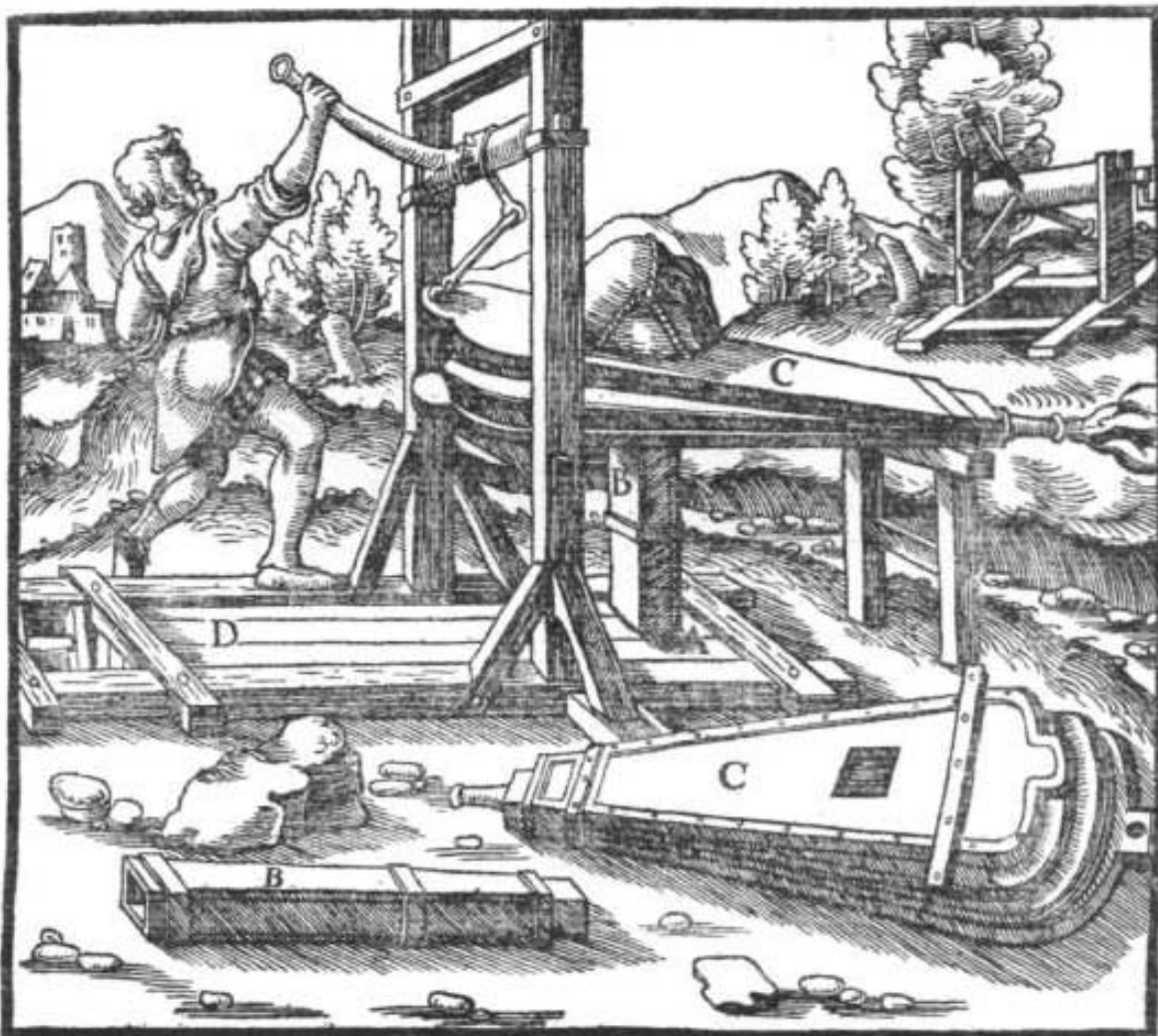


U.S. LAWS AND POLICIES REGARDING CAPTURING METHANE GAS

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A—SMALLER PART OF SHAFT. B—SQUARE CONDUIT. C—BELLOWS. D—LARGER PART OF SHAFT.

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I. INTRODUCTION¹

The right to ventilate mine methane is “an essential element of the right to mine ... No one questions the coal owner’s right to ventilate coalbed methane in the course of mining. ‘The grant of coal mining rights would be useless if it did not include the right to ventilate methane gas from the coal mining area.’ *Newman v. RAG Wyoming Land Co.*, 53 P.3d at 550 (citing *NCNB Texan National Bank, N.A. v. West*, 631 So.2d 212, 226 (Ala. 1993)).

The overriding concern with mine methane has always been, and must be, the safety of the miners. Mine methane, as an unwanted and unsafe waste resulting from underground mining, has historically been vented into the atmosphere, and little attention has been paid to this practice. More recently, mine methane has been recognized as a target for reducing greenhouse gas emissions, and a potential source of energy supply including energy for mine operations. However, there have been many technical challenges in developing mine methane resources, particularly where development involved drilling of wells in or near a working mine.

Mine methane must be vented to protect mine safety. Because of mine safety concerns, there are no federal or state regulations which control or prohibit the venting of mine methane into the atmosphere, nor are there legal mechanisms which require capturing of the gas. This means that any current efforts to put the gas to any beneficial use, or to reduce its impact on the environment, are strictly voluntary by the mine operator.

In general, mineral development on federal lands is managed by the U.S. Bureau of Land Management (BLM) and development of energy minerals (coal, oil and gas, and certain industrial minerals such as sodium) is managed under leases issued pursuant to the Mineral Leasing Act.² The Mineral Leasing Act authorizes the Secretary of the Interior to issue leases to extract and develop deposits of *coal bed* methane,³ however, BLM regulations do not specifically provide a process for an applicant to obtain a lease for *mine methane*.⁴ In addition, while the Mine Safety Act and the regulations promulgated thereunder by the Mine Safety and Health Administration (MSHA) cover all safety and health aspects of mining, that law and its regulations do not address mine methane once it leaves the mine. Nor is mine methane currently regulated by the Environmental Protection Agency (EPA) under its statutory authority, such as the Clean Air Act.⁵

This paper will examine the current laws regarding mine methane, beginning with a review of the federal land management and other agencies whose authority touches mine methane, proceeding with a review of three case studies of recent actions regarding mine methane, and

¹ The authors thank members of the Holland & Hart, LLP Resources Department, who provided much of the research for this paper, including Catherine Guzelian, Andy Irvine, Karol Kahalley, Melissa Meirink., and Sandi Snodgrass.

² 30 U.S.C. § 181 *et seq.* (<http://www.law.cornell.edu/uscode> (visited September 14, 2009)). All citations to the U.S. Code are to the 2009 electronic version unless otherwise noted.

³ See *Amoco Production Co. v. Southern Ute Tribe*, 526 U.S. 865 (1999). See also *Pennaco Energy, Inc., v. U.S. Dep’t of the Interior*, 377 F.3d 1147, 1152 n.2 (10th Cir. 2004) (“It is undisputed that the oil and gas leases at issue conveyed the right to extract coal bed methane”).

