mineral Leasing Act of 1920, 30 U.S.C. § 181 *et seq.* Nowhere does the Mineral Leasing Act (“MLA”) mandate that any particular lands be offered for lease. Rather, the Act states generally that “[a]ll lands subject to disposition under this chapter which are known or believed to contain oil or gas deposits *may* be leased by the Secretary.” 30 U.S.C. § 226(a) (emphasis added). The Ninth Circuit has held that the “permissive word ‘may’ in § 226(a) allows the Secretary to lease such lands, but does not require him to do so... [T]he Secretary has discretion to refuse to issue any lease at all on a given tract.” *Burglin v. Morton*, 527 F.2d 486, 488 (9<sup>th</sup> Cir. 1975). The Supreme Court reached the same conclusion in *Udall v. Tallman*, 380 U.S. 1, 4 (1965), in which the court

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<sup>3</sup> In BLM’s preparation of the yet completed resource management plan (“RMP”) for the UFO, a planning document was prepared to assess community views of BLM-managed lands and management practices. Overwhelmingly, that planning document expressed a desire for public lands to be left open and undeveloped. The Community Assessment provided, in part: “The community assessment gathered input on what people like about their communities and why they choose to live there. The reasons most often cited included recreational opportunities, natural and scenic beauty, proximity to public lands, and the quality of life their communities afford them in terms of a strong sense of community, the availability of quality services, and a family friendly, small town, safe environment.” BLM, *Community Assessment of Uncompahgre Planning Area* (Feb. 2009) at ES-3, (attached as Exhibit 2). *See also* Petition Demanding Moratorium on Oil and Gas Development in the North Fork Valley, (attached as Exhibit 3) (Petition was signed by 3,092 individuals, representing all 50 states and several foreign countries).

declared that the Mineral Leasing Act “left the Secretary discretion to refuse to issue any lease at all on a given tract.” *See also Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1230 (9<sup>th</sup> Cir. 1988) (providing that refusal to issue leases constitutes a “legitimate exercise of the discretion granted to the Interior Secretary”); *McDonald v. Clark*, 771 F.2d 460, 463 (10<sup>th</sup> Cir. 1985) (“While the statute gives the Secretary the authority to lease government lands under oil and gas leases, this power is discretionary rather than mandatory.”); *McTiernan v. Franklin*, 508 F. 2d 885, 887 (10<sup>th</sup> Cir. 1975) (under § 226(a), the government “may refuse to issue any lease at all on a given tract”); *Pease v. Udall*, 332 F.2d 62, 63 (9<sup>th</sup> Cir. 1964) (Mineral Leasing Act “has consistently been construed as leaving to the Secretary, within his discretion, a determination as to what lands are to be leased thereunder”); *Pacific Legal Foundation v. Watt*, 529 F.Supp. 982, 991 n.14 (D. Mont. 1982) (under § 226(a), “the Secretary has discretion either to issue or refuse to issue oil and gas leases”).

Indeed, BLM’s discretion over oil and gas leasing is so great that courts have held that the agency may decide not to allow leasing even after the lands have been offered for lease and a qualified applicant selected. In *McDonald*, the Tenth Circuit Court of Appeals provided, “The fact that land has been offered for lease does not bind the Secretary to actually lease the land, nor is the Secretary bound to lease the land when a qualified applicant has been selected.” *McDonald*, 771 F.2d at 463. The Court continued, saying “the Secretary may withdraw land from leasing at any time before the actual issuance of the lease, even if the offer was filed long before the determination not to lease was made.” *Id.* (citing *Arnold v. Morton*, 529 F.2d 1101, 1106 (9<sup>th</sup> Cir. 1976); *Schraier v. Hickel*, 419 F.2d 663, 665-67 (D.C. Cir. 1969)).

In a recent letter from BLM Colorado State Director, Helen Hankins, to Colorado State Senator, Gail Schwartz, Ms. Hankins provided: “As you know, the Federal [Onshore] Oil and Gas Leasing Reform Act (F[O]OGLRA) of 1987 *requires* the BLM to offer lands nominated or requested by industry or the public for oil and gas leasing provided leasing is an acceptable use of the land as identified in the resource management plan.”<sup>4</sup> This statement is misleading and inaccurate. Nothing in FOOGLRA “requires” BLM to open lands at the behest of the oil and gas industry. The MLA, as amended by FOOGLRA in 1987, 30 U.S.C. § 181 *et seq.*, simply requires BLM to *consider* oil and gas leasing on land consistent with the RMP. As identified above, just because land is identified for leasing doesn’t mean that it must be leased. If review of a potential lease proposed for sale reveals problems, or that other resources and values should be protected, the agency can decide not to lease, period and, in fact, may be duty-bound, pursuant to laws such as FLPMA, to not lease to ensure that other resources and values are protected. For example, in *Marathon Oil Co.*, 139 IBLA 347 (1997), BLM removed parcels from a competitive lease sale for environmental reasons, even after they had been offered for sale pursuant to industry nomination. In that case, the IBLA held that “BLM enjoys considerable discretion to depart from its RMP in any specific case, and it may well be able to justify excluding these parcels from leasing for environmental purposes.” *Id.* at 356. Moreover, a simple search of BLM’s state website demonstrates countless additional examples where BLM has removed parcels from consideration due to site-specific resource concerns and/or public opposition. For example, last year alone in Colorado, many parcels have been removed, deferred or carried over due to

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<sup>4</sup> Letter from Helen Hankins, BLM Colorado State Director, to Gail Schwartz, Colorado State Senator (Jan. 26, 2012) (emphasis added) (attached as Exhibit 4).

ecological and cultural resource concerns. *See, e.g.*, DOI-BLM-CO-110-2011-0056-EA (removing parcels due to concerns with primitive recreation opportunities); DOI-BLM-CO-N040-2011-0075-EA (deferring 2 parcels and 1,600 acres due to ecological concerns); and DOI-BLM-CO-S050-2011-0003-EA (two parcels within the Uncompahgre Field Office were carried over to allow for consultation). This approach is consistent with the practices carried out in other BLM state offices as well. *See, e.g.*, DOI-BLM-EA-MT-M010-2011-0028 (deferring 21 parcels in Montana); DOI-BLM-UT-9100-2011-0005 (deferring 16 parcels in Utah); and DOI-BLM-WY-030-2011-123-EA (deferring parcels in Wyoming because they contained ecologically critical areas). BLM is therefore mistaken to assert – as Ms. Hankins did – that FOOGLRA “requires” them to open lands to oil and gas development once those lands are nominated.

Moreover, the MLA and FOOGLRA do not in any way restrict the factors that BLM may consider when exercising its considerable discretion under § 226(a). Therefore, even if the BLM bases its decision entirely on the public’s overwhelming opposition to natural gas development in this area, it has the authority to do so.<sup>5</sup> For example, BLM’s UFO could determine that it is unreasonable to propose leasing parcel 6197 because this parcel incorporates some of the springs from which the Town of Paonia obtains its domestic water. Notably, this parcel contains several major avalanche chutes descending from the top of one of the North Fork Valley’s most iconic peaks, Mount Lamborn.<sup>6</sup> Indeed, it would be irresponsible for BLM’s UFO to propose these 22 lease parcels for sale without first performing the necessary due diligence and environmental review to determine, on a site-specific basis, whether these lands should be conserved as is.

There is, in addition, little need to sell more leases. According to BLM’s Fiscal Year 2009 data, in Colorado, there are already 5,910 active BLM oil and gas leases totaling 4,920,123 acres, yet less than a third of that area, 1,522,230 acres, is under production.<sup>7</sup> Given this data, it would seem wise for BLM to focus its limited resources on ensuring responsible oil and gas production on existing leases rather than the issuance of ever more leases. It is further incumbent upon BLM to investigate the probability, timeframe and scale of anticipated development in the North Fork Valley within the context of mineral extraction generally.

Based on this expansive authority and discretion, we implore BLM UFO to reconsider its assent to the nomination of the 22 parcels in the North Fork Valley for the August 2012 Oil and Gas Lease Sale, and remove these parcels from consideration.

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<sup>5</sup> CHC has held three public comment forums, in Hotchkiss, Crawford and Paonia, to solicit public comments with regard to the August 2012 Oil and Gas Lease Sale. The comments collected (attached as Exhibit 5), are overwhelmingly in opposition to the proposed lease sale.

<sup>6</sup> *See* Pete Kolbenschlager, *In case you are not yet convinced this is a bad idea, Bureau of Land Management moves to lease Mount Lamborn avalanche chutes for oil and gas drilling* (Jan. 2011) (attached as Exhibit 6).

<sup>7</sup> BLM Public Lands Statistics for Fiscal Year 2009 (attached as Exhibit 7).

## II. NEPA Requires BLM UFO to Take a “Hard Look” at the Environmental Consequences of its Lease Sale Decision.

### A. An Agency fails to take a “hard look” if it predetermines its NEPA analysis.

Notwithstanding our plea to remove the 22 parcels in the August 2012 Lease Sale from nomination, CHC submits the following comments related to BLM’s statutory obligations under NEPA.

On Monday, December 12, 2011, a conference call was held between BLM UFO Field Manager, Barbara Sharrow, and twenty other individuals representing local and regional organizations. During this call, Ms. Sharrow outlined a predetermined timeframe that BLM UFO has adopted for its NEPA analysis related to the August 2012 Lease Sale. This schedule was further reiterated and updated in Ms. Hankins’ previously mentioned letter to Senator Schwartz, as follows:

February 9 .....Public comment period ends  
Early March ...EA released, begin 30-day comment period  
Early April .....Public comment period ends  
May 11 .....Sale notice posted, protest period begins  
June 11 .....Protest deadline  
August 8 .....Lease sale day

Given the breadth and magnitude of impacts that the subject lease sale promises to have on communities in the North Fork Valley, we expect BLM UFO to reevaluate this suggested timeframe in order to fully understand and account for the context and intensity of the myriad impacts that will arise from the proposed development. The current timeframe is problematic because it presupposes preparation of only an Environmental Assessment (“EA”) when a full Environmental Impact Statement (“EIS”) is (as discussed further below) necessary, and presupposes (especially in light of the agency’s view that FOOGLRA “requires” that it sell these leases) that the BLM UFO will in fact go through with the lease sale.

NEPA mandates that an agency “take a ‘hard look’ at the impacts of a proposed action.” *Citizens’ Committee to Save Our Canyons v. Krueger*, 513 F.3d 1169, 1179 (10<sup>th</sup> Cir. 2008) (quoting *Friends of the Bow v. Thompson*, 124 F.3d 1210, 1213 (10<sup>th</sup> Cir.1997)); *see also*, *Morris v. U.S. Nuclear Regulatory Commission*, 598 F.3d 677, 681 (10<sup>th</sup> Cir. 2010) (noting that NEPA “requires ... that an agency give a ‘hard look’ to the environmental impact of any project or action it authorizes”). This examination “must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.” *Forest Guardians v. U.S. Fish and Wildlife Service*, 611 F.3d 692, 712 (10<sup>th</sup> Cir. 2010) (quoting *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9<sup>th</sup> Cir. 2000)); *see also* 40 C.F.R. § 1502.2(g) (“Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.”); *id.* § 1502.5 (“The statement shall be prepared early enough so that it can serve practically as an important contribution to the decision-making process and will not be used to rationalize or justify decisions already made.”).

Indeed, there is a long line of cases that warn agencies against making a predetermined decision with respect to their NEPA analysis. In *Forest Guardians*, the 10<sup>th</sup> Circuit Court of Appeals provided: “[I]f an agency predetermines the NEPA analysis by committing itself to an outcome, the agency likely has failed to take a hard look at the environmental consequences of its actions due to its bias in favor of that outcome and, therefore, has acted arbitrarily and capriciously.” *Forest Guardians*, 611 F.3d at 713 (citing *Davis v. Mineta*, 302 F.3d 1104 (10<sup>th</sup> Cir. 2002)). The 10<sup>th</sup> Circuit further stated that “[w]e [have] held that ... predetermination [under NEPA] resulted in an environmental analysis that was tainted with bias” and was therefore not in compliance with the statute. *Id.* (citing *Davis*, 302 F.3d at 1112–13, 1118–26)).

It is hard to imagine BLM taking the required “hard look” when it consistently defends its poor decision-making through pro-industry rhetoric. For example, BLM consistently falls back on the same statistics on job creation and royalties to validate their otherwise untenable position:

Environmentally responsible oil and gas exploration and development not only helps address our energy needs, it also contributes directly and indirectly to our economy. Oil and gas development in Colorado accounted for 22,912 jobs along the Western Slope in fiscal year 2010. The State of Colorado received more than \$178.6 million in fiscal year 2010 form royalties, rentals, and bonus payments for all federal minerals, including oil, gas and coal.<sup>8</sup>

This biased and one-sided message lacks the objectivity that is required of an agency tasked with maintaining multiple use, sustained yield, and environmental protection as the guiding principles for public land management. *See* Federal Land Policy Management Act (“FLPMA”), 43 U.S.C. § 1701 *et seq.* As an honest mediator in this discussion, BLM should include not only the benefits but also the costs of oil and gas development in its discussion. For example, the costs of oil and gas development techniques and practices should be calculated and incorporated in any BLM discussion with regard to the North Fork Valley, and should include, but is not limited to:

- The value of the organic agricultural products that will be harmed;
- The value of the organic agricultural wages that will be lost;
- The value of North Fork domestic water that is at risk of contamination (calculated by CHC at \$56 million);<sup>9</sup>
- Value of North Fork irrigation water that is at risk of contamination (calculated by CHC at \$163 million);<sup>10</sup>

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<sup>8</sup> *See* Exhibit 4, at 2. *See also* BLM News Release, *BLM Accepts Comments for the August 21012 Oil and Gas Lease Sale for SW Colorado* (undated) (attached as Exhibit 8).

<sup>9</sup> CHC, Monetary Value of North Fork Valley Domestic Water (attached as Exhibit 9).

<sup>10</sup> CHC, Monetary Value of North Fork Valley Irrigation Water (attached as Exhibit 10).

- The costs to municipal, county, and federal roads and infrastructure from increased heavy truck and industrial traffic;
- Health costs incurred by local citizens as a result of increased air pollution and water contamination;
- Real estate losses local residents will incur when their home values plummet;
- The cost to recreation, including hunting, fishing, mountain bike riding, and boating, that will be displaced by oil and gas drilling on the proposed leases.

A cost/benefit analysis that includes a true balancing of interests should be a part of every BLM discussion related to oil and gas development – an approach that would certainly be more consistent with BLM’s federal mandate to act as steward of our public lands.

In the instant case, CHC hopes that BLM UFO is not traveling down the precipitous path of predetermination with regard to the 22 parcels nominated in the August 2012 Lease Sale, and – failing to remove the parcels from nomination – instead chooses to take a meaningful “hard look” at impacts before the lease sale takes place through preparation of an EIS that acknowledges BLM’s authority and discretion not to offer the proposed leases for sale.

**B. Because an irretrievable commitment of resources will occur at the lease sale stage, BLM must consider impacts prior to the sale.**

In the past, BLM UFO has stated its intent to defer NEPA analysis to determine whether significant impacts exist until the application for permit to drill (“APD”) stage. Given the timeline Ms. Sharrow provided, as noted above, we assume BLM UFO will adopt the same approach here.

BLM UFO has previously relied on *Park County Resource Council v. U.S. Department of Agriculture*, 817 F.2d 609 (10<sup>th</sup> Cir. 1987), to support its contention that site-specific NEPA analysis is not required until the APD stage. In *Park County*, the Court provided that “*with appropriate lease stipulations* aimed at protecting the environment, lease issuance itself, essentially a paper transaction, does not *usually* require prior preparation of an EIS.” *Park County*, 817 F.2d at 621 (emphasis added). *Park County*, however, does not stand for the proposition – as BLM has implied – that there is a categorical rule exempting BLM UFO from ever performing site-specific analysis at the lease sale stage. Indeed, the 9<sup>th</sup> Circuit has consistently held that the sale of oil and gas leases is an irretrievable commitment of resources for which an EIS must be prepared. *See, e.g., Conner v. Burford*, 848 F.2d 1441 (9th Cir.1988); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1227 (9th Cir.1988). Further, *Park County* cannot be understood in a vacuum; as the Tenth Circuit more recently explained:

[T]here is no bright line rule that site-specific analysis may wait until the APD stage. Instead, the inquiry is necessarily contextual. Looking to the standards set out by regulation and by statute, assessment of all ‘reasonably foreseeable’ impacts must occur at the earliest practicable point, and must take place before an

‘irretrievable commitment of resources’ is made. 42 U.S.C. § 4332(2)(C)(v); *Pennaco Energy v. U.S. Dept. of Interior*, 377 F.3d 1147, 1160 (10<sup>th</sup> Cir. 2004); *Kern v. U.S. Bureau of Land Management*, 284 F.3d 1062, 1072 (9<sup>th</sup> Cir. 2002); 40 C.F.R. §§ 1501.2, 1502.22. Each of these inquiries is tied to the existing environmental circumstances, not to the formalities of agency procedures. Thus, applying them necessarily requires a fact-specific inquiry.