⁴ 30 U.S.C. § 226. The Mineral Leasing Act gives BLM responsibility for oil and gas leasing on BLM land, and the regulations governing the lease program are found at 43 C.F.R. Parts. 3000 and 3100.

⁵ 42 U.S.C. § 7401 *et seq.*

finishing with a brief review of mine methane as it is treated on private lands and under consideration in Congress.

Mine methane has “long been considered a dangerous waste product of coal mining.”⁶ Consequently, while there is much current interest in mine methane as both an energy source and as a potential means of reducing greenhouse gas emissions, protecting the safety of underground miners must remain the primary focus of all discussions in this field.

II. LAWS AND POLICIES REGARDING CAPTURING METHANE GAS

1. FEDERAL LAND MANAGEMENT AGENCIES AND LAWS

The Mineral Leasing Act has a two-fold purpose: to promote wise development of public lands, and to provide an incentive for private enterprise to do so. This was explained by the United States District Court for the District of Wyoming in *Mountain States Legal Foundation v. Andrus*⁷ as follows:

The Mineral Leasing Act was intended to promote wise development of natural resources and to obtain for the public reasonable financial returns on assets belonging to the public.

A. Bureau of Land Management

The Bureau of Land Management (BLM), an agency of the Department of the Interior, manages more federal land than any other agency – 256 million surface acres and 700 million sub-surface acres of mineral estate. As a result of this responsibility, BLM plays a key role in ensuring that the country’s needs are met by managing both federal renewable and non-renewable sources of energy in an environmentally sound way.⁸ Despite the Secretary of the Interior’s broad authority to further the policy goals of the Mineral Leasing Act, the BLM does not currently have a process for managing mine methane.



However, this broad authority could be used to permit the capture and use of mine methane that would otherwise be vented to the atmosphere.

(i) *Secretary’s Authority: Mineral Leasing Act*

The Secretary of the Interior may to do whatever is necessary to accomplish the goals of the Mineral Leasing Act. This authority was granted in section 32 of the original Mineral Leasing Act, now codified at 30 U.S.C. § 189,⁹ which reads as follows:

⁶ *Newman v. RAG Wyoming Land Co.*, 53 P.3d 540, 543 (Wyo. 2002) (citing *Amoco Production Co. v. Southern Ute Indian Tribe*, 526 U.S. 865 (1999)).

⁷ 499 F.Supp. 383, 392 (D. Wyo. 1980) (internal citation omitted).

⁸ See Bureau of Land Management, Energy (<http://www.blm.gov/wo/st/en/prog/energy.html> (visited August 31, 2009)).

⁹ U.S. Code, Title 30, Mineral Lands and Mining, Ch. 3A, Leases and Prospecting Permits (“Section 189”).

The Secretary of the Interior is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of this chapter....

Section 189 has been interpreted many times, and courts have consistently acknowledged its broad grant of authority.

For example in *Getty Oil Company v. Clark*,¹⁰ involving diligence conditions imposed on suspension of oil and gas leases, the court held that the Secretary had the authority to impose conditions in a suspension order because Section 189 “grants the Secretary broad powers and authority commensurate with the broad responsibilities imposed on his office.”¹¹

The court in *Getty Oil* went on to invoke a “general principle of law” which allows the Secretary to achieve the goals of the legislation under the implied powers given to the Secretary to implement the provisions of the Mineral Leasing Act:

[It] is a general principle of law that where the end is required the appropriate means are given and every grant of power carries with it the use of necessary and lawful means for its effective execution. There is therefore conferred by necessary implication every power proper and necessary to the exercise of the powers and duties expressly given and imposed.¹²

The U.S. District Court for the District of Columbia, in a recent dispute over royalty calculations for extraction of coalbed methane from federal land, similarly relied upon Section 189 in upholding the Secretary’s authority to manage the royalty valuation process. In *Devon Energy Corp. v. Kempthorne*¹³ the court recognized that the Mineral Leasing Act “gives DOI the authority ‘to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of’ the Act.”

Many other courts have recognized the wide scope of authority granted to the Secretary in Section 189. In the Mineral Leasing Act “Congress has granted *rather sweeping authority* ‘to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of [the leasing statutes].’”¹⁴ and delegated “*broad authority* to the Secretary of the Interior to promulgate regulations...” under the Act.¹⁵ One court, after quoting section 189, said simply: “That, to us, is a *broad grant of authority*.”¹⁶

The Interior Board of Land Appeals (IBLA) has specifically recognized that the Mineral Leasing Act’s broad rulemaking authority at Section 189 applies to sodium

¹⁰ 614 F.Supp. 904 (D. Wyo. 1985).

¹¹ *Id.* at 916 (internal citations omitted).

¹² *Id.* (citing *Marrow v. Clayton*, 326 F.2d 36, 44 (10th Cir. 1963)).

¹³ 551 F.3d 1030 (D.C. Cir. 2008)

¹⁴ *Independent Petroleum Ass’n of America v. DeWitt*, 279 F.3d 1036 (D.C. Cir 2002) (emphasis added).

¹⁵ *Natural Resources Defense Council, Inc. v. Jamison*, 815 F. Supp. 454, 456 (D.D.C. 1992) (emphasis added).

¹⁶ *Arch Mineral Corp. v. Lujan*, 911 F.2d 408, 415 (Wyo. 1990) (emphasis added).

leases. In *General Chemical (Soda Ash) Partners*,¹⁷ an appeal from BLM’s rejection of applications to renew four sodium leases, the IBLA discussed the Secretary’s authority to prescribe terms for sodium leases. The IBLA relied on Section 189 to hold that the Secretary can include particular terms in a lease (including due diligence requirements) without being required to undertake notice-and-comment rulemaking. The IBLA stated that while “the Secretary *could* choose to prescribe certain lease terms by rule using the [Mineral Leasing Act’s] rulemaking authority at 30 U.S.C. § 189 (2000), he is not *required* to do so.”¹⁸

Similarly, in *American Gilsonite Co.*,¹⁹ the IBLA noted how the Secretary is the “general manager” of the public lands and that in administering the Mineral Leasing Act, “the Secretary exercises a discretionary function. ... It has long been recognized that the Secretary may, within the confines of the statute, create and operate a program designed to implement the provisions of the Mineral Leasing Act.”

Finally, the Solicitor of the Department of the Interior has reached similar conclusions regarding the Secretary’s authority under the Mineral Leasing Act. In a 1982 opinion²⁰ the Solicitor described how the general rulemaking authority under the Mineral Leasing Act granted “ample authority” for the Secretary to set due diligence requirements:

The general rulemaking powers of the Secretary applicable to all leases under the [Mineral Leasing Act] are controlling. Section 32 of the [Mineral Leasing Act], 30 U.S.C. § 189. ... Inasmuch as the purpose of the [Mineral Leasing Act] was to promote prospecting and development, consistent with the public interest we are of the opinion that the Secretary thus has ample authority to fix reasonable diligence terms at the time of lease renewal.²¹

In sum, the Secretary’s authority under Section 189 of the Mineral Leasing Act is sufficiently broad to empower the Secretary to amend federal mineral leases to allow the capture and use of mine methane that is now being vented into the atmosphere.²²

(ii) Secretary’s Authority: FLPMA

The Secretary also has broad authority to act under the Federal Land Policy and Management Act (FLPMA).²³ FLPMA provides that multiple use and sustained yield concepts should be used unless the law specifies otherwise, that public lands should be managed in a manner which recognizes the country’s need for

¹⁷ 176 IBLA 1 (Sept. 10, 2008).

¹⁸ *Id.* (emphasis in original).

¹⁹ 111 IBLA 1, 13 (Sept. 19, 1989)(citing Section 189).

²⁰ Sol. Op., “Sodium Lease Renewals,” M-36943, 176 IBLA 1, 89 I.D. 173 (1982) (the “1982 Solicitor’s Opinion”).

²¹ 176 IBLA at 9 (citation omitted).

²² Granting such amendments is not rulemaking requiring Administrative Procedure Act notice-and-comment procedures because, as stated in the 1982 Solicitor’s Opinion at footnote 6, it would not “create rights, ... impose obligations on regulated non-Federal parties, [nor] ... effect a *change* in existing law, rules or lease terms.” (emphasis added).

²³ 43 U.S.C. § 1701(a).

domestic sources of minerals, and that the BLM has broad authority to act to further these goals.²⁴

Section 302(b) of FLPMA²⁵ provides that in managing the public lands, the Secretary of the Interior shall “regulate, through easements, permits, leases, licenses, published rules, or other instruments as the Secretary deems appropriate, the use, occupancy, and development of the public lands.” The implementing regulations for this section provide that “[u]ses which may be authorized include residential, agricultural, industrial, and commercial,” and that “[a]ny use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this part.”²⁶

For mine methane development, a lease under Section 302(b) of FLPMA would be preferable to a permit, which is revocable and short-term (three years maximum), or to an easement, which is a non-possessory, non-exclusive interest in lands.²⁷ Leases are to be used “to authorize uses of public lands involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time.” Land use authorizations may be offered on a negotiated, non-competitive basis in the judgment of the authorized BLM officer based on equitable factors.²⁸

Given the broad sweep of FLPMA and its implementing regulations, a FLPMA lease may be a possible means for obtaining approval to capture mine methane on federal lands.

(iii) Reliance on General Grant of Authority

The Secretary, as shown above, has broad general authority under Section 189 of the Mineral Leasing Act. Careful research has uncovered no specific grant of authority in the Mineral Leasing Act, the regulations under the Act, or elsewhere, that address the capture and use of methane that must be removed from underground mines, or the Secretary’s authority with respect to that matter. In such a situation, however, the lack of specific authority does not prevent exercise of the grant of general authority.

The Supreme Court has addressed the ability of the Secretary to act in situations where specific grants of authority are lacking. In *Boesche v. Udall*,²⁹ the Court was faced with the question of “whether the Secretary of the Interior has authority to cancel in an administrative proceeding a lease of public lands issued under the provisions” of the Mineral Leasing Act. First, the Court stated that the Secretary, “under his general powers of management over the public lands, had authority to cancel this lease ... unless such authority was withdrawn by the Mineral Leasing Act.”³⁰ The Court then quoted *Cameron v. United States*,³¹ as

²⁴ See *American Law of Mining*, §4.21, Rocky Mtn. Min. L. Found., 2001.

²⁵ 43 U.S.C. § 1732(b) (“Section 302(b)”).

²⁶ 43 C.F.R. § 2920.1-1(a).

²⁷ *Id.* § 2920.0-5(b) and (d).

²⁸ 43 C.F.R. § 2920.5-4(b).

²⁹ 373 U.S. 472 (1963).

³⁰ *Boesche*, 373 U.S. at 476.

precedent for the rule that lack of specific authority does not negate the existence of authority to act:

True, the mineral land law does not in itself confer such authority on the Land Department. Neither does it place the authority elsewhere. But this does not mean that the authority does not exist anywhere, for, in the absence of some direction to the contrary, the general statutory provisions before mentioned vest it in the Land Department.

The 1982 Solicitor's Opinion, after reviewing the legislative history of the Mineral Leasing Act, also concluded that a lack of specific authority does not mean the Secretary has *no* authority to act:

Since section 24 on its face does not specifically prescribe due diligence requirements and there is nothing in the legislative history of the 1928 sodium amendments which suggests that the Secretary has no authority to use minimum production or similar lease provisions, the general rulemaking powers of the Secretary applicable to all leases under the [Mineral Leasing Act] are controlling. Section 32 of the [Mineral Leasing Act], 30 U.S.C. § 189....

The lack of a specific grant to the Secretary by Congress of the authority to regulate the capture and use of mine methane does not prohibit the Secretary from exercising the general authority granted under the Mineral Leasing Act, or under FLPMA to do so. Instead, the Secretary could rely on these general grants of authority to allow holders of federal mineral leases to capture and use mine methane. To date, the Secretary has not used this authority to issue regulations allowing such use of mine methane, nor, with one exception,³² has this authority been used to amend federal mineral leases to approve the capture and use of mine methane.

(iv) Policy goals

As noted above, there are two important policies underlying the capture and use of mine methane: the necessity of protecting the safety of underground miners, and the Mineral Leasing Act's goal of promoting wise development of public lands.

The Mineral Leasing Act's two-fold purpose, to promote wise development of public lands, and to provide an incentive for private enterprise to do so has been recognized by federal courts³³ and by the Solicitor of the Department of the Interior.³⁴

³¹ 252 U.S. 450, 461 (1920).

³² See *infra* at Section 4.B.

³³ *Mountain States Legal Foundation v. Andrus*, 499 F.Supp. 383, 392 (D. Wyo. 1980).

³⁴ "Sodium Lease Renewals," M-36943, 176 IBLA 1, 89 I.D. 173 (1982).

The Secretary has authority to allow methane capture and use. Utilizing this authority would further the policies of using resources wisely, preventing waste, and protecting the environment. Allowing private lessees to capture and use mine methane would provide the incentive to further these policies.

B. United States Forest Service

The United States Forest Service (USFS) was created in 1905 within the Department of Agriculture to manage the surface resources of public lands designated as National



Forests “to provide the greatest amount of good for the greatest amount of people in the long run.”³⁵ Congress has since directed the Forest Service to manage national forests for additional multiple uses such as water conservation, forage uses, wildlife habitat, wood production, and recreation. “Multiple use” means managing resources under the best combination of uses to benefit the American people while ensuring the productivity of the land and protecting the quality of the environment.³⁶

Among its responsibilities, USFS issues permits for the surface use of National Forest lands for mining related activities. Many National Forest lands overlie federal mineral deposits in Western states, including Colorado, Utah, Wyoming and Montana. Any use of the surface of these lands for mining, such as roads, surface production facilities, pipelines, or wells for mine methane release, capture or use, requires obtaining a surface use permit from the USFS.