*New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 717-18 (10<sup>th</sup> Cir. 2009). The Court has unambiguously stated that “[t]he operative inquiry [is] simply whether all foreseeable impacts of leasing [are] taken into account before leasing [can] proceed.” *Id.* at 717.

Indeed, in *Pennaco Energy*, the Court found: “A plan-level EIS for the area failed to address the possibility of CBM development, and a later EIS was prepared only after the leasing stage, and thus ‘did not consider whether leases should have been issued in the first place.’” *New Mexico*, 565 F. 3d. at 717 (citing *Pennaco Energy*, 377 F.3d at 1152). Moreover, the Court held that “[b]ecause the issuance of leases gave lessees a right to surface use, the failure to analyze CBM development impacts before the leasing stage foreclosed NEPA analysis from affecting the agency’s decision.” *Id.* (citing *Pennaco Energy*, 377 F.3d at 1160).

Unlike *Park County* where site-specific impacts were difficult to anticipate, here, like in *Pennaco Energy*, the impacts of leasing these 22 parcels in the North Fork Valley are reasonably foreseeable: other lands in this area – which includes Delta, Gunnison and Garfield Counties – have already been leased, and development has already occurred. Thus, as in *Pennaco Energy*, an EIS assessing the specific effects of oil and gas development is required before the leasing stage.

Moreover, irrespective of BLM’s ultimate conclusion with regard to stipulations, an irretrievable commitment of resources will be conferred at the lease sale stage; oil and gas leases confer “the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold.” 40 C.F.R. § 3101.1-2; *Sierra Club v. Hodel*, 848 F.2d 1068, 1093 (10<sup>th</sup> Cir. 1988) (agencies are to perform hard look NEPA analysis “before committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values”). In fact, the Uncompahgre Basin RMP/EIS (“1989 RMP”) (attached as Exhibit 11), and discussed further below, does not contain a general NSO stipulation that can be applied by BLM to prevent surface occupancy, which reinforces the notion that an irretrievable commitment of resources will occur at the lease sale stage. Yet, even if a parcel were to contain a NSO stipulation, the mere issuance of the lease confers a right to the resources thereunder. Whether through directional drilling or some other method of extraction, the leaseholder has an exercisable interest as soon as the lease is conferred, which it then relies upon in proceeding with its development plan. Therefore, significant environmental impacts, based on those lease rights, may also occur once a lease is issued. Although it is true that “some or all of the environmental consequences of oil and gas development may be mitigated through lease stipulations, it is equally true that the purpose of NEPA is to examine the foreseeable environmental consequences of a range of alternatives *prior* to taking an action that cannot be undone.” *Montana Wilderness Ass’n v. Fry*, 310 F.Supp.2d 1127, 1145 (D.Mont., 2004) (citation omitted) (emphasis added); 40 C.F.R. § 1501.2.

If BLM fails to perform site-specific analysis at the lease stage, BLM's authority will thereafter be limited to imposing mitigation measures consistent with the terms of the lease. In other words, BLM UFO will not be able to impose conditions inconsistent with the lease terms and it cannot deny the developer the right to drill altogether. Consequently, if BLM discovers significant impacts at the APD stage, it may no longer be able to prevent them. In a recently released case from the Ninth Circuit, *Northern Plains Resource Council v. Surface Transportation Board*, --- F.3d ---, 2011 WL 6826409, 14 (9<sup>th</sup> Cir. 2011), the court provided: "In a way, reliance on mitigation measures presupposes approval. It assumes that – regardless of what effects construction may have on resources – there are mitigation measures that might counteract the effect without first understanding the extent of the problem. This is inconsistent with what NEPA requires."

Moreover, a Government Accountability Office report showed that the BLM has used categorical exclusions to approve 28 percent of APDs.<sup>11</sup> As such, it is very possible that the detailed review BLM has previously asserted will occur at the APD stage may in fact fall by the wayside.

Because BLM is irretrievably committing resources at the lease sale stage, it must consider the impacts of its decision to lease parcels before it can confer public resources to a private developer in a lease.

**C. The preparation of an Environmental Impact Statement ("EIS") is required prior to the issuance of the lease.**

First and foremost, pursuant to Council on Environmental Quality ("CEQ") regulations, 40 C.F.R. § 1506.1(c):

While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:

- (1) Is justified independently of the program;
- (2) Is itself accompanied by an adequate environmental impact statement;  
and
- (3) Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

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<sup>11</sup> Government Accountability Office, Energy Policy Act of 2005 Greater Clarity Needed to Address Concerns with Categorical Exclusions for Oil and Gas Development under Section 390 of the Act (September 2009) (attached as Exhibit 12).

Accordingly, the BLM UFO should not proceed with the August 2012 Lease Sale, or any other major Federal action, until it completes an updated Resource Management Plan (“RMP”) for the Uncompahgre Field Office. Revision of the 1989 RMP, as further explained below, is fundamental to the public land use decision-making process in the UFO, and in its current form is woefully incapable of performing this function. If the BLM UFO decides to proceed with the ill-advised August 2012 Lease Sale, then it must satisfy the requirements of § 1506.1(c), which includes the preparation of an EIS.

Independent of the aforementioned CEQ regulation, an EIS is warranted. As the Tenth Circuit has explained, “[i]f the agency determines that its proposed action *may* ‘significantly affect’ the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS.” *Airport Neighbors Alliance v. U.S.*, 90 F.3d 426, 429 (10<sup>th</sup> Cir. 1996) (citation omitted) (emphasis added). Similarly, according to the Ninth Circuit:

We have held that an EIS *must* be prepared if ‘substantial questions are raised as to whether a project ... *may* cause significant degradation to some human environmental factor.’ To trigger this requirement a ‘plaintiff need not show that significant effects *will in fact occur*,’ [but instead] raising ‘substantial questions whether a project may have a significant effect’ is sufficient.

*Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1149-50 (9<sup>th</sup> Cir. 1998) (citations omitted) (emphasis original).

If BLM UFO “decides not to prepare an EIS, ‘it must put forth a convincing statement of reasons’ that explains why the project will impact the environment no more than insignificantly. This account proves crucial to evaluating whether the [agency] took the requisite ‘hard look.’” *Ocean Advoc. v. U.S. Army Corps of Engrs.*, 402 F.3d 846, 864 (9<sup>th</sup> Cir. 2005). In the instant case, however, the BLM UFO would be hard pressed to reach any conclusion other than that 22 parcels and approximately 30,000 acres of development in this area *may* result in significant degradation.

In the past, BLM UFO has suggested that it can avoid preparation of any site-specific analysis from oil and gas development because impacts are covered under the 1989 RMP, citing an IBLA decision which provided: “BLM is not required to undertake a site-specific environmental review prior to issuing an oil and gas lease when it previously analyzed the environmental consequences of leasing the land...” *Colorado Environmental Coalition et.al.*, 149 IBLA154 (1999).

This practice, known as “Tiering,” is described in CEQ regulations at 40 C.F.R. § 1508.28.

“Tiering” refers to the coverage of general matters in broader environmental impact statements ... with subsequent narrower statements or environmental analyses ... incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

CEQ regulations further provide that “Tiering is appropriate when the sequence of statements or

analyses is:”

(a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.

(b) From an environmental impact statement on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.

*Id.* In this case, based on the aforementioned standard, “tiering” to the 1989 RMP is not appropriate. The 1989 RMP contains very little analysis of oil and gas drilling in the Uncompahgre area generally, much less any analysis of the impacts that could be caused by drilling in this particular area. 1989 RMP at 28, 31. The 1989 RMP, accompanying EIS, and technical report for oil and gas simply did not analyze the site-specific impacts of gas development for the parcels nominated in the August 2012 Lease Sale. The documents did little more than describe the process under which oil and gas development can take place and provided a far too general and conclusory a basis for justifying the execution of oil and gas leases. Additionally, these documents did not foresee the extent of gas development that is currently taking place elsewhere in the region, nor did these documents analyze the effects of fracking.

Indeed, our in-depth review of the 1989 RMP reveals that no analysis of the direct or cumulative impacts of oil and gas development was ever conducted. Moreover, the terms hydro-fracturing, hydraulic fracturing, fracking, fracking fluids, and fracking chemicals are not used or discussed let alone analyzed anywhere in the RMP. It is clear that BLM did not anticipate the pace or scale of oil and gas leasing and development that is now taking place, and therefore, did not analyze the impacts of fracking which are now before our community.

Further, BLM’s 1987 Draft Technical Report for Oil and Gas, and Geothermal Resources for the Uncompahgre Basin Resource Area, Resource Management Plan, and Environmental Impact Statement (“1987 Technical Report”) (attached as Exhibit 13) – which BLM UFO has also pointed to in justifying its lack of upfront NEPA analysis – provides little analysis of impacts, and no analysis of the cumulative impacts of oil and gas development. This report failed to analyze impacts from oil and gas development on climate change and greenhouse gases, or the potential for surface and groundwater contamination from fracking. Again, the terms hydraulic fracturing, hydro-fracturing, fracking, fracking fluids, or fracking chemicals do not appear anywhere in this report. Moreover, the single paragraph that obliquely refers to fracking does not describe the process industry employs today, including the well-documented controversy and uncertainties involved in fracking, nor does it analyze the impacts to the environment that result from this process. *See, e.g.*, 1987 Technical Report, at 9 (referring to “formation stimulation that usually involves fluid fracture”).

The apparent reason for such little analysis of the environmental impacts from oil and gas development in this report is because production was anticipated to be minimal throughout the life of the RMP. For instance, the Technical Report provides:

The reasonable foreseeable level of operations for the planning area during the *next ten to fifteen years* is anticipated to be three to ten APDs per year. These operations would result in a maximum of 30 acres of surface disturbance and three seismic lines annually. No production facilities would be developed. The probability for production or pipeline facilities is considered low given the past and present trends within the planning area for oil and gas and geothermal exploration and development.

The analysis of this production level will not include spacing requirements or other detailed analysis specified in Information Bulletin WO-84-261 *as the probability of oil and gas production is so minimal.*

1987 Technical Report, at 10-11 (emphasis added). This projection is woefully outdated. For example, the BLM UFO is already considering, separate from this lease sale, a 150-well development (in which, to date, BLM has failed to produce and EA or EIS) and a 16-well development. *See* Environmental Assessment No. CO-150-2008-35-EA (2008) (“16-well EA”) (*see infra* p. 40, attached as Exhibit 57).

Additionally, the 1987 Technical Report unambiguously suggests that any analysis contained therein is inherently limited in its temporal scope – providing that its evaluation of projected development is limited to “the next ten to fifteen years.” *Id.* Indeed, it has now been 25 years since the reports release, well beyond the period where its findings are of any utility. Put simply, BLM’s analysis is stale, outdated, and too general and conclusory to justify a lease sale.

A thorough review of the FEIS, contained in the 1989 RMP, finds that BLM has failed to analyze the following direct, indirect, and cumulative impacts:

- Impacts of hydraulic fracturing specifically or drilling generally;
- Impacts of fracking chemicals spills;
- Impacts of fracking chemicals entering the environment;
- Impacts of hydraulic fracturing and drilling (including wellpad and other construction) generally on water quality;
- Impacts of hydraulic fracturing on air quality;
- Impacts of oil and gas development on greenhouse gas emissions and climate change;
- Impacts of the increase in the quantity of new roads that will be constructed to access future oil and gas development;

- Impacts of new road construction on the community;
- Impacts from oil and gas development on social and/or cultural values in the community;
- Economic impacts that oil and gas development will have on agriculture, ranching, recreation, and organic food production;
- Impacts from converting a rural, predominantly agricultural community into an industrial zone for oil and gas development; and
- Impacts of oil and gas development on viewsheds.

As also noted in other documents previously cited by BLM UFO, the terms hydro-fracturing, hydraulic fracturing, fracking, fracking fluids, and fracking chemicals are not used or discussed anywhere in the EIS.

As evidenced from any thorough review of the documents currently guiding decision-making in the UFO, analysis of the direct and cumulative impacts of oil and gas development is deficient, out-of-date, and out-of-touch with the oil and gas industry of 2012. The 1989 RMP, 1987 Technical Report, and FEIS all fail to contain any analysis of impacts from oil and gas development and fracking – contrary to what BLM has claimed in its evasion of the hard look mandated under NEPA. Indeed, the August 2012 Oil and Gas Lease Sale represents the fourth lease sale in the past two years – each of which BLM has erroneously claimed it does not need to prepare an EIS for due to the fact that the 1989 RMP already analyzed the impacts.

BLM is required to consider the impacts of development on the 22 nominated parcels at the time the right to such development is conferred: the lease stage. This lease stage analysis must conduct an independent review of the lease sale to determine whether the sale’s context or intensity compel production of an EIS, regardless of what the agency may or may not have found in the 1980s. As further established below, because the development from the August 2012 Lease Sale *may significantly affect the environment* – and because BLM UFO cannot “tier” to the 1989 RMP or any other document – BLM must prepare an EIS prior to the subject lease sale.

**D. BLM must evaluate the full range of possible impacts for both “context” and “intensity” prior to the scheduled August 2012 lease sale.**

“NEPA promotes its sweeping commitment to ‘prevent or eliminate damage to the environment and biosphere’ by focusing Government and public attention on the environmental effects of proposed agency action.” *Marsh v. Or. Nat. Resources Council*, 490 U.S. 360, 371 (1989). NEPA achieves this focus through “action forcing procedures ... requir[ing] that agencies take a *hard look* at environmental consequences.” *Robertson*, 490 U.S. 332, 350 (citations omitted) (emphasis added). These “environmental consequences” include direct, indirect, and cumulative impacts. 40 C.F.R. §§ 1508.7, 1508.8; *Custer Co. Action Assn. v. Garvey*, 256 F.3d 1024, 1035 (10<sup>th</sup> Cir. 2001). NEPA’s hard look should provide an analysis of impacts that is pragmatic and useful to the decisionmaker and the public. *Nat. Resources Def. Council v. Hodel*, 865 F.2d 288,

299 (D.C. Cir. 1988) (hard look premised on providing “analysis useful to a decisionmaker in deciding whether, or how, to alter [a project] to lessen cumulative environmental impacts”). The hard look should thus be calibrated to inform the “heart” of the NEPA process – BLM’s alternatives. 40 C.F.R. § 1502.14; *Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm.*, 449 F.2d 1109, 1128 (D.C. Cir. 1971) (“Clearly, it is pointless to “consider” environmental costs without also seriously considering action to avoid them”).

Any subsequent “hard look” at impacts from the August 2012 lease sale should include a range of alternatives with varying degrees of environmental protections, and which further analyze stipulations placed on each of the 22 parcels. These alternatives should be consistent with comments provided herein, and include a “no action” alternative that would forbid the sale of the nominated parcels. We also request that the agency specifically consider an alternative that would withdraw these mineral resources from operation of the public lands laws, including the Mineral Leasing Act, and that would remove these resources from their availability for lease or other extractive activity. *See* 43 U.S.C. §§ 1712, 1714. After BLM prepares a draft NEPA analysis, we reserve our right to recommend additional alternatives to address impacts disclosed by that analysis.

In any event, to make its threshold determination with respect to the significance of impacts, BLM must evaluate two factors: “context” and “intensity.” 40 C.F.R. § 1508.27. “Either of these factors may be sufficient to require preparation of an EIS in appropriate circumstances.” *Natl. Parks & Conserv. Assn. v. Babbitt*, 241 F.3d 722, 731 (9<sup>th</sup> Cir. 2001). Context “means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality” and “varies with the setting of the proposed action.” *Id.* § 1508.27(a). Intensity “refers to the severity of the impact” and is determined by looking at several factors, including, *inter alia*, the “highly controversial” nature of the environmental impacts; the “degree to which the possible effects are ... highly uncertain or involve unique or unknown risks;” whether the action sets “precedent for future actions” or “represents a decision in principle about a future consideration;” or “is related to other actions with individually insignificant but cumulatively significant impacts.” *Id.* §§ 1508.27(b)(4)-(7).