In a recent example of this permitting authority, USFS was asked to grant surface use permits for mine methane venting capture facilities at the West Elk Coal Mine (West Elk) in western Colorado, discussed in Section 4.B below. The USFS analyzed the environmental impacts of the construction and operation of up to 168 drainage wells to vent mine methane and determined that the wells could potentially release in excess of 7 million cubic feet of methane into the atmosphere daily. The USFS recognized that the specific purpose and need for the project was to “ensure the health and safety of the underground mine and facilitate efficient recovery of leased federal coal reserves.”³⁷ Significantly, then, USFS determined that it could not require mine methane capture as a condition of final approval, and on March 7, 2008 issued its decision approving surfaces uses related to the West Elk expansion project.

The USFS analysis shows that the surface management agency understood both the environmental benefits of mine methane capture and the overriding need to protect the safety of underground miners.

C. National Environmental Policy Act

The National Environmental Policy Act (NEPA) is a procedural act that requires the preparation of a detailed environmental analysis of all “major federal actions significantly affecting the quality of the human environment,” including where necessary the

³⁵ See National Forest Service, About Us (<http://www.fs.fed.us/aboutus/meetfs.html>. (visited August 31, 2009)).

³⁶ *Id.*

³⁷ See *infra* at notes 96-997 and accompanying text.

preparation of an environmental assessment (EA) or a more detailed environmental impact statement (EIS).³⁸ BLM's issuance of a mineral lease is a federal action, the effects of which must be analyzed under NEPA to determine whether an EIS is required.³⁹ BLM's amendment of a mineral lease is also a federal agency action for which NEPA compliance is required. If the actions contemplated by the amendment were not covered in the NEPA analysis for the original lease, BLM must prepare a new or supplemental NEPA analysis or otherwise document NEPA compliance (*e.g.*, the applicability of a categorical exclusion).⁴⁰

The level of NEPA analysis required depends on the extent of the impacts of the proposed action. If the proposed action will have significant effects on the environment, an EIS is required.⁴¹ If an agency is uncertain whether a proposed action would significantly affect the environment such that an EIS is required, it may prepare an EA, which serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact.⁴² For those categories of actions that the agency has determined do not individually or cumulative have a significant effect on the human environment, a categorical exclusion may apply.⁴³

NEPA requires that an EIS analyze a reasonable range of alternatives to the proposed action, including the no-action alternative.⁴⁴ For EISs on applicant-proposed actions, BLM generally considers at least the proposed action, the no-action alternative, and the proposed action as modified by BLM to reduce environmental impacts.⁴⁵ Courts have recognized that the level of alternatives analysis required for an EA is less than that of an EIS, and have upheld EAs that consider only the proposed action and a no-action alternative.⁴⁶

A proposal to allow the capture and use of mine methane, whether by BLM lease amendment or USFS surface use permit, would likely require just such a NEPA analysis. The no-action alternative would result in the mine continuing to exercise its legal right and obligation to remove methane from the mine to protect the safety of underground miners. The proposed action would allow the mine to capture and use the mine methane, resulting in a reduction of the greenhouse gas emissions. All operations under the proposed action would still be subject to safety and health regulations, and any surface uses associated with the proposed action would be subject to BLM or USFS surface use

³⁸ 42 U.S.C. § 4332(2)(C).

³⁹ *Id.* See also BLM's NEPA Handbook, H-1790-1, at 16 (http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.24487.File.dat/h1790-1-2008-1.pdf) (visited September 14, 2009)).

⁴⁰ See 40 C.F.R. § 1502.9(c) (supplementation); *id.* § 1508.4 (categorical exclusion); BLM NEPA Handbook at 29 (noting that supplementation is appropriate for EISs, but not for environmental assessments (EAs); a new EA should be prepared); *id.* at 17-20 (describing the process for using categorical exclusions).

⁴¹ 42 U.S.C. § 4332(2)(C).

⁴² 40 C.F.R. § 1508.9.

⁴³ *Id.* § 1508.4; see BLM NEPA Handbook at App. 3-4 (categorical exclusions specific to the Department of Interior and BLM, respectively).

⁴⁴ 40 C.F.R. § 1502.14.

⁴⁵ BLM NEPA Handbook at 50.

⁴⁶ See, *e.g.*, *Jackson Hole Conservation Alliance v. Babbitt*, 96 F. Supp. 2d 1288, 1298 (D. Wyo. 2000); *Airport Neighbors Alliance, Inc. v. United States*, 90 F.3d 426, 432 (10th Cir. 1996).

regulations. The proposed methods would further the legal requirement that the companies minimize the adverse environmental impacts of their operations.

In short, the no-action alternative would result in the continued legal venting of methane to the atmosphere, while approving the proposed action would reduce the environmental impact of this activity. The consideration of such a proposed action, in light of the no-action alternative, would not require a lengthy analysis or a difficult decision making process under NEPA to reach the conclusion to permit mine methane capture and use.

2. FEDERAL MINERAL LEASES

A. Solid Mineral Leases

Federal mineral leases contain terms prepared under the Secretary's general authority found in the Mineral Leasing Act. Those terms reflect the intent of promoting resource development as well as the goals of protecting the environment and preventing waste of resources. Permitting the capture and use of methane from the underground mines would be consistent with these terms by utilizing the mine methane, and by preventing the possible waste of that resource and adverse environmental impacts that occur through releasing methane into the atmosphere.

Specifically, federal solid mineral leases require that lessees prevent waste or damage to the environment and other mineral resources. The lessee must

... carry on all operations in accordance with approved methods and practices ... having due regard for the ... prevention of waste, damage or degradation to any land, air, water, ... and other resources, including mineral deposits and formations of mineral deposits not leased hereunder.

A mining company's right to release a waste product such as mine methane for safety reasons has never been interpreted to be a violation of this provision.

Also in federal solid mineral leases, the government reserves the right to lease other minerals in the land so long as development of those minerals does not interfere with the rights of the lease holder:

[The government] reserves to itself the right to lease, sell, or otherwise dispose of ... other mineral deposits in the lands ... [and] must condition such uses to prevent unnecessary or unreasonable interference with the rights of the lessee as may be consistent with concepts of multiple use and multiple mineral development.

This provision would allow the government to "dispose" of mine methane by permitting a mining company to capture and use that methane because, due to safety concerns, allowing anyone else to do so would have the obvious potential to interfere with safe operation of the mine. Because oil and gas producers have no direct interest in coal mine safety,⁴⁷ only the coal lessee should be allowed to capture and use the mine methane.

⁴⁷ See *In re Hillsborough Holding Group*, 847 N.E.2d 897 at 902 (Ill. Ct. App. 2006).

Constructing facilities to minimize environmental impacts and prevent waste, such as facilities to capture and use methane, would fall within the language and intent of the existing provisions in federal mineral leases.

B. Oil and Gas Leases

(i) *Mine Methane Ownership: General Rules*

Many legal papers have been published about the ownership of *coalbed* methane,⁴⁸ while only a few have addressed ownership of *coal mine methane*.⁴⁹ Perhaps the most significant decision on the coalbed methane ownership question was by the U.S. Supreme Court in *Amoco Prod. Co. v. Southern Ute Indian Tribe*.⁵⁰ There, the Court addressed whether methane was included when the United States reserved the coal estate when granting surface ownership to a private party (the Southern Ute Tribe) under the Coal Lands Act of 1910,⁵¹ one of the original statutory provisions under which much of the federally owned coal in the San Juan and Powder River Basins was reserved to the United States.⁵² The Court in *Southern Ute*, based upon congressional intent, held that Congress did not reserve coalbed methane with when it reserved the coal estate. As a result, methane residing in these coals was conveyed to the Southern Ute Tribe when the original surface patents were issued by the federal government.⁵³

Where the federal government owns both the coal estate and the oil and gas estate, methane ownership will remain in the federal government. No regulations exist, however, to provide a process for an applicant to obtain a lease solely for mine methane development. EPA has suggested that if a federal coal lessee seeks to utilize or develop mine methane, it should “follow the federal leasing procedures in place for conventional natural gas” regardless of end use of that gas.”⁵⁴ The Interior Board of Land Appeals in the case of *Vessels Coal Gas, Inc.*, discussed below in section 4.A, rejected a federal oil and gas lease crafted to allow solely the capture of mine methane, while suggesting that a lease could be issued under the general authority of FLPMA.⁵⁵ The majority of States have not addressed mine methane, although New Mexico has addressed *in situ* coal gasification.⁵⁶

⁴⁸ See, e.g., Patrick R. Day, “Getting Along or Going to Court: Ownership and Development Conflicts between Coalbed Methane and Coal,” 46 *Rocky Mt. Min. L. Inst.* (2000); Michelle D. Baldwin, “Ownership of Coalbed Methane Gas: Recent Developments in Case Law,” 100 *W. Va. L. Rev.* 673 (1998); Robert A. Bassett, “Carbon Wars, Conflicts Between Coal and Oil & Gas Development,” 9th *Mining & Geothermal Inst.* (AAPL 1993); Elizabeth A McClanahan, “Coalbed Methane: Myths, Facts and Legends of Its History and the Legislative and Regulatory Climate into the 21st Century,” 40 *Okla. L. Rev.* 471 (1995).

⁴⁹ See, e.g., James A. Holtkamp and Rebecca A. Ryon, “Capture of Ventilated Methane from Mining Operations: Ownership, Regulations, and Liability Issues” 55 *Rocky Mt. Min. L. Inst.* (2009).

⁵⁰ 526 U.S. 865 (1999).

⁵¹ 30 U.S.C. § 83 *et seq.*

⁵² Most federal coal leases in the San Juan or Powder River Basins trace their origins to these Acts, or to the 1916 Stock-Raising Homestead Act, 43 U.S.C. §299, under which Congress reserved all coal and other minerals when conveying the surface estate to agricultural entrymen.

⁵³ 526 U.S. at 879-80.

⁵⁴ See Holtkamp and Ryon, *supra* at n. 49, quoting U.S.E.P.A. Office of Air and Radiation, “Coalbed Methane Extra” (Fall 2007) at 2 (http://www.epa.gov/cmop/docs/fall_2007.pdf).

⁵⁵ See *infra* at note 89 and accompanying text.

⁵⁶ See N.M. Stat. Ann. § 19-9-10.

Where a single private or public owner separately leases the coal and oil and gas estates, disputes between lessees will be governed by the intent of the parties as expressed by the instrument at issue. One of the most frequently cited early cases dealing with the ownership issue is *United States Steel Corp. v. Hoge*,⁵⁷ a Pennsylvania case which stated that the methane trapped within the coal belonged to the coal estate. Cases in Alabama and Montana have addressed the ownership issue, with different results. In *Carbon County v. Union Reserve Coal Co.*,⁵⁸ the Montana Supreme Court declined to follow the lead of the *Hoge* decision and held instead that a mineral deed conveying all coal and coal rights did not include a conveyance of the methane within the coal. In reaching this result, the court relied primarily upon the cannon of construction that an express grant of one mineral does not imply the grant of other minerals. In *Vines v. McKenzie Methane Corp.*,⁵⁹ on the other hand, the Alabama Supreme Court persisted in the conclusion reached in earlier Alabama cases that a conveyance of “all coal” necessarily includes all methane within that coal.⁶⁰

Courts have generally rejected attempts to equate the right to vent mine methane for safety reasons with the right to capture and utilize the resource.⁶¹ In *Southern Ute*, the U.S. Supreme Court acknowledged “the established common-law right of the owner of one mineral estate to use, and even damage, a neighboring estate as necessary and reasonable to the extraction of his own minerals,” but nonetheless concluded that *coalbed* methane was not reserved with the coal estate on federal lands.⁶² The Wyoming Supreme Court, in *Newman v. RAG Wyoming Land Co.*,⁶³ held that “the right to ventilate gas ... is not equivalent to ownership” of that gas, and the Illinois Court of Appeals, in *Continental Resources of Illinois, Inc. v. Illinois Methane, LLC*,⁶⁴ stated that “methane gas historically has been completely controlled by whoever controlled the coal” due to safety concerns.

(ii) *Ownership under Federal Oil and Gas Leases*

Federal oil and gas leases grant “the exclusive right to drill for, mine, extract, remove and dispose of all of the oil and gas (except helium) in the lands” described in the lease. These leases do not grant ownership of oil or gas, but merely a right to explore for and produce the gas: “[a federal lease] does not convey title in the land, nor does it convey an unencumbered estate in the oil and gas.”⁶⁵ As the Supreme Court has stated, “a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee” of the minerals in the land.⁶⁶ An oil and gas lessee does not “acquire any interest (title) in the gas until the gas is produced and severed from the land.”⁶⁷ Thus, an oil and gas lessee does not own the methane liberated by mining operations, but merely has an inchoate right to explore for and produce that methane.

⁵⁷ 468 A.2d 1380 (Pa. 1983).

⁵⁸ 898 P.2d 680 (Mont. 1995).

⁵⁹ 619 So. 2d 1305 (Ala. 1993).

⁶⁰ See also, Patrick R. Day, *supra* at n. 48, 7-7, 7-8.

⁶¹ See Holtkamp and Ryon, *supra* at n. 49, 26-3.

⁶² *Southern Ute*, 526 U.S. 863 (1999).

⁶³ See *infra* at note 106 and accompanying text.

⁶⁴ See *infra* at note 113 and accompanying text.

⁶⁵ *Union Oil Company of California v. Morton*, 512 F.2d 743, 747 (9th Cir. 1975).

⁶⁶ *Boesch v. Udall*, 373 U.S. 472, 477-87 (1963).

⁶⁷ *State v. Pennzoil Co.*, 752 P.2d 975, 980 (Wyo. 1988).

It should be noted that the federal oil and gas lease form grants the right to “mine” for oil and gas. This is apparently a holdover from the days in which oil was produced by large, often hand-dug, shafts into which oil would naturally flow and be recoverable. However, federal oil and gas leases, at section 7, specifically allow BLM to deny “mining” for oil and gas if its impact would be greater than “normal drilling operations”:

Sec. 7. Mining operations—To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor [BLM] reserves the right to deny approval of such operations.