**i. Significant impacts from hydraulic fracturing must be considered prior to the lease sale.**

The potential impacts that may result from hydraulic fracturing (“fracking”) are significant, and include impacts to water quality and supply, impacts to habitat and wildlife, as well as impacts on greenhouse gas emissions and air quality.<sup>12</sup> The New York Times recently uncovered a 1987

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<sup>12</sup> *See, e.g.*, National Wildlife Federation, *No More Drilling in the Dark: Exposing the Hazards of Natural Gas Production and Protecting America’s Drinking Water and Wildlife Habitats* (2011), available at: <http://www.nwf.org/News-and-Magazines/Media-Center/Reports/Archive/2011/No-More-Drilling-in-the-Dark.aspx> (last visited Dec. 20, 2011) (attached as Exhibit 14); *see also* United States Forest Service, Chloride Concentration Gradients in Tank-Stored Hydraulic Fracturing Fluids Following Flowback (Nov. 2010), available at: <http://nrs.fs.fed.us/pubs/38533/> (last visited Dec. 20, 2011) (attached as Exhibit 15).

U.S. Environmental Protection Agency (“EPA”) report to Congress which found, among other things, that fracking can cause groundwater contamination, and cites as an example a case where hydraulic fracturing fluids contaminated a water well in West Virginia.<sup>13</sup> The EPA report was further summarized and reviewed in an Environmental Working Group report.<sup>14</sup>

Fracking fluid is a conglomeration of many highly toxic chemicals and compounds. The Endocrine Disruption Exchange (TEDX) has documented nearly 1,000 products energy companies inject into the ground in the process of extracting natural gas. Many of these products contain chemicals that are harmful to human health. According to TEDX:

In the 980 products identified. . .[for use during natural gas operations], there were a total of 649 chemicals. Specific chemical names and CAS numbers could not be determined for 286 (44%) of the chemicals, therefore, the health effects summary is based on the remaining 362 chemicals with CAS numbers. . .Over 78% of the chemicals are associated with skin, eye or sensory organ effects, respiratory effects, and gastrointestinal or liver effects. The brain and nervous system can be harmed by 55% of the chemicals. These four health effect categories. . .are likely to appear immediately or soon after exposure. They include symptoms such as burning eyes, rashes, coughs, sore throats, asthma-like effects, nausea, vomiting, headaches, dizziness, tremors, and convulsions. Other effects, including cancer, organ damage, and harm to the endocrine system, may not appear for months or years later. Between 22% and 47% of the chemicals were associated with these possibly longer-term health effects. Forty-eight percent of the chemicals have health effects in the category labeled ‘Other’. The ‘Other’ category includes such effects as changes in weight, or effects on teeth or bones, for example, *but the most often cited effect in this category is the ability of the chemical to cause death.*<sup>15</sup> (emphasis added)

A Congressional Report issued in April 2011 reveals that energy companies have injected more than 30 million gallons of diesel fuel or diesel mixed with other fluids into the ground

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<sup>13</sup> See U.S. Environmental Protection Agency, Report to Congress, *Management of Wastes from the Exploration, Development, and Production of Crude Oil, Natural Gas, and Geothermal Energy* (Dec. 1987), at Ch. IV, Damages Caused by Oil and Gas Operations (attached as Exhibit 16); see also Drilling Down, *Documents: A Case of Fracking Related Contamination*, THE NEW YORK TIMES ONLINE, available at: <http://www.nytimes.com/interactive/us/drilling-down-documents-7.html#document/p1/a27935> (last visited Dec. 20, 2011).

<sup>14</sup> See Environmental Working Group, *Cracks in the Façade: 25 Years ago, EPA Linked “Fracking” to Contamination* (Aug. 2011), available at: <http://www.ewg.org/reports/cracks-in-the-facade> (last visited Dec. 20, 2011) (attached as Exhibit 17).

<sup>15</sup> The Endocrine Disruption Exchange. Undated. *Chemicals In Natural Gas Operations: Health Effects Spreadsheet and Summary*, available at: <http://www.endocrinedisruption.com/chemicals.multistate.php> (last visited Dec. 20, 2011) (emphasis added) (summary attached as Exhibit 18).

nationwide in the process of fracking to extract natural gas between 2005 and 2009.<sup>16</sup> In Colorado, 1.3 million gallons of fluids containing diesel fuel was used in fracking natural gas wells.<sup>17</sup> The EPA has stated that “the use of diesel fuel in fracturing fluids poses the greatest threat” to underground sources of drinking water.<sup>18</sup> According to Congresswoman Diana DeGette of Colorado, fracking with diesel fuel was done without permits in apparent violation of the Safe Drinking Water Act.<sup>19</sup>

Earlier this year, a former staffer responsible for investigating and managing groundwater contamination for New York State warned that allowing the controversial hydraulic fracturing practices would lead to contamination of the state’s aquifers and poison its drinking water. In staffer Paul Hetzler’s letter to an upstate New York newspaper, he provided:

I’m familiar with the fate and transport of contaminants in fractured media, and let me be clear: hydraulic fracturing as it’s practiced today will contaminate our aquifers.

Not *might* contaminate our aquifers. Hydraulic fracturing *will* contaminate New York’s aquifers. If you were looking for a way to poison the drinking water

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<sup>16</sup> U.S. CONGRESS, HOUSE OF REPRESENTATIVES, COMMITTEE ON ENERGY AND COMMERCE, *Chemicals Used in Hydraulic Fracturing* (April 2011), at 10 (attached as Exhibit 19); *see also* Memorandum from Chairman Henry A. Waxman and Subcommittee Chairman Edward J. Markey, to Committee on Energy and Commerce, Examining the Potential Impact of Hydraulic Fracturing (Feb. 28, 2010) (attached as Exhibit 20).

<sup>17</sup> Karen Frantz, *States probe use of diesel fuel*, DURANGO HERALD, February 5, 2011, available at: <http://www.durangoherald.com/article/20110206/NEWS01/702069922/-1/s> (last visited Dec. 20, 2011).

<sup>18</sup> David O. Williams, *U.S. House probe alleges Halliburton, others illegally used diesel in gas fracking*, COLORADO INDEPENDENT, February 1, 2011, available at: <http://coloradoindependent.com/73593/u-s-house-probe-alleges-halliburton-others-illegally-used-diesel-in-gas-fracking> (last visited Dec. 20, 2011).

<sup>19</sup> Letter from U.S. CONGRESS, HOUSE OF REPRESENTATIVES, COMMITTEE ON ENERGY AND COMMERCE, Representatives Henry A. Waxman, Edward J. Markey, & Diana DeGette, to Lisa Jackson, Administrator, U.S. ENVIRONMENTAL PROTECTION AGENCY (Jan. 31, 2011), available at: [http://degette.house.gov/index.php?option=com\\_content&view=article&id=1048:energy-a-commerce-committee-fracking-investigation-reveals-millions-of-gallons-of-diesel-fuel-injected-into-ground-across-us&catid=76:press-releases-&Itemid=227](http://degette.house.gov/index.php?option=com_content&view=article&id=1048:energy-a-commerce-committee-fracking-investigation-reveals-millions-of-gallons-of-diesel-fuel-injected-into-ground-across-us&catid=76:press-releases-&Itemid=227) (last visited Dec. 20, 2011) (attached as Exhibit 21); *see also* Environment News Service, *Toxic Diesel Fuel Used Without Permits in Fracking Operations*, February 4, 2011, available at: <http://www.ens-newswire.com/ens/feb2011/2011-02-04-092.html> (last visited Dec. 20, 2011).

supply, here in the north-east you couldn't find a more chillingly effective and thorough method of doing so than with hydraulic fracturing.<sup>20</sup>

Despite the energy industry's explanation that a thick layer of bedrock safely separates the gas-containing rock layer being fractured from ground-water used for drinking and surface water sources, evidence is emerging which warns that contaminants from gas wells are making their way into groundwater. Evidence suggesting contaminants from drilling operations have migrated towards the surface include:

- In March 2004, gas was discovered bubbling up in West Divide Creek and a few nearby ponds in Garfield County. The Colorado Oil and Gas Conservation Commission ("COGCC") took samples of the water and discovered they contained benzene, toluene, and m- & p-xylenes at concentrations of 99, 100, and 17 micrograms per liter (mg/l), respectively. This indicated that the gas seeping into West Divide Creek probably was not biogenic methane gas (gas made by the decomposition of organic matter by methanotrophic bacteria), but rather thermogenic gas. Further testing indicated that the gas seeping into West Divide Creek was thermogenic gas from the Williams Fork Formation where EnCana had been drilling for natural gas.<sup>21</sup> EnCana was subsequently fined \$371,000 as a result of contaminating West Divide Creek.
- The COGCC investigated complaints from Weld County, Colorado that domestic water wells were allegedly contaminated from oil and gas development. The COGCC concluded after investigation that the Ellsworth's well contained a mixture of biogenic and thermogenic methane (from gas drilling operations) that was in part attributable to oil and gas development. Ms. Ellsworth and the operator reached a settlement in that case.<sup>22</sup>
- In 2007, EPA hydrologists sampled a pristine drinking water aquifer under the Jonah Well Field near Pinedale, Wyoming. They found high levels of benzene, a known carcinogen, in 3 wells and low levels of hydrocarbons in an additional 82 wells (out of the 163 wells

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<sup>20</sup> Karen McVeigh, *Damning New Letter from NY State Insider: 'Hydraulic Fracturing as It's Practiced Today Will Contaminate Our Aquifers,'* THE GUARDIAN, January 6, 2012, available at: [http://www.alternet.org/water/153684/damning\\_new\\_letter\\_from\\_ny\\_state\\_insider%3A\\_%27hydraulic\\_fracturing\\_as\\_it%27s\\_practiced\\_today\\_will\\_contaminate\\_our\\_aquifers%27/](http://www.alternet.org/water/153684/damning_new_letter_from_ny_state_insider%3A_%27hydraulic_fracturing_as_it%27s_practiced_today_will_contaminate_our_aquifers%27/) (last visited January 11, 2012).

<sup>21</sup> Colorado Oil and Gas Conservation Commission, *Mamm Creek Gas Field - West Divide Creek Gas Seep – April 14, 2004 Update* (2004), available at: [http://cogcc.state.co.us/Library/PiceanceBasin/WestDivide4\\_14\\_04summary.htm](http://cogcc.state.co.us/Library/PiceanceBasin/WestDivide4_14_04summary.htm) (last visited Dec. 20, 2011); see also Margaret Ash, Environmental Protection Supervisor, Colorado Oil and Gas Conservation Commission, *Investigation into Complaint of New Gas Seep, West Divide Creek, 2007-2008* (attached as Exhibit 22).

<sup>22</sup> Letter from David Neslin, Director, Colorado Oil and Gas Conservation Commission, to Mr. and Mrs. Ellsworth (August 7, 2009) (attached as Exhibit 23).

sampled).<sup>23</sup> These contaminated wells are located in an area stretching across 28 miles in an undisturbed landscape in which the only industry that exists is natural gas extraction.

- In Pavillion, Wyoming, EPA found 11 of 39 water samples collected from domestic wells were contaminated with chemicals linked to local natural gas fracking operations. The EPA found arsenic, methane gas, diesel-fuel-like compounds and metals including copper and vanadium. Of particular concern were compounds called adamantanes – a natural hydrocarbon found in natural gas – and a little-known chemical called 2-butoxyethanol phosphate, or 2-BEp. 2-BEp is closely related to 2-BE, a substance known to be used in fracking fluids.<sup>24</sup>
- Pennsylvania state regulators have uncovered more than 50 cases where methane and other contaminants have exploded out of wells or leaked underground into drinking water supplies.

Known and suspected adverse effects of drilling operations include:

- Garfield County, Colorado, Commissioners recently expressed their health and safety concerns regarding natural gas drilling by stating in a legal filing that, “No agency... can guarantee Garfield County residents that exposures to oil and gas emissions will not produce illness or latent effects, including death.” They cited the cases of three people – Chris Mobaldi, Verna Wilson, and Jose Lara – who died after suffering from drilling-related illnesses in Garfield County.<sup>25</sup>
- In April 2008, a nurse at a hospital in Durango, Colorado, became critically ill and almost died of organ failure as a result of second-hand chemical exposure acquired while treating a drill rig worker who had fracking fluid on his clothes.<sup>26</sup>
- In Texas, which now has approximately 93,000 natural-gas wells, up from around 58,000 a dozen years ago, a hospital system in the six counties with some of the heaviest drilling

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<sup>23</sup> BLM Wyoming News Release, *BLM, Wyoming DEQ Require Test of Water Wells Within the Pinedale Anticline and Jonah Fields* (April 26, 2007), available at:

[http://www.blm.gov/wy/st/en/info/news\\_room/2007/04/26pfo-DEQ-BLMwatertests.html](http://www.blm.gov/wy/st/en/info/news_room/2007/04/26pfo-DEQ-BLMwatertests.html) (last visited Jan. 29, 2012).

<sup>24</sup> See Exhibit 23.

<sup>25</sup> David O. Williams, *GarCo officials blast state gas drilling rules in case requesting more well density*, THE COLORADO INDEPENDENT, January 19, 2011, available at:

<http://coloradoindependent.com/72246/garco-officials-blast-state-gas-drilling-rules-in-case-requesting-more-well-density> (last visited Jan. 29, 2012).

<sup>26</sup> Eric Frankowski, *Gas industry secrets and a nurse's story*, HIGH COUNTRY NEWS, July 28, 2008, available at: <http://www.hcn.org/wotr/gas-industry-secrets-and-a-nurses-story> (last visited Jan. 29, 2012).

reported in 2010 a 25 percent asthma rate for young children, more than three times the state rate of about 7 percent.<sup>27</sup>

- A house in Bainbridge, Ohio exploded on November 15, 2007. The Ohio Department of Natural Resources attributed the explosion to a methane leak from a nearby hydraulic fractured well. The faulty cement casing of the well developed a crack allowing methane to seep underground and fill the couple's basement.<sup>28</sup>

Abrahm Lustgarten, an investigative reporter with ProPublica who has won the George Polk Award for Environmental Reporting for his work on the dangers of natural gas drilling writes:

Dennis Coleman, a leading international geologist and expert on tracking underground migration, says more data must be collected before anyone can say for sure that drilling contaminants have made their way to water or that fracturing is to blame. But Coleman also says there's no reason to think it can't happen. Coleman's Illinois-based company, Isotech Laboratories, has both the government and the oil and gas industry as clients. He says he has seen methane gas seep underground for more than seven miles from its source. If the methane can seep, the theory goes, so can the fluids.<sup>29</sup>

However, perhaps the most thorough evidence of groundwater contamination from hydraulic fracturing is found in a newly released EPA draft report investigating ground water contamination near Pavillion, Wyoming ("Pavillion Report").<sup>30</sup> Among its findings, the Pavillion Report provides:

Elevated levels of dissolved methane in domestic wells generally increase in those wells in proximity to gas production wells. Pavillion Report, at xiii.

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<sup>27</sup> Ian Urbina, *Regulations Lax as Gas Well's Tainted Waters Hits Rivers*, THE NEW YORK TIMES, February 26, 2011, available at: <http://www.nytimes.com/2011/02/27/us/27gas.html?pagewanted=all> (last visited January 29, 2012).

<sup>28</sup> See Ohio Department of Natural Resources, Division of Mineral Resources Management, *Report on the Investigation of the Natural Gas Invasion of Aquifers in Bainbridge Township of Geauga County, Ohio* (September 1, 2008) (attached as Exhibit 24); see also Joan Demirjian, *Insurance company [sues] driller over home explosion*, CHAGRIN VALLEY TIMES, January 7, 2010, available at: <http://www.chagrivalleytimes.com/NC/0/1571.html> (last visited Jan. 15 2012).

<sup>29</sup> Abrahm Lustgarten, *Hydrofracked? One Man's Mystery Leads to a Backlash Against Natural Gas Drilling*, PROPUBLICA, February 25, 2011, available at: <http://www.propublica.org/article/hydrofracked-one-mans-mystery-leads-to-a-backlash-against-natural-gas-drill/single> (last visited Dec. 20, 2011).

<sup>30</sup> EPA Draft Report, *Investigation of Ground Water Contamination Near, Pavillion, Wyoming* (Dec. 2011) (attached as Exhibit 25).