Thus, if the only way for an oil and gas lessee to explore for and produce mine methane is to construct a mine with impacts substantially greater than normal drilling operations, BLM would be able to deny approval for such a mine. This situation exists at the trona mines in Southwestern Wyoming, where mine methane is only liberated as a result of underground longwall trona mining.⁶⁸ This method of capturing mine methane would have impacts “substantially different or greater than those associated with normal drilling operations,” and under the terms of the federal oil and gas leases, BLM has the authority to deny any permit to construct such a mine. Where BLM has already leased the “exclusive right and privilege to mine and dispose” the solid minerals to a mining company, BLM would be required to deny the right to mine those minerals to another party as a means of producing mine methane.

3. RELATED FEDERAL REGULATORY AGENCIES

A. Environmental Protection Agency

(i) *CMOP and NEPA Commenting*

The U.S. Environmental Protection Agency’s most direct involvement with mine methane to date is through the Coalbed Methane Outreach Program (CMOP). CMOP is a voluntary program whose goal is to reduce methane emissions from coal mining activities. Its mission is to promote the profitable recovery and use of coal mine methane, by working cooperatively with coal companies and related industries to address barriers to using mine methane instead of emitting it to the atmosphere.⁶⁹



Although not directly involved in federal oil and gas leasing, EPA has suggested that if a federal coal lessee seeks to utilize or develop mine methane, it should “follow the federal leasing procedures in place for conventional natural gas as prescribed by the BLM” regardless of end use.⁷⁰ EPA

⁶⁸ See *infra* at Section 4.C.

⁶⁹ See U.S.E.P.A. Coalbed Methane Outreach Program (<http://www.epa.gov/coalbed/index.html> (visited September 11, 2009)).

⁷⁰ See U.S.E.P.A. Office of Air and Radiation, “Coalbed Methane Extra” (Fall 2007) at 2 (http://www.epa.gov/cmop/docs/fall_2007.pdf) (visited September 11, 2009)).

has suggested that BLM should waive any royalty requirement entirely if it deems that utilization of mine methane would benefit the government, such as using the methane to fuel a coal drying system thereby increasing the value of the coal and increasing the royalty the government would obtain from additional coal sales.⁷¹

EPA has also commented on the treatment given to greenhouse gas emissions in other federal agencies' NEPA documents. In June 2007, EPA Region VIII criticized a draft EIS released by the U.S. Forest Service analyzing the environmental impacts of the expansion of coal mining activities at the West Elk Coal Mine.⁷² In a letter to the Forest Supervisor, EPA criticized the Forest Service for not identifying the magnitude of the mine methane emissions in the draft EIS and not evaluating alternatives to venting, including the potential environmental and economic benefits associated with capturing portions of the mine methane.⁷³ The Final EIS for the West Elk project included a discussion of GHG emissions and alternatives to venting to address EPA's concerns.⁷⁴

(ii) Mandatory Reporting Rules

On April 10, 2009, EPA issued a proposed rule that would require mandatory reporting of greenhouse gas emissions from forty different source categories in the United States, including underground coal mines (Proposed Reporting Rule).⁷⁵ The coal mine industry source category includes both active mines, defined as those mines where coal is currently being produced or has been produced within the previous 90 days, and coal mines in development that have operational pre-mining degasification systems, emitting more than 100,000 cubic feet of methane per day.⁷⁶ EPA selected this threshold on the basis that coal mines with this level of methane emissions are also subject to quarterly sampling of ventilation systems to ensure that methane concentrations meet applicable Mine Safety and Health Administration (MSHA) regulations, and thus reasoned that the additional obligations under the Proposed Reporting Rule would be minimal.⁷⁷

Consistent with other air regulatory programs, emissions from coal mines would be reported at the facility level. Under the Proposed Reporting Rule, methane emissions at each ventilation shaft and each degasification system well or shaft would be measured and reported beginning in 2011, for 2010 emissions. EPA proposes to allow the quarterly methane sampling procedures used for MSHA purposes to also serve as the standard methodology for quantifying methane emissions from coal mines. For coal mines employing ventilation systems that include methane destruction, emissions would be monitored through direct measurement of the methane flow to combustion devices with continuous flow monitoring systems.⁷⁸ The

⁷¹ See "Coalbed Methane Extra," *supra* at n. 67 at 2-3.

⁷² See, *infra* Section 4.B.

⁷³ Letter of Kerrigan G. Clough, EPA Region VIII Deputy Administrator, to Charles Richmond, Forest Supervisor Grand Mesa, Uncompaghre, and Gunnison National Forests (June 1, 2007).

⁷⁴ See *infra* at note 99 and accompanying text.

⁷⁵ 74 Fed. Reg. 16447 (April 10, 2009). The FY2008 Consolidated Appropriations Act, Pub. L. 110-161, 121 Stat 1844, 2128 (2008), requires EPA to promulgate a rule "to require mandatory reporting of GHG emissions above appropriate thresholds in all sectors of the economy of the United States."

⁷⁶ *Id.* at 16553.

⁷⁷ *Id.*

⁷⁸ *Id.* at 16554.

Proposed Reporting Rule is considered a necessary first step to comprehensive federal regulation of GHG emissions.⁷⁹ The comment period closed on June 9, 2009.

B. Mine Safety and Health Administration

Because of the danger to underground miners, all aspects of the atmosphere in underground mines, including methane concentration and removal, is regulated by MSHA under the Federal Mine Safety & Health Act of 1977.⁸⁰ MSHA's authority under this Act extends to both coal mines and metal/non-metal mines.⁸¹ MSHA's mission is to enforce compliance with mandatory safety and health standards as a means to eliminate fatal accidents; to reduce the frequency and severity of nonfatal accidents; to minimize health hazards; and to promote improved safety and health conditions in the Nation's mines.⁸²



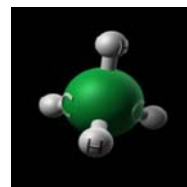
The operators of all mines in the United States, whether coal or metal/non-metal, must comply with MSHA's mandatory health, safety, and training standards. These standards apply to all facilities related to a mine, both surface and underground. The specific regulations cover such subjects as ventilation plans, permissible methane limits, fire prevention, drilling, electricity, use of equipment, personal protection, and control of air quality. MSHA does not approve mine ventilation design plans at metal/non-metal mines as it does at coal mines.

The Federal Mine Safety and Health Act of 1977 established interim mandatory health standards for coal mines to "dilute, render harmless, and to carry away flammable, explosive, noxious, and harmful gases" via mechanical ventilation equipment.⁸³ The Mine Safety Act and the regulations promulgated by MSHA do not address mine methane once it leaves the mine. However, MSHA has approved underground ventilation plan revisions at coal mines to enable the capture and use of mine methane, but has objected to plans to flare mine methane brought to the surface by methane drainage wells despite approving of ventilation plans that included those wells.⁸⁴

4. CASE STUDIES

A. Vessels Coal Gas, Inc.

In *Vessels Coal Gas, Inc.*,⁸⁵ the IBLA addressed the question of mine methane for the first time. At issue was whether competitive oil and gas leasing under the Mineral Leasing Act was the appropriate means to grant leases for the exclusive right to capture mine methane. The methane was being released from gob vent bore holes at a coal mine



⁷⁹ *Id.* at 16455-56 ("Accurate and timely information on GHG emissions is essential for informing some future climate change policy decisions.").

⁸⁰ 30 U.S.C. §§ 801 *et seq.*

⁸¹ See Title 30, Code of Federal Regulations, Part 57, Safety and Health Standards-Underground Metal and Nonmetal Mines, Subpart T, Ventilation (30 C.F.R. §§ 57.22201-22241)

⁸² See Mine Safety and Health Administration (<http://www.msha.gov/MSHAINFO/MISSION.HTM> (visited August 31, 2009)).

⁸³ 30 U.S.C. § 863.

⁸⁴ See *infra* at Section 4.B.

⁸⁵ 175 IBLA 8, 2008 WL 2951336 (June 26, 2008).

in central Utah operated by a federal coal lessee, Utah American Energy (UAE). UAE entered into an agreement with Oso Oil and Gas Properties, LLC (Oso) under which Oso would capture mine methane from vent holes at UAE's mines and, if economically feasible, gather and transport the methane to market for treatment and sale. UAE asked BLM for a license "issued under the broad Secretarial powers granted to the BLM under the Federal Land Policy and Management Act (FLPMA) to capture the federal portion of the gob gas."⁸⁶

The Vessels opinion shows how BLM attempted to deal with mine methane in light of the lack of applicable regulations. BLM employees, unsure of the proper legal authority for UAE's proposal, determined that competitive leasing under the Mineral Leasing Act was required before the mine methane could be captured and offered for lease. A lease was eventually issued to Oso for the "exclusive right for the surface capture of ventilated mine gas, known as mine vent gas, from the Aberdeen Coal Mine." The lease stipulations included a restrictive clause stating: "This lease does not grant the right to drill for, mine, extract, remove and dispose of all the oil and gas in the lands described herein."⁸⁷ A third party, Vessels Coal Gas, Inc. protested the lease sale arguing, among other things, that the stipulations prevented any company from winning the lease except Oso and, therefore, was anti-competitive and inconsistent with the terms and requirements of the Mineral Leasing Act.⁸⁸

The IBLA reasoned that the Mineral Leasing Act only authorizes leasing of oil and gas "deposits." It found that the mine methane released by coal mining into the environment, from vents drilled by the coal mine operator at the direction of MSHA for protection of coal miners, was not the kind of oil and gas "deposit" covered by the Mineral Leasing Act. Rather, IBLA found that the Mineral Leasing Act contemplated leases that allowed activities to be conducted with a goal of finding and producing oil and gas:

It is clear from the statute and implementing regulations that oil and gas leases were intended to be granted for the purposes of exploring for, drilling for, mining for, extracting, removing, and disposing of the resulting production from oil and gas deposits in place. That is not the situation here.⁸⁹

The IBLA ruled that the methane released at the surface from underground longwall mining of coal does not constitute the kind of "deposit" that would be leasable under the Mineral Leasing Act:

It is well-settled under the [Mineral Leasing Act] that competitive leasing is to be based upon reasonable assurance of an existing valuable mineral deposit. *American Gilsonite Company*, 111 IBLA 1, 24, 96 I.D. 408 (1989). Gas already legally released into the atmosphere is not remotely a 'deposit.'⁹⁰

Thus, where the methane is liberated from the coal seam and brought to the surface as a result of underground longwall coal mining and cannot be recovered by "normal drilling

⁸⁶ *Id.* at 13.

⁸⁷ *Id.* at 16.

⁸⁸ *Id.*

⁸⁹ *Id.* at 25.

⁹⁰ *Id.*

operations,” the gas would thus not constitute a leasable “deposit” of oil and gas under the *Vessels* decision.

While the IBLA concluded that the Mineral Leasing Act did not apply to the situation presented in *Vessels*, it “[took] no position . . . regarding the proper application of FLPMA or any other authority for BLM to issue permits, leases, contracts or licenses” for mine methane capture. Rather, the IBLA declared that it is BLM’s responsibility to determine the appropriate authority for issuing leases for mine methane once the technology became widely available.⁹¹

B. Mountain Coal - West Elk Mine

Mountain Coal Company, LLC (Mountain Coal) is the operator of the West Elk Coal Mine (West Elk) located near Paonia in Gunnison County, Colorado under federal coal



leases dating back to the 1970s. As part of a mine expansion project at West Elk, Mountain Coal proposed to construct and operate up to 168 methane drainage wells in support of the mining expansion, and sought approval to flare methane vented at certain of those wells. The West Elk mine was operated under a ventilation plan approved by MSHA, but the approved plan did not contain provisions for flaring of the methane.⁹²

Because some of the methane drainage wells would be located on National Forest Lands, Mountain Coal applied to the Forest Service for various surface use permits in connection with the expansion plan to install surface facilities for the wells and for the construction of access routes to those wells. The Forest Service, in its role of managing surface resources, conducted a NEPA review to consider alternatives to the proposal. The Forest Service consulted with the MSHA, EPA, the Office of Surface Mining Reclamation and Enforcement (OSM), and the Colorado Division of Reclamation Mining and Safety (DRMS) which managed the mine permit process.

From its contacts with MSHA, the Forest Service found that while MSHA regulations may not specifically prohibit flaring, MSHA believed that any flaring system design would need to be tested in a situation in which no miners were exposed (such as at a sealed and abandoned mine), and that sufficient time was needed to test the viability and durability of the system to ensure that there would be zero potential to cause gas ignition underground.⁹³ MSHA believed that such testing and analysis would require several years of effort.

⁹¹ *Id.*

⁹² For a full description of the West Elk Mine review process, from which much of this discussion is taken, see: *Record of Decision, E Seam Methane Drainage Wells Project*, Charles S. Richmond, USFS Forest Supervisor, March 7, 2008, and *WildEarth Guardians v. U.S. Forest Service, et al.*, Civ. Action No. 1:08-cv-02167 (D. Colo))(Complaint available at <http://www.globalclimatelaw.com/uploads/file/Mountain%20Coal%20Complaint.pdf> (visited September 12, 2009).

⁹³ See *Record of Decision, E Seam Methane Drainage Wells Project*, Attachment 1, Charles S. Richmond, USFS Forest Supervisor, March 7, 2008.