Detection of high concentrations of benzene, xylenes, gasoline range organics, diesel range organics, and total purgeable hydrocarbons in ground water samples from shallow monitoring wells near pits indicates that pits are a source of shallow ground water contamination in the area of investigation. Pits were used for disposal of drilling cuttings, flowback, and produced water. There are at least 33 pits in the area of investigation. When considered separately, pits represent potential source terms for localized ground water plumes of unknown extent. When considered as whole they represent potential broader contamination of shallow ground water. *Id.* at 33 (emphasis added).

The explanation best fitting the data for the deep monitoring wells is that constituents associated with hydraulic fracturing have been released into the Wind River drinking water aquifer at depths above the current production zone. *Id.* (emphasis added).

Although some natural migration of gas would be expected above a gas field such as Pavillion, data suggest that enhanced migration of gas has occurred to ground water at depths used for domestic water supply and to domestic wells. *Id.* at 37 (emphasis added).

A lines of reasoning approach utilized at this site best supports an explanation that inorganic and organic constituents associated with hydraulic fracturing have contaminated ground water at and below the depth used for domestic water supply.... A lines of evidence approach also indicates that gas production activities have likely enhanced gas migration at and below depths used for domestic water supply and to domestic wells in the area of investigation. *Id.* at 39 (emphasis added).

Although the Pavillion Report is currently released as a “draft,” the EPA has shared preliminary data with, and obtained feedback from, Wyoming state officials, EnCana, Tribes, and Pavillion residents, prior to release. Even in draft form, the Pavillion Report and its troubling findings – as well as other evidence of fracking related contamination from around the country – satisfies the low threshold for requiring the preparation of an EIS before the August 2012 Lease Sale.

In the past, BLM UFO has been dismissive of possible impacts to water quality from hydraulic fracturing. However, given the weight of both new and old evidence documenting the risk of water contamination from gas drilling across the country, BLM’s approach is becoming increasingly untenable, in particular given the absence of any scientific analysis that conclusively finds that these documented problems do not exist in the area of the proposed lease sale. Indeed, even an industry report prepared for Gunnison Energy Corporation – one of the major oil and gas developers in the North Fork Valley – has acknowledged the potential for significant impacts to

water resources from fracking.<sup>31</sup> The simple fact of the matter is that natural gas development has the potential for poisoning our water with toxic, hazardous, and carcinogenic chemicals as well as naturally occurring radioactive radium, and BLM must provide a thorough analysis of these potentially significant impacts in an EIS.

The bottom line is this – energy companies have told us, ‘Trust us, our fracking ingredients and process for extracting natural gas are harmless.’ We now know they have not been truthful and cannot be trusted. Without implementation of a precautionary approach to these risks, BLM will continue to place the health of CHC members and supporters, our community, and our environment at risk.

**ii. Impacts from hydraulic fracturing resulting in seismic activity must be considered prior to the lease sale.**

The scientific communities recognition of the relationship between hydraulic fracturing and seismic activity is not new. Indeed, the USGS freely admits, “earthquakes induced by human activity have been documented.”<sup>32</sup> The largest and perhaps most widely known incident to date resulted from fluid injection at the Rocky Mountain Arsenal near Denver, Colorado, in 1967, where an earthquake of magnitude 5.5 followed a series of smaller earthquakes. Further, in a 1990 report studying the incident, the USGS confirmed, “the link between fracking fluid injection and the earlier series of earthquakes was established.”<sup>33</sup>

Just recently, “[a] northeast Ohio well used to dispose of wastewater from oil and gas drilling almost certainly caused a series of 11 minor quakes in the Youngstown area since last spring, a seismologist investigating the quakes said.”<sup>34</sup> After the latest and largest quake Saturday, December 31, 2011, which registered at 4.0 magnitude, “state officials announced their beliefs

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<sup>31</sup> See Gunnison Energy Corporation, *Analysis of Potential Impacts of Four Exploratory Natural Gas Wells to Water Resources of the South Flank of the Grand Mesa, Delta County, Colorado* (March 2003) at 42, 56 (attached as Exhibit 26).

<sup>32</sup> See USGS, Earthquakes Hazards Program, FAQs, available at: <http://earthquake.usgs.gov/learn/faq/?categoryID=1&faqID=1> (last visited Jan. 3, 2012).

<sup>33</sup> Craig Nicholson and Robert Wesson, *Earthquake Hazard Associated with Deep Well Injection – A report to the U.S. Environmental Protection Agency*, U.S. Geological Survey Bulletin 1951 (1990), at 74 (attached as Exhibit 27) (also citing other well-documented examples of seismic activity induced by fluid injection, including: Denver, Colorado; Rangely, Colorado; southern Nebraska; western Alberta and southwestern Ontario, Canada; western New York; New Mexico; and Matsushiro, Japan).

<sup>34</sup> Thomas J. Sheeran, *Ohio Earthquakes Caused by Drilling Wastewater Well, Experts Say*, HUFFINGTON POST, January 2, 2012, available at: [http://www.huffingtonpost.com/2012/01/02/ohio-earthquakes-caused-by-wastewater-well-drilling\\_n\\_1180094.html](http://www.huffingtonpost.com/2012/01/02/ohio-earthquakes-caused-by-wastewater-well-drilling_n_1180094.html) (last visited Jan. 3, 2012).

that injecting wastewater near a fault line had created enough pressure to cause seismic activity. They said four inactive wells within a five-mile radius of the Youngstown well would remain closed.”<sup>35</sup> As Andy Ware, deputy director of the Ohio Department of Natural Resources, which regulates gas drilling and disposal wells, stated, “the state asked on Friday that injection at the well be halted after analysis of the 10th earthquake, a 2.7-magnitude temblor on Dec. 24, showed that it occurred less than 2,000 feet below the well.”<sup>36</sup>

The events in Youngstown unfortunately don’t seem to be isolated. “A string of mostly small tremors in Arkansas, Oklahoma, Texas, British Columbia and other shale-gas-producing areas suggest that [fracking] may lead, directly or indirectly, to a dangerous earthquake.”<sup>37</sup> The commonality of circumstances suggests that a strong correspondence between seismic activity and development techniques used by the oil and gas industry does indeed exist. For example, “[t]he number and strength of earthquakes in central Arkansas have noticeably dropped since the shutdown of two injection wells in the area.”<sup>38</sup> Scott Ausbrooks, the Geohazards Supervisor for the Arkansas Geological Survey, provided, “[w]e have definitely noticed a reduction in the number of earthquakes, especially the larger ones. It’s definitely worth noting.”<sup>39</sup>

Moreover, the U.S. Geological Survey (“USGS”) has recently released a report that links a series of earthquakes in Oklahoma, in January 2011, to a fracking operation underway there. The USGS determined after analyzing earthquake data that “the character of seismic recordings indicate that they are both shallow and unique.”<sup>40</sup> The report continues, providing: “Our analysis showed that shortly after hydraulic fracturing began small earthquakes started occurring, and more than 50 were identified, of which 43 were large enough to be located. Most of these earthquakes occurred within a 24-hour period after hydraulic fracturing operations had ceased.”<sup>41</sup>

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<sup>35</sup> *Id.*

<sup>36</sup> Henry Fountain, *Disposal Halted at Well After New Quake in Ohio*, THE NEW YORK TIMES, Jan. 1, 2012, available at: <http://www.nytimes.com/2012/01/02/science/earth/youngstown-injection-well-stays-shut-after-earthquake.html?scp=3&sq=fracking%20earthquake&st=cse> (last visited Jan. 3, 2012).

<sup>37</sup> *Id.*

<sup>38</sup> Sarah Eddington, *Ark. Quakes Decline Since Injection Well Closures*, HUFFINGTON POST, March 14, 2011, available at: <http://www.huffingtonpost.com/huff-wires/20110314/us-arkansas-earthquakes/> (last visited Jan. 3, 2012).

<sup>39</sup> *Id.*

<sup>40</sup> Austin Holland, Oklahoma Geological Survey, Examination of Possibly Induced Seismicity from Hydraulic Fracturing in Eola Field, Garvin County, Oklahoma (Aug. 2011), at 1 (attached as Exhibit 28).

<sup>41</sup> *Id.*

Colorado has also been central in the discussion surrounding the link between fracking and earthquakes. In August 2011, an earthquake measuring 5.3-magnitude near Trinidad, Colorado, was the largest in more than 40 years.<sup>42</sup> However, seismic activity near Trinidad is not new. Indeed, a September 2001 swarm of earthquakes near Trinidad prompted a U.S. Geological Survey investigation. The USGS report provided, “In recent years, a large volume of excess water that is produced in conjunction with coal-bed methane gas production has been returned to the subsurface in fluid disposal wells in the area of the earthquake swarm;” and later continues, “Because of the proximity of these disposal wells to the earthquakes, local residents and officials are concerned that the fluid disposal might have triggered the earthquakes.”<sup>43</sup> The USGS investigation concluded: “the characteristics of the seismicity and the fluid disposal process do not constitute strong evidence that the seismicity is induced by the fluid disposal, though they do not rule out this possibility.”<sup>44</sup>

With regard to the August 2012 Lease Sale, Colorado’s Earthquake Fault Map shows that seismic activity has historically occurred near many of the 22 nominated parcels.<sup>45</sup> Moreover, the threat of seismic activity induced from oil and gas development practices is compounded due to existing coal mining in the area. Indeed, the threat to those working underground from an earthquake is substantial and potentially life threatening. As noted above, Ohio officials placed a five-mile buffer around waste injection wells. As shown on the Map demonstrating a 5-mile Buffer from Coal Mining Permit Area (attached as Exhibit 31), taking such an approach here would eliminate many of the proposed parcels. This precautionary approach is necessary given the tangible threat to human life that would result from unabated gas development in this area. Given the existing predisposition of this area to seismic activity from nearby fault lines, as well as the strong correlation between oil and gas development practices and the inducement of earthquakes, BLM UFO must take a hard look at possible impacts before the August 2012 Lease Sale is held.

**iii. Impacts to water quality and water resources must be considered prior to the lease sale.**

Section 303 of the Clean Water Act (“CWA”), 33 U.S.C. § 1313, requires each State to institute comprehensive standards establishing water quality goals for all intrastate waters, and requires

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<sup>42</sup> Jordan Steffen, *5.3 quake in Trinidad, Colo., area unnerves regions residents*, DENVER POST, August 24, 2011, available at: [http://www.denverpost.com/news/ci\\_18744329](http://www.denverpost.com/news/ci_18744329) (last visited Jan. 3, 2012).

<sup>43</sup> Mark E. Mermonte, et al., USGS, *Investigation of an Earthquake Swarm Near Trinidad, Colorado, August – October 2001* (2002), available at: <http://pubs.usgs.gov/of/2002/ofr-02-0073/ofr-02-0073.html> (last visited Jan. 3, 2012) (attached as Exhibit 29).

<sup>44</sup> *Id.*

<sup>45</sup> Matthew L. Morgan, *Colorado’s Earthquake and Fault Map: Showing Locations of Historical Earthquakes and Known or Suspected Geologically Young Faults*, COLORADO GEOLOGICAL SURVEY (2006-2007) (attached as Exhibit 30).

that such standards “consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses.” 33 U.S.C. § 1313(c)(2)(A). A 1987 amendment to the CWA makes clear that section 303 also contains an “antidegradation policy” – that is, a policy requiring that state standards be sufficient to maintain existing beneficial uses of navigable waters, preventing their further degradation. 33 U.S.C. § 1313 (d)(4)(B); *see also PUD No. 1 of Jefferson County v. Washington Dept. of Ecology*, 511 U.S. 700, 705 (1994). Accordingly, EPA’s regulations implementing the CWA require that state water quality standards include “a statewide antidegradation policy” to ensure that “[e]xisting instream water uses and the level of water quality necessary to protect [those] uses [are] maintained and protected.” 40 C.F.R. § 131.12(a)(1). At a minimum, state water quality standards must satisfy these conditions. The CWA also allows States to impose more stringent water quality controls. *See* 33 U.S.C. §§ 1311(b)(1)(C), 1370; *see also* 40 CFR § 131.4(a) (“As recognized by section 510 of the Clean Water Act [33 U.S.C. § 1370], States may develop water quality standards more stringent than required by this regulation”). BLM also holds independent authority to protect water quality above and beyond what the CWA may require or authorize. 43 U.S.C. §§ 1701(a)(8), 1702(c), 1732(b).

The water quality standards that Congress required the States to develop must include three elements: (1) first, each water body must be given a “designated use,” such as recreation or the protection of aquatic life; (2) second, the standards must specify for each body of water the amounts of various pollutants or pollutant parameters that may be present without impairing the designated use; and (3) third, each state must adopt an antidegradation review policy which will allow the State to assess activities that may lower the water quality of the water body. *See American Wildlands v. Browner*, 260 F.3d 1192, 1194 (10<sup>th</sup> Cir. 2001) (citing 33 U.S.C. § 1313(c)(2)(A) and 40 C.F.R. §§ 130.3, 130.10(d)(4), 131.6, 131.10, 131.11).

Pursuant to CWA section 303(d)(1), 33 U.S.C. § 1313(d)(1), each state is further required to identify those waters that do not meet water quality standards – called the “303(d)(1) list.” For impaired waters identified in the § 303(d)(1) list, the states must establish a total maximum daily load (“TMDL”) for pollutants identified by the EPA. A TMDL specifies the maximum amount of pollutant that can be discharged or loaded into the waters from all combined sources, so as to comply with the subject water quality standards.

CWA section 1323(a) requires federal agencies to comply with state and local water-quality requirements “in the same manner, and to the same extent as any nongovernmental entity.” Congress intended this section to ensure that federal agencies were required to “meet all [water pollution] control requirements as if they were private citizens.” S. REP. NO. 92-414 (1971), *as reprinted in* 1972 U.S.C.C.A.N. 3668, 3734. This provision applies to activities resulting in either “discharge or runoff of pollutants.” 33 U.S.C. § 1323(a).

The Colorado Department of Public Health and Environment, Water Quality Control Division (“WQCD”) is the agency responsible for maintaining, restoring, and improving the quality of

Colorado's waters.<sup>46</sup> According to Colorado State law, "waters of the state" are "all streams, lakes, rivers, ponds, wells, impounding reservoirs, watercourses, springs, drainage systems, and irrigation systems; all sources of water such as snow, ice, and glaciers; and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, located wholly or partly within or bordering upon this state and within the jurisdiction of this state." C.R.S. § 25-13-103(12). Colorado's water quality standards and regulations are codified in Regulation No. 31 of the Colorado Code of Regulations.<sup>47</sup> Colorado's antidegradation rules provide that either of two water quality-based designations may be adopted in appropriate circumstances: (1) an "outstanding waters" designation may be applied to certain high quality waters that constitute an outstanding natural resource, and (2) "use-protected waters" designation may be applied to waters with existing quality that is not better than necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.<sup>48</sup>

Colorado's antidegradation rule provides that an "outstanding waters" designation requires the "highest level of water quality protection" and that these waters "shall be maintained and protected at their existing quality." *Id.* at 31.8(1)(a). In other words, no degradation of these waters by regulated activities is allowed.

As applied to the subject August 2012 Lease Sale, segment (COGUNF01) in the North Fork watershed has been given an "outstanding waters" designation, and includes all tributaries to North Fork of the Gunnison River, including all lakes, reservoirs, and wetlands within the West Elk and Raggeds Wilderness Areas.<sup>49</sup> Accordingly, any activity undertaken by BLM UFO in this area – including the lease of public lands for oil and gas development – may degrade these "outstanding waters." Not only is BLM UFO mandated to follow this antidegradation standard under the CWA and Colorado law, but it must also take a NEPA "hard look" at any impacts that may be related to these water quality standards as well.

Additional waters are also implicated by the August 2012 Lease Sale. As provided above, waters determined to be "impaired" (i.e., either "partially supporting" or "not supporting" their designated uses), are placed on the State's list of impaired waters, as required by Section 303(d) of the CWA. According to the Colorado WQCD, several segments of the North Fork are

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<sup>46</sup> See BLM National Science & Technology Center, *Water Quality Law Summary: Colorado* ("BLM WQLS"), available at: <http://www.blm.gov/nstc/WaterLaws/colorado2.html> (last visited Dec. 20, 2011).

<sup>47</sup> Colorado Department of Public Health and Environment, Water Quality Control Commission ("WQCC"), Regulation No. 31 (Basic Standards and Methodologies for Surface Water), 5 C.C.R. 1002-31 (attached as Exhibit 32).

<sup>48</sup> See 5 C.C.R. 1002-31.8. See also Colorado Department of Public Health and Environment, Water Quality Control Division ("WQCD"), *Antidegradation Significance Determination for New and Increased Water Quality Impacts* (2001) (attached as Exhibit 33).

<sup>49</sup> See North Fork River Improvement Association ("NFRIA"), *North Fork of the Gunnison River Watershed Action Plan* (2010), at 56 (attached as Exhibit 34).

impaired under 303(d) due to major pollution from selenium.<sup>50</sup> In 2010, there were four segments (COGUNF03, COGUNF05, COGUNF06a, COGUNF06b) on the 303(d) list for selenium (Se) impairment, and include the North Fork mainstem and all tributaries below Paonia.<sup>51</sup> Further, the North Fork water quality impairments have been designated as high priority for TMDL determination.<sup>52</sup> New discharges are not allowed to section 303(d) impaired waters without a TMDL permit. *See* 40 C.F.R. 122.4(i), 122.44(d).

As noted, these segments of the North Fork of the Gunnison are impaired for selenium, which is known to readily dissolve in water and move through the aquatic environment where it can bioaccumulate in organisms to toxic levels.<sup>53</sup> Within the Gunnison basin the selenium issue is compounded by the presence of four fish species in the lower basin and downstream in the Colorado River that are both state and federally listed endangered species. These include the Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), Bonytail chub (*Gila Elegans*), and Razorback sucker (*Xyrauchen texanus*). These species may be adversely affected by elevated instream selenium concentrations.<sup>54</sup> Selenium concentrations currently existing in the basin already exceed those shown to impact fish and wildlife elsewhere and exceed assigned Colorado Water Quality Standards.<sup>55</sup>

The Mancos Shale formation underlies much of the area that the August 2012 Lease Sale nominates for oil and gas development. Mancos Shale is a marine deposit and, as such, contains significant amounts of readily soluble constituent materials, including selenium.<sup>56</sup> High concentrations of selenium exist in both relatively impermeable shale deposits, as well as the overlying soils derived from that shale. The selenium bearing groundwater and surface drainage ultimately discharge into surface water, leading to high selenium concentrations in the

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<sup>50</sup> *Id.*

<sup>51</sup> *Id.* *See also* Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation No. 93 (Colorado Section 303(d) List of Impaired Waters and Monitoring and Evaluation List) 5 C.C.R. 1002-39 (attached as Exhibit 35).

<sup>52</sup> *See* Colorado Department of Public Health and Environment, Water Quality Control Division, *Total Maximum Daily Load Assessment, Gunnison River and Tributaries, Uncompahgre River and Tributaries, Delta/Mesa/Montrose Counties, Colorado* (2011), (“TMDL Report”) (attached as Exhibit 36).

<sup>53</sup> *Id.* at 5 (citing Lemly, 2002).

<sup>54</sup> *Id.*, *see also infra* at III (providing discussion on the requirements of the Endangered Species Act).

<sup>55</sup> *Id.*

<sup>56</sup> TMDL Report, at 16.

surrounding waters.<sup>57</sup> Mean daily selenium loads were calculated for six drainages within the North Fork Gunnison River Basin, all of which are included on Colorado's 2008 Section 303(d) List for impaired waters.<sup>58</sup>

Moreover, the potential impacts that oil and gas drilling may cause to water resources must be analyzed before the August 2012 Lease Sale can take place. A Water Resources Summary for the North Fork watershed provides a detailed parcel-by-parcel analysis, and demonstrates a substantial threat of impacts.<sup>59</sup> Any development on the 22 nominated parcels has a high probability of significantly adding to selenium concentrations of the already impaired waters of the North Fork of the Gunnison River Basin, let alone the threat posed to these resources from the use of fracking. Not only is a "hard look" at these impacts required under NEPA, but BLM UFO must also meet the additional obligations of the CWA and Colorado Water Quality Control Act ("WQCA") based on standards for both antidegradation and 303(d) listed waters.

In addition, BLM has an independent duty to consider the impacts of the August 2012 Lease Sale, and cannot excuse itself from that duty merely because other regulatory agencies are also considering the impacts. 40 C.F.R. §§ 1502.14(f), 1502.16(h). "A non-NEPA document – let alone one prepared and adopted by a state government – cannot satisfy a federal agency's obligations under NEPA." *South Fork Band Council of Western Shoshone of Nevada v. U.S. Department of Interior*, 588 F.3d 718, 726 (9<sup>th</sup> Cir. 2009) (citing *Klamath-Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 998 (9<sup>th</sup> Cir. 2004)) (BLM's argument that it need not consider impacts because a facility operated under a state permit issued pursuant to the Clean Air Act is "without merit"); *Southern Or. Citizens Against Toxic Sprays, Inc. v. Clark*, 720 F.2d 1475 (9<sup>th</sup> Cir. 1983) (another agency's consideration of environmental impacts does not relieve BLM of its duty to consider effects; "BLM must assess independently [the impacts]"); *see also Calvert Cliffs' Coordinating Comm., Inc. v. U. S. Atomic Energy Comm'n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971) ("Certification by another agency that its own environmental standards are satisfied involves an entirely different kind of judgment.").

BLM must also analyze the impacts that oil and gas development will have on the hundreds of miles of irrigation canals that are the lifeblood of communities in the North Fork Valley. Many miles of these canals traverse the proposed lease parcels, and therefore BLM UFO's NEPA analysis must look at both water quality and water quantity issues that may result from proposed development.

With regard to water quality, there is significant concern that contamination of irrigation canals –

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<sup>57</sup> *See id.* *See also* Scoping Comment from Pete Kolbenschlag, to BLM UFO (Dec. 28, 2011) (providing, among other things, that steep slopes, delicate soils and erosion potential for the nominated parcels is high and threatens to significantly increase selenium loading in the North Fork watershed) (attached as Exhibit 37); Map of Selenium Solubility (attached as Exhibit 38).

<sup>58</sup> TMDL Report, at 20.

<sup>59</sup> *See* NFRIA-WSERC Conservation Center, *Water Resources Summary for BLM August 2012 Lease Sale, North Fork Watershed* (Feb. 5, 2012) (attached as Exhibit 39).

and therefore the irrigation water utilized by farmers and ranchers throughout the valley – will occur from leaks, spills, and vertical fractures in the subsurface strata, allowing fracking chemicals to migrate toward the surface and enter water as it is transported through the earthen irrigation canals. If BLM decides to lease these parcels, thorough analysis of these potential impacts must occur prior to the August 2012 Lease Sale.

With regard to water quantity issues, there is warranted fear that drawdown and loss of water in the irrigation system will result from the hundreds-of-millions of gallons of water that the oil and gas industry uses during many of its development activities. It should come as no surprise that a sufficient quantity of irrigation water is fundamental to the livelihoods of many in the North Fork Valley. Moreover, there is the potential for earth slides and canal failure as a result of fracking activity – which if not expeditiously repaired may result in significant damage to crops and livestock. The irrigation companies in the North Fork Valley have small, very tight budgets and already struggle to repair structural damage to irrigation canals.<sup>60</sup> Consequently, damage induced by oil and gas activity – such as an earthquake – could result in irrigation canal failure, with cascading impacts throughout the North Fork Valley. Such risks to water quantity and the irrigation system are unacceptable, and must be analyzed before BLM UFO proceeds in the sale of our public lands.

**iv. Impacts to greenhouse gas emissions, climate change, and air quality must be considered prior to the lease sale.**

In the past, BLM UFO has wholly failed to address how oil and gas development will contribute to greenhouse gas (“GHG”) emissions and impact global warming, or has included only a perfunctory analysis of impacts. These errors must not be repeated in BLM’s NEPA analysis relating to the August 2012 Lease Sale. BLM UFO has previously claimed:

The assessment of GHG emissions and climate change remains in its formative phase; therefore, it is not yet possible to know with certainty the net impact to climate from GHGs produced globally over the last century or those produced today. The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts of climate change on the specific area offered for leasing.

BLM, *November 2011 Competitive Oil and Gas Lease Sale, Final Environmental Assessment* (“November 2011 EA”), at 10.

Difficulty in quantifying the potential impacts of leasing and then developing the proposed parcels does not obviate BLM UFO’s obligations under NEPA. Failure to include a critical element of a NEPA document because the task is difficult is unacceptable. “Reasonable forecasting and speculation is ... implicit in NEPA, and we must reject any attempt by agencies

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<sup>60</sup> According to the Dave Herz, Board member of the Stewart Ditch and Reservoir Company, a large earth slide in 1986 destroyed a section of their canal costing \$287,000 to repair. In today’s dollars, this repair would cost \$590,000, a figure that far exceeds North Fork Valley irrigation companies’ financial ability to repair.

to shirk their responsibilities under NEPA by labelling any and all discussion of future environmental effects as ‘crystal ball inquiry.’” *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n.9 (9<sup>th</sup> Cir. 1984) (quoting *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm.*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)). NEPA does not require absolute precision but, rather, “a reasonably thorough discussion of the significant aspects of the probable environmental consequences” to “foster both informed decision-making and informed public participation.” *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194 (9<sup>th</sup> Cir. 2008) (quotations and citations omitted). As provided by NEPA’s implementing regulations:

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

40 C.F.R. § 1500.1(c).

BLM’s customary elevation of form over function – in contravention of these basic mandates – has been evident in past NEPA analysis. In the past, BLM UFO has indicated that GHG emissions are believed by “some” to cause global warming. *See, e.g.*, November 2011 EA. In reality, virtually every climatologist in the world accepts the legitimacy of global warming.<sup>61</sup> To suggest that there is any serious doubt regarding this issue is to deny the weight of the evidence. Fundamentally, global climate change is a scientific issue, not a political issue. Consequently, all NEPA analysis relating to the August 2012 Lease Sale should state that scientific data has established that a consensus exists among the world’s scientists that GHG pollution contributes to global warming and climate change.

Despite BLM’s attempts to brush this issue aside, BLM is required to consider and ameliorate GHG pollution by law. Secretarial Order 3226 (January 19, 2001) (“Order”) commits the Department of the Interior to address climate change through its planning and decision-making processes. The Order provides that “climate change is impacting natural resources that the Department of the Interior (“Department”) has the responsibility to manage and protect.” Sec. Or. 3226, § 1; *see also* Sec. Or. 3289 Amend. No. 1 (Feb. 22, 2010). The Order also “ensures that climate change impacts are taken into account in connection with Department planning and decision making.” *Id.* The Order obligates BLM to “consider and analyze potential climate change impacts” in four situations: (1) “when undertaking long-range planning exercises”; (2) “when setting priorities for scientific research and investigations”; (3) “when developing multi-year management plans, and/or” (4) “when making major decisions regarding the potential utilization of resources under the Department’s purview.” *Id.* § 3. The Order specifically provides that “Departmental activities covered by this Order” include “management plans and activities developed for public lands” and “*planning and management activities associated with oil, gas and mineral development on public lands.*” *Id.* (emphasis added). BLM’s oil and gas leasing decisions are thus contemplated by and subject to section 3 of the Order.

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<sup>61</sup> *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *The Science of Climate Change* (1995) (attached as Exhibit 40).

BLM is further empowered and obligated pursuant to the Federal Land Policy and Management Act (“FLPMA”) and the Mineral Leasing Act (“MLA”) to ensure that oil and gas lease decisions conserve natural resources and do not degrade public lands. Pursuant to FLPMA, BLM must “take any action necessary to prevent unnecessary or undue degradation of the [public] lands.” 43 U.S.C. § 1732(b). Written in the disjunctive, BLM must prevent degradation that is “unnecessary” and degradation that is “undue.” *Mineral Policy Ctr. v. Norton*, 292 F.Supp.2d 30, 41-43 (D. D.C. 2003). The protective mandate applies to BLM’s planning and management decisions. *See Utah Shared Access Alliance v. Carpenter*, 463 F.3d 1125, 1136 (10<sup>th</sup> Cir. 2006) (finding that BLM’s authority to prevent degradation is not limited to the RMP planning process). GHG pollution may cause “undue” degradation, even if the activity causing the degradation is “necessary.” Where GHG pollution is avoidable, it is “unnecessary” degradation. 43 U.S.C. § 1732(b). Beyond mitigating climate change by reducing contributions of GHG pollution to the atmosphere, BLM can also help promote ecological resiliency and adaptability by reducing external anthropogenic environmental stresses (like oil and gas development) as a way of best positioning public lands and the communities that rely on those public lands to withstand what is quite likely already ongoing and intensifying climate change degradation. As emphasized, the area implicated by this proposed lease sale is a critical agricultural and ranching area, acting as not just a watershed, but foodshed, that will prove essential to the durability of the area’s communities in the face of a deteriorating, changing climate.

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

BLM regulations illuminate these requirements. The authorized officer must “*require* that all operations be conducted in a manner which protects other natural resources and the environmental quality, protects life and property and results in the maximum ultimate recovery of oil and gas *with minimum waste and with minimum adverse effect on the ultimate recovery of other mineral resources.*” 43 C.F.R. § 3161.2 (emphasis added). Waste is defined as any act or failure to act, not sanctioned by the authorized officer, which results in: “(1) A reduction in the quantity or quality of oil and gas ultimately producible from a reservoir under prudent and proper operations; or (2) avoidable surface loss of oil or gas.” 43 C.F.R. § 3160.0-5. Avoidable losses of oil or gas include venting or flaring without authorization, operator negligence, failure of the operator to take “all reasonable measures to prevent and/or control the loss,” and an operator’s failure to comply with lease terms and regulations, order, notices, and the like. *Id.*

Ensuring compliance with these obligations through proper analysis and documentation in the NEPA process is important – technologies and practices change, and BLM’s duty to prevent

degradation and waste cannot be excused just because the agency apparently lags behind the technological curve.

In prior leasing processes and litigation with BLM, BLM has argued that it identifies, reports, and prevents GHG pollution and waste through existing policies. For example, BLM has relied on guidance that apparently sets limits on the venting and flaring of natural gas. *See* Notice to Lessees and Operators (“NTL”) 4a. But as the Government Accountability Office (“GAO”) recently determined, BLM’s existing waste policies are over 30-years old, wildly outdated, fail to account for new technologies and practices, and are plagued by inconsistent interpretations and implementation at the Field Office level. GAO, *Federal Oil & Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, GAO-11-34 at 11, 27 (October 2010) (attached as Exhibit 41). BLM’s guidance was developed well before GHG reduction technologies and practices were developed, and does not, as found by the GAO, “enumerate the sources that should be reported or specify how they should be estimated.” *Id.* BLM also explained to GAO “that [BLM] thought the industry would use venting and flaring technologies if they made economic sense,” a naïve perspective belied by the lack of information about the magnitude of methane waste and the documented barriers to the deployment of GHG reduction technologies and practices. *Id.* at 20-33. NEPA provides an opportunity for BLM to account for technological progress, get ahead of the technological curve, and thereby satisfy its legal duties.

Preventing GHG pollution and waste is particularly important in the natural gas context, where there is an absence of meaningful lifecycle analysis of the GHG pollution emitted by the production, processing, transmission, distribution, and combustion of natural gas. Although natural gas is often touted as a ‘cleaner’ alternative to dirty coal, recent evidence indicates that this may not, in fact be the case – and, at the least, indicates that we must first take immediate, common sense action to reduce GHG pollution from natural gas before it can be safely relied on as an effective tool to transition to a clean energy economy (a noted priority of this Administration).<sup>62</sup> Considering alternatives to prevent or abate these emissions, in particular through enforceable stipulations attached to the leases, is therefore reasonable and prudent.

Oil and natural gas systems are the biggest contributor to methane emissions in the United States, accounting for over one quarter of all methane emissions.<sup>63</sup> In light of serious controversy and uncertainties regarding GHG pollution from oil and gas development, BLM’s quantitative assessment should account for methane’s long-term (100-year) global warming impact and, also, methane’s short-term (20-year) warming impact using the latest peer-reviewed science to ensure that potentially significant impacts are not underestimated or ignored. *See* 40 C.F.R. § 1508.27(a) (requiring consideration of “[b]oth short- and long-term effects”).

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<sup>62</sup> Robert W. Howarth, *Assessment of the Greenhouse Gas Footprint of Natural Gas from Shale Formations Obtained by High-Volume, Slick-Water Hydraulic Fracturing* (Rev’d. Jan. 26, 2011) (attached as Exhibit 42). *See also* Robert W. Howarth et al., *Venting and Leaking of Methane from Shale Gas Development: Response to Cathles et al.* (2012) (attached as Exhibit 43).

<sup>63</sup> U.S. Emissions Inventory 2007: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005.

EPA's GHG Inventory – which BLM typically relies on in its analysis – assumes that methane is 21 times as potent as carbon dioxide (“CO<sub>2</sub>”) over a 100-year time horizon, a global warming potential (“GWP”) based on the Intergovernmental Panel on Climate Change’s (“IPCC”) Second Assessment Report from 1996.<sup>64</sup> As a Supplementary Information Report (“SIR”) prepared for BLM’s oil and gas leasing program in Montana and the Dakotas explains, GWP “accounts for the intensity of each GHG’s heat trapping effect and its longevity in the atmosphere” and “provides a method to quantify the cumulative effect of multiple GHGs released into the atmosphere by calculating carbon dioxide equivalent (CO<sub>2</sub>e) for the GHGs.” SIR at 1-2.<sup>65</sup> However, substantial questions arise when you calibrate methane’s GWP over the 20-year planning and environmental review horizon used in the SIR and, typically, by BLM, including the UFO. *See* SIR at 4-1 thru 4-45 (discussing BLM-derived reasonably foreseeable development potential in each planning area). Over this 20-year time period, the IPCC has calculated that methane’s GWP is 72 – over three times as potent as otherwise assumed by the SIR.<sup>66</sup>

Moreover, recent peer-reviewed science demonstrates that gas-aerosol interactions amplify methane’s impact such that methane is actually 33 times as potent as carbon dioxide over a 100-year time period, and 105 times as potent over a twenty year time period.<sup>67</sup> This information suggests that the near-term impacts of methane emissions have been underestimated by several orders of magnitude. *See* 40 C.F.R. § 1508.27(a) (requiring consideration of short and long term effects). Further, by extension, BLM is underestimating the near-term benefits of keeping methane emissions out of the atmosphere by several orders of magnitude. 40 C.F.R. §§ 1502.16(e), (f); *id.* at 1508.27. These estimates are important given the noted importance of near term action to ameliorate climate change – near term action that scientists say should focus, *inter alia*, on preventing the emission of short-lived but potent GHGs like methane while, at the same

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<sup>64</sup> INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Second Assessment Report* (1996) (attached as Exhibit 44); *see also* U.S. Environmental Protection Agency, *Methane*, available at: <http://www.epa.gov/outreach/scientific.html> (last visited Dec. 20, 2011).

<sup>65</sup> BLM, *Climate Change, Supplementary Information Report, Montana, North Dakota and South Dakota* (2010) available at: [www.blm.gov/mt/st/en/prog/energy/oil\\_and\\_gas/leasing/leasingEAs.html](http://www.blm.gov/mt/st/en/prog/energy/oil_and_gas/leasing/leasingEAs.html) (last visited Dec. 20, 2011) (attached as Exhibit 45).

<sup>66</sup> *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Fourth Assessment Report, Working Group 1, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Ch. 2, p. 212, Table 2.14, available at: [www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/ch2s2-10-2.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html) (last visited Dec. 20, 2011) (attached as Exhibit 46).

<sup>67</sup> Drew Shindell et al., *Improved Attribution of Climate Forcing to Emissions*, *SCIENCE* 2009 326 (5953), p. 716, available at: [www.sciencemag.org/cgi/content/abstract/326/5953/716](http://www.sciencemag.org/cgi/content/abstract/326/5953/716) (last visited Dec. 20, 2011) (attached as Exhibit 47).

time, stemming the ongoing increase in the concentration of carbon dioxide.<sup>68</sup> These uncertainties – which BLM UFO has left unaddressed in prior NEPA analysis – necessitate preparation of an EIS. 40 C.F.R. §§ 1508.27(a), (b)(4)-(5).

Additional, serious, yet unaddressed uncertainties pertain to the magnitude of pollution from oil and gas emissions sources. Current EPA emissions factors drastically underestimate the emissions from several oil and gas sources. In a Technical Support Document (“TSD”) prepared for EPA’s mandatory GHG reporting rule for the oil and gas sector, EPA determined that several emissions sources were projected to be “significantly underestimated.”<sup>69</sup> EPA thus provided revised emissions factors for four of the most significant underestimated sources that ranged from ten times higher (for well venting from liquids unloading) to as many as 3,500 and 8,800 times higher (for gas well venting from completions and well workovers of unconventional wells).<sup>70</sup> When EPA accounted for just these four revisions, it more than doubled the estimated GHG emissions from oil and gas production, from 90.2 million metric tons of CO<sub>2</sub> equivalent (MMT<sub>CO<sub>2</sub>e</sub>) to 198.0 MMT<sub>CO<sub>2</sub>e</sub>.<sup>71</sup>

To provide a specific example, EPA has used an emissions factor of 3 thousand standard cubic feet (“Mcf”) of gas emitted to the atmosphere per well completion in calculating its GHG inventory. EPA has, however, conceded that a far more accurate emissions factor is 9,175 Mcf per well.<sup>72</sup> Moreover, it is important to note that the emissions factor for certain geologic formations is significantly higher, such as the 22,000 Mcf of gas per well reported in the

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<sup>68</sup> See, e.g., *Limiting Global Warming: Variety of Efforts Needed Ranging from 'Herculean' to the Readily Actionable*, *Scientists Say*, SCIENCE DAILY (May 4, 2010), available at: <http://www.sciencedaily.com/releases/2010/05/100503161328.htm> (last visited Dec., 20, 2011); see also, Veerabhadran Ramanathan and Yangyang Xu, *The Copenhagen Accord for Limiting Global Warming: Criteria, Constraints, and Available Avenues*, Proceedings of the National Academy of Sciences of the United States of America (March 26, 2010), available at: <http://www.pnas.org/content/107/18/8055.full> (last visited Dec. 20, 2011).

<sup>69</sup> U.S. Environmental Protection Agency, *Greenhouse Gas Emissions Reporting From The Petroleum And Natural Gas Industry Background Technical Support Document*, at 8, available at: <http://www.epa.gov/climatechange/emissions/subpart/w.html> (last visited Dec. 20, 2011) (attached as Exhibit 48).

<sup>70</sup> *Id.* at 9, Table 1; see also U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009* (2011) (providing latest GHG Inventory, where the magnitude of GHG emissions from oil and gas are more accurately acknowledged), available at: [www.epa.gov/climatechange/emissions/usinventoryreport.html](http://www.epa.gov/climatechange/emissions/usinventoryreport.html) (last visited Dec. 20, 2011) (attached as Exhibit 49).

<sup>71</sup> *Id.* at 10, Table 2.

<sup>72</sup> TSD, Appendix B at 84-87.

Piceance Basin.<sup>73</sup> Regardless, if you use EPA’s revised emissions factor, the estimated emissions from well completions and workovers totals 120 billion standard cubic feet – a vastly larger figure than the most recent U.S. GHG Inventory prepared by EPA which reports GHG emission of just 0.1 Bcf of gas from these sources.<sup>74</sup>

Many of these uncertainties and underestimates, as EPA has explained, are a result of the fact that emissions factors were “developed prior to the boom in unconventional well drilling (1992) and in the absence of any field data and does not capture the diversity of well completion and workover operations or the variance in emissions that can be expected from different hydrocarbon reservoirs in the country.” *Mandatory GHG Reporting Rule*, 75 Fed. Reg. 18608, 18621 (April 12, 2010). These underestimates are also caused by the dispersed nature of oil and gas equipment – rather than a single, easily grasped source, such as a coal-fired power plant, oil and gas production consists of large numbers of wells, tanks, compressor stations, pipelines, and other equipment that, individually, may appear insignificant but, cumulatively, may very well be quite significant. While dispersed, oil and gas development is nonetheless a massive, landscape-scale industrial operation – one that just happens to not have a single roof. BLM, as the agency charged with oversight of onshore oil and gas development, therefore has an opportunity to improve our knowledge base regarding GHG emissions from oil and gas production, providing some measure of clarity to this important issue by taking the requisite “hard look” NEPA analysis before selling and executing oil and gas leases.<sup>75</sup>

Given what we now know about the magnitude of pollution and GHG emissions stemming from oil and gas production generally, as well as the potency of methane for both its long-term and near-term impacts to global warming, the prudent course would be to leave oil and gas resources in the ground – particularly in the present context. There is little logic in nominating additional parcels for development when less than a third of all current Colorado oil and gas leases are under production. These facts support BLM UFO using its broad discretion to remove the subject 22 parcels from nomination in the August 2012 Lease Sale.

If BLM chooses to move forward on its present course, there is nevertheless convincing evidence to support the consideration of alternatives that would attach meaningful lease stipulations to

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<sup>73</sup> See, e.g., EPA, Natural Gas STAR Program, *Recommended Technologies and Practices for Wells*, available at: [www.epa.gov/gasstar/tools/recommended.html](http://www.epa.gov/gasstar/tools/recommended.html) (last visited Dec. 20, 2011); see also EPA, Natural Gas STAR Program, *Reduced Emissions Completions*, Oct. 26, 2005, at 14 (attached as Exhibit 50).

<sup>74</sup> See Exhibit 48, Appendix B at 84-87; Table A-125: CH<sub>4</sub> Emission Estimates from the Natural Gas Production Stage Excluding Reductions from the Natural Gas STAR Program and NESHAP Regulations (Gg), p. A-151, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2008 (April 2010) U.S. EPA # 430-R-10-006.

<sup>75</sup> In this context, the 2010 SIR, while providing a basic literature review of GHG emissions sources, is merely a starting point for BLM’s responsibility to take a hard look at GHG emissions in the context of foreseeable drilling operations in the geologic formations proposed for leasing.

these leases, assuming BLM chooses to move forward with this lease sale and that BLM's choice to do so is lawful. As a prime contributor to short-term climate change over the next few decades, methane is a prime target for near-term GHG reductions. In fact, there are many proven technologies and practices already available to reduce significantly the methane emissions from oil and gas operations. These technologies also offer opportunities for significant cost-savings from recovered methane gas. Indeed, reducing methane emissions is important not only to better protect the climate, but also to prevent waste of the oil and gas resource itself and the potential loss of economic value, including royalties. Moreover, new research indicates that tropospheric ozone and black carbon ("BC") contribute to both degraded air quality and global warming, and that emission control measures can reduce these pollutants using current technology and experience.<sup>76</sup> Employment of these strategies will annually avoid millions of premature deaths from outdoor air pollution, as well as increase annual crop yields by millions of metric tons due to ozone reductions.

These benefits – as well as the proven, cost-effective technologies and practices that achieve these benefits – are documented by EPA's "Natural Gas STAR" program, which encourages oil and natural gas companies to cut methane waste to reduce climate pollution and recover value and consolidates the lessons learned from industry for the benefit of other companies and entities with oil & gas responsibilities such as BLM.<sup>77</sup>

EPA has identified dozens of proven technologies and practices to reduce methane waste from wells, tanks, pipelines, valves, pneumatics, and other equipment and thereby make operations more efficient.<sup>78</sup> Though underutilized, EPA's Natural Gas STAR suggests the opportunity to dramatically reduce GHG pollution from oil and gas development, *if* its technologies and practices were implemented at the proper scale and supported by EPA's sister agencies, such as BLM. For calendar year 2010, EPA estimated that this program avoided 38.1 million tons CO<sub>2</sub> equivalent, and added revenue of nearly \$376 million in natural gas sales (at \$4.00/Mcf) – revenue which translates into additional royalties to federal and state governments for the American public.<sup>79</sup>

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<sup>76</sup> Drew Shindell, et al., *Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security*, SCIENCE 2012 335, at 183 (attached as Exhibit 51).

<sup>77</sup> See generally, EPA, Natural Gas STAR Program, available at: [www.epa.gov/gasstar/](http://www.epa.gov/gasstar/) (last visited Dec. 20, 2011).

<sup>78</sup> See EPA, Natural Gas STAR Program, *Recommended Technologies and Practices*, available at: [www.epa.gov/gasstar/tools/recommended.html](http://www.epa.gov/gasstar/tools/recommended.html) (last visited Dec. 20, 2011).

<sup>79</sup> See EPA, Natural Gas STAR Program, *Accomplishments*, available at: [www.epa.gov/gasstar/accomplishments/index.html#three](http://www.epa.gov/gasstar/accomplishments/index.html#three) (last visited Dec. 20, 2011) (attached as Exhibit 52). BLM should also take a look at EPA's more detailed program accomplishments to provide a measure of what BLM could itself accomplish, and to understand the nature of the problem and opportunities. Also of interest, for calendar year 2008, EPA estimated that its program avoided 46.3 million tons of CO<sub>2</sub> equivalent, equal to the annual GHG emissions from approximately 6 million homes per year, and added revenue of nearly \$802 million in natural gas

As indicated by EPA's record of success, reducing methane emissions to the atmosphere captures methane for sale, yielding a high potential for payback to the lessee who deploys GHG reduction technologies and practices. Several states have taken action to address this specific issue. For example, Montana's Climate Action Plan predicts that reducing methane emissions from the oil and gas sector in Montana would likely have a net benefit, meaning producers are most likely to make money.<sup>80</sup> The Montana Climate Action Plan recommends that the oil and gas sector reduce methane emissions by 30% by 2020.<sup>81</sup> To achieve this goal, the Climate Action Plan recommends preventative maintenance of oil and gas facilities, reducing flash losses from storage tanks, wells, compressor stations, and gas plants, and changing and replacing parts and devices to reduce leaks and improve efficiency.<sup>82</sup> Similarly, New Mexico, through Executive Order, established a statewide goal to reduce GHG pollution to 2000 levels by 2012, 10% below 2000 levels by 2020, and 75% below 2000 levels, and a specific goal of reducing methane emissions from the oil and gas industry by 20% by 2050.<sup>83</sup> Colorado itself has called for a 20% reduction in GHG pollution below 2005 levels by 2020 and an 80% reduction below 2005 levels by 2050.<sup>84</sup>

Not only can implementation of these technologies help reduce methane waste and spur economic benefit, it also promises to allay some of the harmful health effects that have come as a consequence of the oil and gas industry boom. The EPA is currently proposing standards to reduce air pollution from oil and natural gas drilling operations. According to the EPA, the oil and gas industry is "the largest industrial source of emissions of volatile organic compounds ("VOCs"), a group of chemicals that contribute to the formation of ground-level ozone

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sales. To speculate, the calendar year 2009 declines are likely associated with ongoing economic and financial stagnation and the low price of natural gas that has slowed natural gas drilling and production.

<sup>80</sup> Montana Climate Change Action Plan, *Final Report of the Governor's Climate Change Advisory Committee*, 4-12 (Nov. 2007), available at: <http://www.mtclimatechange.us/ewebeditpro/items/O127F14041.pdf> (last visited Dec. 20, 2011).

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> See Exec. Order No. 2006-64, New Mexico Climate Change Action (2006) (attached as Exhibit 53).

<sup>84</sup> Governor Bill Ritter, Jr., Colorado Climate Action Plan, 10 (November 2007), available at: <http://www.cdphe.state.co.us/climate/ClimateActionPlan.pdf> (last visited Dec. 20, 2011) (attached as Exhibit 54).

(smog).<sup>85</sup> Moreover, “[e]xposure to ozone is linked to a wide range of health effects, including aggravated asthma, increased emergency room visits and hospital admissions, and premature death.”<sup>86</sup> In addition to VOCs, the oil and natural gas industry is also “a significant source of emission of methane,” as well as “[e]missions of air toxics such as benzene, ethylbenzene, and n-hexane,” which are “pollutants known, or suspected of causing cancer and other serious health effects.”<sup>87</sup> The EPA reports that the oil and gas industry “emits 2.2 million tons of VOCs, 130,000 tons of air toxics, and 16 million tons of greenhouse gases (methane) each year (40% of all methane emission in the U.S.). The industry is one of the largest sources of VOCs and sulfur dioxide emissions in the United States.”<sup>88</sup> The rapid development of high volume/horizontal drilling in conjunction with hydraulic fracturing has driven expansion of new sources resulting in increased emissions, and has led a coalition of medical and public health groups to speak out in support of stronger air pollution standards.<sup>89</sup> Notably, EPA has, thus far, decided that it will not regulate methane emissions directly, suggesting an important and necessary role for BLM.

Much of this pollution also degrades visibility. Section 169A of the Clean Air Act (“CAA”), 42, U.S.C. § 7401 *et seq.* (1970) sets forth a national goal for visibility, which is the “prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution.”

In promulgating its Regional Haze Regulations, 64 Fed. Reg. 35,714 (July 1, 1999), the U.S. Environmental Protection Agency (“EPA”) provided:

Regional haze is visibility impairment that is produced by a multitude of sources and activities which emit fine particles and their precursors and which are located across a broad geographic area. Twenty years ago, when initially adopting the visibility protection provisions of the CAA, Congress specifically recognized that the “visibility problem is caused primarily by emission into the atmosphere of SO<sub>2</sub>, oxides of nitrogen, and particulate matter, especially fine particulate matter, from inadequate[ly] controlled sources.” H.R. Rep. No. 95-294 at 204 (1977). The fine particulate matter (PM) (e.g., sulfates, nitrates, organic carbon, elemental carbon, and soil dust) that impairs visibility by scattering and absorbing light can cause serious health effects and mortality in humans, and contribute to

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<sup>85</sup> EPA, *Oil and Natural Gas Pollution Standards: Basic Information, Emissions from the Oil & Natural Gas Industry* (2011), available at: <http://www.epa.gov/airquality/oilandgas/basic.html> (last visited Dec. 20, 2011).

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> Letter from American Lung Association, American Public Health Association, American Thoracic Society, Asthma and Allergy Foundation of America, and Trust for America’s Health to Lisa Jackson, Administrator, U.S. Environmental Protection Agency (Nov. 30, 2011), at 4 (attached as Exhibit 55).

<sup>89</sup> *See id.*

environmental effects such as acid deposition and eutrophication.

The visibility protection program under sections 169A, 169B, and 110(a)(2)(J) of the CAA is designed to protect Class I areas from impairment due to manmade air pollution. Congress adopted the visibility provisions in the CAA to protect visibility in these “areas of great scenic importance.” H.R. Rep. No. 294, 95<sup>th</sup> Cong. 1<sup>st</sup> Sess. at 205 (1977). The current regulatory program addresses visibility impairment in these areas that is “reasonably attributable” to a specific source or small group of sources. *See* 64 Fed. Reg. 35,714. Moreover, EPA finds the visibility protection provisions of the CAA to be quite broad. Although EPA is addressing visibility protection in phases, the national visibility goal in section 169A calls for addressing visibility impairment generally, including regional haze. *See e.g., State of Maine v. Thomas*, 874 F.2d 883, 885 (1<sup>st</sup> Cir. 1989) (“EPA’s mandate to control the vexing problem of regional haze emanates directly from the CAA, which ‘declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution.’”) (citation omitted).

In the instant case, the Black Canyon of the Gunnison National Park (“Black Canyon”) and the West Elk Wilderness – both Class I air quality areas – are directly implicated by any development in the North Fork Valley – a fact which has been recognized by BLM in past EA’s. By opening up 30,000 acres of this Valley to the oil and gas industry – which is one of the largest sources of VOCs and sulfur dioxide emissions in the United States – air quality and compliance or interference with the EPA’s Regional Haze rules must be considered before the August 2012 Lease Sale can proceed.

BLM UFO is required to consider and analyze these myriad impacts to greenhouse gas emissions, climate change and air quality from oil and gas development prior to the August 2012 Lease Sale, and should do so in a comprehensive EIS.

**v. BLM UFO must consider the cumulative impacts of the proposed oil and gas development prior to proceeding with the August 2012 Lease Sale.**

NEPA requires BLM UFO to look at the cumulative impacts of the Proposed Action. *See* 40 C.F.R. § 1508.25. Failure to include cumulative impacts of all the leasing and permitting decisions segments the process of gas development into many mini-NEPAs. This practice, in turn, has the effect of not only attempting to ensure that none of the Proposed Actions are individually significant, but also hides the fact that the cumulative impacts of all the segments are significant.

In the past, BLM UFO has failed to analyze the impacts of the proposed leasing combined with the already permitted gas-related activities in the vicinity of the project. Under NEPA, BLM “must analyze not only the direct impacts of the proposed action, but also the indirect and cumulative impacts of ‘past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions.’” *Wyoming v. U.S. Dept. of Agriculture*, 661 F.3d 1209, 1251 (10<sup>th</sup> Cir. 2011) (citing *Colorado Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1176 (quoting 40 C.F.R. § 1508.7)); *see also* 40 C.F.R. § 1508.25 (c) (stating that the “scope” of an EIS includes consideration of “cumulative” impacts).

Relevant to the instant case, BLM UFO has been remiss in prior analysis of oil and gas development to consider the cumulative impacts of the proposed action – which is of particular importance in an area like the one at issue here, where extensive energy development has the potential to affect what is now an area characterized, and known for, its wild lands, clean water, recreational opportunities, and organic agriculture.

The cumulative impacts to the landscape of energy development in the region have already left scars, and the potential for further development threatens greater impacts to the area. A map on BLM’s website reveals the extent of existing and potential oil and gas development in the area.<sup>90</sup> In the past, BLM has done little to consider the cumulative impacts of oil and gas development in the area – a pattern we hope is not repeated here. For example, BLM has thus far failed to analyze the cumulative impacts from previous oil and gas lease sales in the area – including a 150-well development (in which, to date, BLM has failed to produce and EA or EIS) and a 16-well development. *See* Environmental Assessment No. CO-150-2008-35-EA (2008) (“16-well EA”) (attached as Exhibit 57). In BLM’s consideration of cumulative impacts in the 16-well development, BLM concluded, without support, that “[o]ther projects, including other oil/gas drilling, are foreseeable, but it is not anticipated that cumulative impacts of any significance would occur.” 16-well FONSI (attached as Exhibit 58). Given the now comprehended scale of the August 2012 Lease Sale, this conclusion is even more outrageous. The information provided herein regarding the significant impacts of oil and gas fracking fluids, disposal ponds, GHG pollution, air quality, and wildlife impacts all warrant meaningful attention – BLM’s traditional, and rather glib conclusion, that “the limited scale of activity creates ... minimal cumulative effects,” is both insufficient and devoid of reality. *Id.*

Compounding the problem, BLM has historically failed to consider other development in the area, including massive coal mining operations. Coal mining adds to the cumulative impacts, including impacts to air and water quality, habitat destruction and fragmentation, and loss of wild areas and the aesthetic, recreational, and spiritual benefits derived therefrom. Another BLM map illustrates the extent of coal reserves leases.<sup>91</sup>

In addition to the cumulative land disturbance from energy development in the region, BLM has failed to consider the cumulative impacts of air pollution caused by this development. As the Endocrine Disruption Exchange has noted:

In addition to the land and water contamination issues, at each stage of production and delivery tons of toxic volatile compounds, including benzene, toluene, ethylbenzene, xylene, etc., and fugitive natural gas (methane), escape and mix with nitrogen oxides from the exhaust of diesel-driven, mobile and stationary equipment to produce ground-level ozone. Ozone combined with particulate matter less than 2.5 microns produces smog (haze). Gas flared produced ozone has created a serious air pollution problem similar to that found in large urban areas, and can spread up to 200 miles beyond the immediate region where gas is being

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<sup>90</sup> Map of Oil and Gas Leasing (attached as Exhibit 56).

<sup>91</sup> Map of Coal and Uranium (attached as Exhibit 59).

produced. Ozone not only causes irreversible damage to the lungs, it is equally damaging to conifers, aspen, forage, alfalfa, and other crops commonly grown in the West. Adding to this is the dust created by fleets of diesel-driven water trucks working around the clock hauling the constantly accumulating condensate water from well pads to central evaporation pits.

The Endocrine Disruption Exchange, Chemicals in Natural Gas Operations Introduction (attached as Exhibit 60). Not only does oil and gas development contribute to air pollution, coal development in the region further exacerbates the issue. *See, e.g.*, BLM, Environmental Assessment for Elk Creek East Tract Coal Lease, DOI-BLM-CO-150-2008-53 EA (April 21, 2011) (“Elk Creek EA”) (attached as Exhibit 61).

In addition to the cumulative effects of conventional air pollution, energy development in the region is causing significant GHG pollution in the form of methane emissions. As discussed above, BLM has failed in the past to consider the methane emissions of oil and gas development and its contribution to climate change. BLM has added to this error by failing to consider the cumulative methane emissions in the North Fork area. For example, The Elk Creek coalmine emits between 5.1 and 7.4 million cubic feet of methane *per day*, and a proposed 785-acre expansion would likely increase these emissions.<sup>92</sup> Elk Creek EA at 20. Other coalmines in the area also make significant contributions to methane. Indeed, BLM notes that underground coal mining accounts for 10.5 percent of U.S. methane emissions. Despite these figures and extensive coal development and reserves in the area, BLM has not accounted for the cumulative impact of these methane emissions in its analysis of additional oil and gas development.

Moreover, past BLM analysis in the area has recognized the significant and cumulative impacts from coal operations – requiring stipulations to mitigate impacts such as air quality and transportation impacts. In BLM’s North Fork Coal, Record of Decision (2000) (attached as Exhibit 63), BLM provided that “[t]he significant increase in truck traffic presents substantial public health and safety concerns.” North Fork Coal ROD, at 15. In this case, a stipulation was required to reduce truck traffic, and instead use rail to transport coal. BLM further stated that this “stipulation will also mitigate potential air quality impacts to Class I air sheds in the West Elk Wilderness and Black Canyon National Park.” *Id.* *See also* BLM, Final Environmental Impact Statement, Iron Point Coal Lease Tract, COC-61209, Elk Creek Coal Lease Tract, COC-61357, Iron Point Coal Exploration License, COC-61945 (February 2000) (“North Fork Coal EIS”) (attached as Exhibit 64).

Given the magnitude of dirty energy development already taking place in the North Fork Valley – as well as BLM’s past analysis identifying significant impacts therefrom – it is hard to imagine how BLM UFO could reach any other conclusion than that significant cumulative impacts may

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<sup>92</sup> Moreover, BLM likely underestimated these emissions; Oxbow Mining Company, the operator of Elk Creek Mine expressly told BLM that it “expect[s] that due to the increased overburden, increased levels of methane will be encountered in the underground tract.” *See* Letter from James T. Cooper, Oxbow Mining Co. to Uncompahgre Field Office Manager (Sept. 25, 2009) (attached as Exhibit 62).

result from the lease of an additional 30,000 acres for oil and gas development, compelling the need for an EIS prior to the August 2012 Lease Sale.

**vi. BLM UFO must consider impacts to the communities of the North Fork Valley prior to the lease sale.**

The quality of life for CHC members and those living in the North Fork Valley will unquestionably diminish if natural gas development moves forward in this area. Potential adverse effects, as discussed below, will be significant and consequential. Yet in past analysis, BLM UFO has failed to consider any of these known adverse effects in its NEPA analysis – a pattern we hope is not repeated here.

As noted above, BLM makes its threshold determination with respect to the significance of impacts based on two factors: “context” and “intensity” – either of which “may be sufficient to require preparation of an EIS in appropriate circumstances.” 40 C.F.R. § 1508.27; *Nat’l Parks*, 241 F.3d at 731. Specifically, the review of a project’s “intensity” will look to additional elements, such as whether the action is “highly controversial” or “highly uncertain.” 40 C.F.R. §§ 1508.27(b)(4), (5).

Effects are “highly controversial” when “substantial questions are raised as to whether a project may cause a significant degradation of some human environmental factor or there is a substantial dispute about the size, nature, or effect of the major federal action.” *Nat’l Parks*, 241 F.3d at 736 (internal citations omitted); *see also*, *Sierra Club v. U.S. Forest Service*, 843 F.2d 1190, 1193 (9<sup>th</sup> Cir. 1998); *Sierra Club v. Hassell*, 636 F.2d 1095, 1099 (5<sup>th</sup> Cir. 1981) (holding an EIS is required if the action may cause “a change in the [environmental] status quo.”). Whether a federal agency’s action “may cause a significant degradation of some human environmental factor” is analyzed in light of the “environmental status quo” existing at the time of the proposed action. *State of Louisiana v. Lee*, 758 F.2d 1081, 1086 (5<sup>th</sup> Cir. 1985). This can be interpreted to mean that NEPA applies to federal actions whose effects may cause changes in the physical environment. “What is involved [in NEPA] is a congressional declaration that... [the agency] will not intentionally initiate actions which do irreparable damage to the air, land, and water....” *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 772-73 (1983), *citing*, 115 Cong.Rec. 40416 (1969). In the instant case, opening 30,000 acres – which surround the communities of Hotchkiss, Paonia, Crawford and Somerset – to oil and gas development and its ensuing infrastructure – which includes the construction of well pads, evaporation ponds, roads, power lines, and pipelines – clearly will represent a dramatic and community altering change to the physical environment, warranting the preparation of an EIS.

Moreover, the communities of the North Fork Valley have mobilized in overwhelming opposition to the proposed oil and gas development, which certainly amounts to a “substantial dispute about the size, nature, or effect of the major federal action.” *Nat’l Parks*, 241 F.3d at 736. For example, community forums to discuss the August 2012 Lease Sale – hosted by CHC in the communities of Hotchkiss, Paonia, and Crawford – were widely attended and resulted in a major

community outcry to prevent development of the 22 nominated parcels.<sup>93</sup> Additionally, the testimony from among the 500 North Fork Valley residents who attended the January 28, 2012 public hearing, sponsored by CHC, demonstrate a substantial dispute about the effects of this major federal action.

The impacts from the August 2012 Lease Sale are also “highly uncertain.” An action is “highly uncertain or involve unique or unknown risks” where the “uncertainty may be resolved by further collection of data or where the collection of such data may prevent speculation on potential ... effects.” 40 C.F.R. § 1508.27(b)(5); *Nat’l. Parks*, 241 F.3d at 732 (internal citations and quotations omitted) (holding that an agency must generally prepare an EIS if the environmental effects of a proposed action are highly uncertain); *see also, Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1988) (holding that where questions remain as to the significance of a project’s effects and the agency cannot state definitively that significant impacts will not occur, the agency must prepare an EIS).

Impacts to human health represent an unknown hazard of hydraulic fracturing. Rapid oil and gas development – as the August 2012 Lease Sale calls for – has resulted in significant and undetermined public health concerns in communities throughout the country. For example, in Garfield County, Colorado, residents there have experienced health effects they believe to be caused from oil and gas development. “Community concerns range from mild complaints such as dizziness, nausea, respiratory problems, and eye and skin irritation to more severe concerns including cancer.”<sup>94</sup> Additionally, the community has “environmental concerns related to noise, odors, dust, and ‘toxic’ chemicals in water and air.”<sup>95</sup> After a thorough review of ambient air data across Garfield County, ATSDR determined that, “considering both theoretical cancer risks as well as non-cancer health effects and the uncertainties associated with the available data, it is concluded that the exposures to air pollution in Garfield County pose an indeterminate public health hazard for current exposures.”<sup>96</sup> ATSDR further provided that “estimated theoretical

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<sup>93</sup> *See e.g.*, Matt Kroschel, *Western Slope Community Fighting Energy Development in Its Backyard*, NEWS CHANNEL 5, January 5, 2012, available at: <http://www.krextv.com/news/around-the-region/Western-Slope-Community-Fighting-Energy-Development-In-Their-Backyards-136714328.html> (last visited Jan. 5, 2012) (includes the link to a video clip for a news story that appeared on air following the Paonia forum); *see also* Mark Jaffe, *Oil-and-gas lease proposal upsets residents in North Fork Valley*, THE DENVER POST, January 6, 2012, available at: [http://www.denverpost.com/business/ci\\_19684631#.TwcfafMQT9k.email](http://www.denverpost.com/business/ci_19684631#.TwcfafMQT9k.email) (last visited, Jan. 6, 2012).

<sup>94</sup> U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (“ATSDR”), *Health Consultation: Garfield County, Public Health Implications of Ambient Air Exposures to Volatile Organic Compounds as Measured in Rural, Urban, and Oil & Gas Development Areas* (2008), at 1 (attached as Exhibit 65).

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

cancer risks and non-cancer hazards for benzene [in the community], which is within the oil and gas development area, appear significantly higher than those in typical urban and rural area, causing some potential concern,” and later concluded that “[t]hese elevated levels are an indicator of the increased potential for health effects related to benzene exposure . . . in the oil and gas development area.”<sup>97</sup>

Leading doctors and scientists studying these issues recognize the unknown risks inherent to fracking. “We don’t know the chemicals that are involved, really; we sort of generally know,” Vikas Kapil, chief medical officer at National Center for Environmental Health, part of the U.S. Centers for Disease Control and Prevention, said at a conference on hydraulic fracturing.<sup>98</sup> “We don’t have a great handle on the toxicology of fracking chemicals.”<sup>99</sup> Christopher Portier, director of the CDC’s National Center for Environmental Health and Agency for Toxic Substances and Disease Registry further provided that “additional studies should examine whether wastewater from wells can harm people or the animals and vegetables they eat.”<sup>100</sup> “We do not have enough information to say with certainty whether shale gas drilling poses a threat to public health.”<sup>101</sup>

Indeed, a new study demonstrates that animals, especially livestock, are sensitive to the contaminants released into the environment by drilling and by its cumulative impacts.<sup>102</sup> Because animals often are exposed continually to air, soil, and groundwater and have more frequent reproductive cycles, animals can be used to monitor potential impacts to human health – they are shale gas drilling’s “canary in the coalmine.” The study evaluated all available fracking-related reports on sick or dying animals. Although secrecy surrounds the fracking industry, “a

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<sup>97</sup> *Id.*

<sup>98</sup> Alex Wayne, *Fracking Moratorium Urged by U.S. Doctors Until Health Studies Conducted*, BLOOMBERG NEWS, January 9, 2012, available at: <http://www.bloomberg.com/news/2012-01-09/fracking-moratorium-urged-by-u-s-doctors-until-health-studies-conducted.html> (last visited Jan. 10, 2012); *see also*, Alex Wayne and Katarzyna Klimasinska, *Health Effects of Fracking for Natural Gas Need Study, Says CDC Scientist*, BLOOMBERG NEWS, January 4, 2012, available at: <http://www.bloomberg.com/news/2012-01-04/health-effects-of-fracking-for-natural-gas-need-study-says-cdc-scientist.html> (last visited Jan. 4, 2012).

<sup>99</sup> *Id.*

<sup>100</sup> Alex Wayne and Katarzyna Klimasinska, *Health Effects of Fracking for Natural Gas Need Study, Says CDC Scientist*, BLOOMBERG NEWS, January 4, 2012, available at: <http://www.bloomberg.com/news/2012-01-04/health-effects-of-fracking-for-natural-gas-need-study-says-cdc-scientist.html> (last visited Jan. 4, 2012).

<sup>101</sup> *Id.*

<sup>102</sup> Michelle Bamberger and Robert E. Oswald, *Impacts of Gas Drilling on Human and Animal Health*, NEW SOLUTIONS, VOL. 22(1) 51-77 (2012) (attached as Exhibit 66).

few ‘natural experiments’ have provided powerful evidence that fracking can harm animals.”<sup>103</sup>  
For example:

Two cases involving beef cattle farms inadvertently provided control and experimental groups. In one case, a creek into which wastewater was allegedly dumped was the source of water for 60 head, with the remaining 36 head in the herd kept in other pastures without access to the creek. Of the 60 head that were exposed to the creek water, 21 died and 16 failed to produce calves the following spring. Of the 36 that were not exposed, no health problems were observed, and only one cow failed to breed. At another farm, 140 head were exposed when the liner of a wastewater impoundment was allegedly slit, as reported by the farmer, and the fluid drained into the pasture and the pond used as a source of water for the cows. Of those 140 head exposed to the wastewater, approximately 70 died and there was a high incidence of stillborn and stunted calves. The remainder of the herd (60 head) was held in another pasture and did not have access to the wastewater; they showed no health or growth problems. These cases approach the design of a controlled experiment, and strongly implicate wastewater exposure in the death, failure to breed, and reduced growth rate of cattle.<sup>104</sup>

The North Fork Valley is home to pristine water resources and a vibrant and flourishing organic farming and ranching community. Indeed, the Valley Organic Growers Association has 66 individually registered organic farms – with significant annual growth – and “the largest concentration of organic, sustainable growers in the state.”<sup>105</sup> Many more farms that have not gone through the organic certification process nevertheless grow and sell chemical-free produce that is essentially organic. Moreover, the U.S. organic industry itself is rapidly growing, representing substantial economic potential in the North Fork Valley both now and in the future.<sup>106</sup> Even a remote chance that these community resources could be negatively impacted from oil and gas development is too great a risk.

The health problems and uncertainties that proliferate in communities where oil and gas development takes place warrants the further collection of data and research, as contemplated under NEPA, before such development can be made possible through the August 2012 Lease

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<sup>103</sup> See Peter Montague, *Why Fracking and Other Disasters Are So Hard to Stop*, HUFFINGTON POST, Jan. 20, 2012, available at: [http://www.huffingtonpost.com/peter-montague/why-fracking-and-other-di\\_b\\_1218889.html](http://www.huffingtonpost.com/peter-montague/why-fracking-and-other-di_b_1218889.html) (last visited Jan. 23, 2012).

<sup>104</sup> Exhibit 66, at 60.

<sup>105</sup> Valley Organic Growers Association, *VOGA History*, available at: <http://www.vogaco.org/about-us.html> (last visited Dec. 20, 2012); see also 2011-2012 VOGA Directory (attached as Exhibit 67).

<sup>106</sup> See Dawn Thilmany, *The U.S. Organic Industry: Important Trends and Emerging Issues for the USDA* (2006) (attached as Exhibit 68).

Sale. A FONSI must be supported by an actual NEPA hard look at these impacts. This ensures that impacts are below NEPA's significance threshold before a FONSI can be justified. It is hard to imagine that a FONSI could be supported in the present context, suggesting that the preparation of an EIS is necessary to address the serious uncertainties that are known to exist.

In addition to those impacts identified above, adverse effects may also include, but are not limited to:

- Air and water contamination accompanied by individuals in the community who will become sick and/or die;
- An increase in traffic density from heavy trucks;
- An increase in vehicle and diesel emissions from increased heavy truck traffic and industry operated generators;
- An increase in costs to the local community of maintaining roads destroyed by the increase in heavy truck traffic;
- Fragmentation and destruction of wildlife habitat resulting from road building, well pad construction, and pipeline construction;
- Industrialization of a rural, agricultural county accompanied by a loss of valued wildlands;
- Reduction of deer and elk populations resulting in diminished viewing and hunting opportunities;
- Nuisance noise and earth vibrations resulting from underground explosions from the fracking process and round-the-clock well pad operations;
- Loss of scenic viewsheds;
- Diminished and stifled real estate values in a market attempting to recover;<sup>107</sup>
- Loss of dark night skies as each well pad keeps dozens of lights on all night long;

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<sup>107</sup> See letter from Bob Lario, RE/MAX Mountain West Real Estate, to BLM (Jan. 3, 2012) (attached as Exhibit 69). Moreover, Bernadette Stech, of Paonia Realty, reports that in early December she showed a couple from Texas a number of properties in the Valley. Before the couple returned home they assured her they would be making an offer on a property within the next week. Then on December 7, BLM announced the proposed 30,000-acre lease sale. When the prospective buyers learned of the proposed lease sale they notified Bernadette that they had decided to postpone their purchase until BLM made a decision on the lease sale. If the gas lease sale goes forward, they will not make a purchase, and Paonia Realty will lose the sale and \$9000 in income. According to Bernadette, "I think the gas lease sale will have a heavy negative impact on sales to out-of-town buyers."

- Oil and gas-related seismic activity that threatens the structural integrity of irrigation canals;
- An influx of transient workers into the community straining the ability of local governments and non-governmental organizations to provide services such as food banks, schools, libraries, animal shelters, medical facilities, ambulance, fire, and police protection;
- Displacement and elimination of recreation opportunities, such as hiking, camping, hunting, fishing, boating, and mountain bike riding.

The multitude of adverse community impacts that promise to result from the proposed oil and gas lease sale requires analysis and the preparation of an EIS.

If the lease sale goes forward, BLM will force the communities of the North Fork Valley to accept all the risks of oil and gas development, while the rewards (profit) will be sent off to the corporate headquarters of the oil and gas companies – none of which are in the North Fork. The residents of the North Fork Valley find it unacceptable for BLM UFO to impose these risks on their community without their approval. Clearly, the huge turnout of people vehemently opposed to the August 2012 Lease Sale at CHC held public meetings sends a clear message that BLM does not have the consent of the citizenry to sell these leases and place the community at risk. CHC implores BLM UFO to reevaluate its decision to allow the degradation of our public lands and the communities that surround them through a sale to the highest bidder.

### **III. The Effects of the August 2012 Lease Sale on ESA Listed Species Must be Considered Before Agency Action is Taken.**

The Endangered Species Act (“ESA”) implements a Congressional policy that “all Federal Departments and agencies shall seek to conserve endangered species and threatened species.” 16 U.S.C. § 1531(c)(1). An “endangered species” is a species of plant or animal that is “in danger of extinction throughout all or a significant portion of its range,” while a “threatened species” is one which is likely to become endangered within the foreseeable future. 16 U.S.C. § 1532(6), (20). The operative core of the ESA is a list maintained by the Secretary of the Interior of threatened and endangered species, and the ESA permits citizens to petition the Secretary to add species to that list. 16 U.S.C. § 1533(b)(3)(A).

At the heart of Congress’s plan to preserve endangered and threatened species is Section 7 of the ESA, which places affirmative obligations upon federal agencies. Section 7(a)(1) provides that all federal agencies “shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species.” 16 U.S.C. § 1536(a)(1).

The mandate of section 7(a)(2) is even clearer:

Each Federal agency shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], 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 habitat of such species which is determined ... to be critical, unless such agency has been granted an exemption for such action ... pursuant to subsection (h) of this section.

*Id.* § 1536(a)(2). Thus, section 7(a)(2) imposes two obligations upon federal agencies. The first is *procedural* and requires that agencies consult with the FWS to determine the effects of their actions on endangered or threatened species and their critical habitat. *See Id.* § 1536(b). The second is *substantive* and requires that agencies insure that their actions not jeopardize endangered or threatened species or their critical habitat. *See Id.* § 1536(a)(2); *see also, Florida Key Deer v. Paulison*, 522 F.3d 1133, 1138 (11<sup>th</sup> Cir. 2008).

The requirements of the ESA are triggered by “any ‘agency action’ which may be likely to jeopardize the continued existence of the species or its habitat.”<sup>108</sup> 16 U.S.C. § 1536(a). In other words, an agency proposing to take an action must inquire whether any endangered or threatened species “may be present” in the area of the action. When there exists a chance that such species *may be present*, the agency must conduct a biological assessment (“BA”) to determine whether or not the species *may be affected* by the action. *See* 16 U.S.C. § 1536(c) (emphasis added).

The United States Fish and Wildlife Service (“FWS”) lists eleven species found within the BLM UFO as threatened, endangered, or candidate species. *See* 16-well EA, at 26, 27 (Table 7) (providing a comprehensive inventory of listed species; with the exception of the greenback cutthroat trout).

Among the eleven endangered or threatened species, the 16-well EA specifically identifies several endangered Colorado River fish species that may be affected as a result of the underlying agency action in that case. As provided above, the Gunnison basin is home to four fish species that are both state and federally listed, and include the Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), Bonytail chub (*Gila Elegans*), and Razorback sucker (*Xyrauchen texanus*).<sup>109</sup> Occupied habitat for these endangered species includes the lower Gunnison River, where previous BLM NEPA analysis has identified razorback suckers and Colorado pikeminnows as present. *See* 16-well EA at 28 (citing USFWS 1994). This stretch of

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<sup>108</sup> To trigger the agency duty under the ESA, there must be a qualifying federal agency action. “Agency action” for ESA purposes is defined by regulations promulgated by the Secretaries of Commerce and the Interior: “Action means all *activities or programs* of any kind *authorized, funded, or carried out*, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, *leases*, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.” 50 C.F.R. § 402.02 (emphases added). The decision to lease the parcels here is an agency action within this definition.

<sup>109</sup> TMDL Report, at 5. *See also* 16-well EA at 28.

river is also identified as “critical habitat” for these two fish species.<sup>110</sup> *Id.* The North Fork EA provides that this critical habitat is located 55 miles downstream of the project area, but it is important to note that parcels considered in the 16-well EA are far more removed from this habitat than the parcels considered in the August 2012 Lease Sale – which, given their size and location, promise to have a far greater impact on these fish species and their critical habitat. Section 1536(a)(2) requires federal agencies, when considering the effect of their actions on a species' critical habitat, to consider the effect of those actions on the species' recovery. *See Center for Native Ecosystems v. Cables*, 509 F.3d 1310, 1322 (10<sup>th</sup> Cir. 2007).

Moreover, an EA completed for a neighboring coal development identifies the Greenback cutthroat trout as existing in this area, and specifically identifies Deep Creek as within its range. *See Elk Creek EA* at 32.<sup>111</sup> Deep Creek feeds directly into Paonia Reservoir, and maps released for the August 2012 Lease Sale shows that parcel no. 6215 encompass portions of Deep Creek where the Greenback cutthroat trout are known to exist.<sup>112</sup>

In addition to these fish species, several other listed and sensitive species may be impacted by the proposed August 2012 Lease Sale. For example, the threatened Canada lynx, the BLM sensitive Gunnison sage grouse and Northern leopard frog, as well as listed plant species such as the Clay-loving wild buckwheat and Colorado hookless cactus, may be affected by proposed development.<sup>113</sup> The ESA requires that BLM UFO comply with both the substantive and procedural requirements of section 7(a)(2) prior to the lease sale. Furthermore, if an acting agency determines that any action it takes “may affect listed species or critical habitat,” 50 C.F.R.

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<sup>110</sup> Critical habitat is impaired when features essential to the species' conservation are impaired. “Conservation” is defined as “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.” 16 U.S.C. § 1532(3); *see also*, *Center for Native Ecosystems v. Cables*, 509 F.3d 1310, 1321-22 (10<sup>th</sup> Cir. 2007). Under this definition, conservation encompasses recovery. *See also* 68 Fed.Reg. at 37,280 (describing the actions “necessary for conservation of the species,” into designation of critical habitat). It follows that critical habitat is “adversely modified” by actions that adversely affect a species' recovery and the ultimate goal of delisting.

<sup>111</sup> *See* U.S. Fish and Wildlife Service, *Species Profile: Greenback Cutthroat Trout*, available at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=E00F> (last visited Dec. 20, 2011); *see also* U.S. FISH AND WILDLIFE SERVICE, GREENBACK CUTTHROAT TROUT RECOVERY PLAN (March 1998).

<sup>112</sup> Area Overview, as well as Detailed Area Maps, available at: [http://www.blm.gov/co/st/en/BLM\\_Information/nepa/ufo/august\\_lease\\_sale.html](http://www.blm.gov/co/st/en/BLM_Information/nepa/ufo/august_lease_sale.html) (last visited Dec. 20, 2011).

<sup>113</sup> *See* Andrea Wang, *ESA Listed Species, BLM Sensitive Species, and USFWS Birds of Conservation Concern*, Jan. 20, 2012 (including parcel specific information and species impact analysis) (attached as Exhibit 70). *See also* Species Template (identifying species and habitat values by parcel) (attached as Exhibit 71).

§ 402.14(a), a biological opinion (“BiOp”) must be initiated through formal consultation with U.S. Fish and Wildlife Service (“FWS”) prior to taking final agency action. 50 C.F.R. § 402.02.

In the instant case, a BiOp must be prepared and formal consultation initiated with FWS before the August 2012 Lease Sale, as the low threshold under the ESA will assuredly be triggered by the proposed leasing of the 22 nominated parcels.

#### **IV. Conclusion**

The impacts outlined above are some of the myriad impacts that must be analyzed before BLM UFO can proceed in offering the 22 nominated parcels for oil and gas development in the August 2012 Lease Sale. Moreover, there are unquestionably additional impacts that we have not identified at this early stage which must be also be explored. What BLM UFO cannot do is proceed as it appears to be doing – with a predetermined schedule and a rubber stamp. The lease sale itself represents an irretrievable commitment of resources that BLM cannot undo at a later stage. If BLM proceeds to offer these parcels, the potentially devastating impacts to the North Fork Valley must be analyzed in an EIS before the lease sale occurs. However, BLM UFO has the broad discretion – and, indeed, as explained above, the responsibility – to withdraw these 22 parcels from nomination altogether, or at the very least to postpone the sale pending the outcome of its NEPA and ESA analysis. We implore BLM UFO to take a precautionary approach with respect to these critical public lands and reject the expressions of interest to lease the nominated parcels.

Should you have any questions, please do not hesitate to contact me.

Sincerely,



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