EPA commented on the draft EIS that was released by the Forest Service analyzing the environmental impacts of the proposed expansion at West Elk in June 2007. In a letter to the Forest Supervisor, EPA criticized the Forest Service for not identifying the magnitude of the mine methane emissions in the draft EIS and not evaluating alternatives to venting, including the potential environmental and economic benefits associated with capturing portions of the mine methane.⁹⁴ Several environmental organizations also commented on the Forest Service's failure to analyze mine methane emissions and the project's impacts on global warming.⁹⁵

The Final EIS for the West Elk project included a discussion of greenhouse gas emissions and alternatives to venting to address EPA's concerns. The Forest Service determined that although the West Elk expansion could potentially release in excess of 7 million cubic feet of methane into the atmosphere daily, or one million tons of carbon dioxide equivalent per year, the Forest Service could not require mine methane emission control as a condition of final approval. The Forest Service cited safety concerns related to flaring:

Flaring of methane gas may cause mine explosions due to fluctuations in the levels of methane. This is an undesired condition and is not approved by MSHA. MSHA indicates that additional research and development on this technology would have to occur before MSHA would consider flaring a reasonable option . . .⁹⁶

The Forest Service similarly rejected capture or use of mine methane as a viable alternative "because of complexities and legal limitations stemming from the leasing processes and regulations of two separate mineral resources, uncertainty with relation to quality and quantity of gas resource, and economic concerns related to additional facilities." The Forest Service concluded that utilizing the methane resource would not be possible because no oil and gas leases had been issued for the area and, in any event, an alternative requiring mine methane capture would not satisfy the specific purpose and need for the project which was to "ensure the health and safety of the underground mine and facilitate efficient recovery of leased federal coal reserves."⁹⁷ The Final EIS also determined that it was not possible to estimate or calculate the effect that mine methane emissions from the West Elk project would have on global warming and, therefore, such effects were not "reasonably foreseeable" within the meaning of NEPA regulations.⁹⁸

The Forest Service issued its final Record of Decision (ROD) on March 7, 2008. The ROD identified the need to fulfill the obligations of its role as the federal surface land management agency in the DRMS coal mine permitting process, and the OSM mine plan modification process that would approve Mountain Coal's proposal to construct, operate, and reclaim the mine drainage wells and associated access on National Forest System lands.⁹⁹

⁹⁴ Letter of Kerrigan G. Clough, EPA Region VIII Deputy Administrator, to Charles Richmond, Forest Supervisor Grand Mesa, Uncompahgre, and Gunnison National Forests (June 1, 2007).

⁹⁵ See Final Environmental Impact Statement Deer Creek Shaft and E Seam Methane Drainage Well Project, *Draft EIS Comments and Responses* (August 2007).

⁹⁶ *Id.* at S-11

⁹⁷ *Id.* at 59-61.

⁹⁸ *Id.*

⁹⁹ *Supra* at n. 90.

The ROD noted that venting methane (a greenhouse gas) was a concern for various reasons including effects on air quality, desire for other options to venting such as capture and use or flaring of methane, and the contribution of methane release on climate change. The ROD noted, however, that no air quality regulations or standards governing methane have been promulgated.

The ROD also stated that the Forest Service shared the goal of mitigating the release of methane by some mechanism, should it be feasible, but that mitigating released methane by capture and use has not been possible because the gas resources (which are federally managed) are not under lease, and therefore implementing this type of mitigation can not occur. It noted that the BLM was reviewing the issue and that it was unknown whether BLM might conduct an oil and gas lease sale for the methane involved.¹⁰⁰

On October 7, 2008, WildEarth Guardians filed suit in federal court in Colorado challenging the final approval of the West Elk expansion and seeking to enjoin the project.¹⁰¹ The lawsuit complains that the Forest Service violated NEPA by failing to adequately consider available mitigation measures to lessen the impact of mine methane venting and not analyzing the cumulative effects of the mine expansion on climate change.

In January 2009, the Department of Interior Assistant Secretary, Land and Minerals Management, issued a mine plan approval document authorizing the Colorado State BLM Office to add approved “addenda” to the federal coal leases at West Elk authorizing the capture of mine methane for use or sale, with mine methane being defined as “any combustible gas located in, over, under or adjacent to the coal that will or may infiltrate underground mining operations.”¹⁰² The addenda provide that no royalty is due if the mine methane is used “on or for the benefit of mineral extraction at the West Elk coal mine” but that a 12.5% royalty has to be paid on mine methane that is captured for use or sale off the mine premises.¹⁰³

The West Elk arrangement was possible primarily because no federal oil and gas leases had been issued for the lands; however, when a party other than the coal lessee obtains right to federal oil and gas, conflicts can arise. Some BLM regional offices have adopted a policy of not offering oil and gas leases over coal lands within areas permitted for existing coal mine operations or within coal lease tracts expected to be developed within the next ten years.¹⁰⁴

¹⁰⁰ *Id.*

¹⁰¹ *WildEarth Guardians v. U.S. Forest Service, et al.*, Civ. Action No. 1:08-cv-02167 (D. Colo.) Complaint filed October 7, 2008.

¹⁰² U.S. Dept. of Interior BLM Addendum to Coal Leases C-1362, COC-56447, COC-67011, C-0117192, D-044569, COC-54558, COC-67232 (January 14, 2009).

¹⁰³ *Id.*

¹⁰⁴ See BLM Utah State Field Office, “A Policy for Oil and Gas Leasing on Lands Presently Being Developed for Underground Coal” (March 23, 2001).

C. Wyoming Trona Mines

(i) *Applications for Lease Addenda*

Wyoming's underground trona (sodium) mines also encounter various levels of mine methane. Unlike coal, the trona itself contains very little methane. When longwall



mining is employed, the void left behind by removing 100% of the trona results in severe shear stresses that delaminate and fracture the methane-bearing strata above the mining horizon, releasing the methane contained in those strata.

Methane infiltrating the gob must be removed to protect the safety of underground miners. Removal is accomplished through the normal mine ventilation system or through a borehole drilled from the surface into the gob. Once it is removed from a mine for safety purposes, methane from gob vent boreholes can be vented at the surface or used in mining operations – but it is not of sufficient quality to be introduced into pipelines as natural gas without further treatment.

In March 2009, two of the Wyoming trona producers submitted applications to the BLM for amendments to their federal sodium leases that would permit the capture and use (or flaring) of mine methane in conjunction with their mining operations under the leases. The requested addenda are based upon the provisions authorized by BLM in the lease addenda at the West Elk mine. To date, BLM has not issued the requested addenda.

(ii) *Conflicts with Oil and Gas Development*

Much of the Known Sodium Leasing Area (KSLA) in Southwest Wyoming has also been leased for oil and gas production by BLM and private mineral owners. In the 1990s, the potential conflict between development of underground trona resources and drilling operations for conventional oil and gas was studied by a joint industry committee formed by all stakeholders in the area. Ultimately, BLM issued a moratorium permanently suspending oil and gas development in the area until underground production of the sodium resource is exhausted. The moratorium did not prevent oil and gas exploration above the trona mining horizon into the strata above the mines where – the strata that releases methane into the mines when the trona is removed. An attempt in the early 2000s to utilize “normal drilling operations” to produce this methane was unsuccessful.

Several federal oil and gas lessees, Barlow & Haun, Tricontinental Resources and NOWIO-S, LLC, filed a complaint on November 26, 2008, in the U.S. Court of Federal Claims.¹⁰⁵ The Complaint alleges that the BLM has taken Barlow & Haun's “private property vested in the oil and gas leases” held by Barlow & Haun in the KSLA without just compensation in violation of the Fifth Amendment of the United States Constitution. The Complaint also alleges a breach of contract by the BLM.

¹⁰⁵ *Barlow & Haun, et al v. Bureau of Land Management*, Civ. Action No. 1:08-cv-00847-GWM (Fed. Cl.) Complaint filed November 26, 2008.

The alleged taking and breach occurred, according to the Complaint, when the BLM “permanently suspended” oil and gas operations in a portion of the KSLA where underground trona mining occurs. The Complaint seeks damages “well exceeding fifty million dollars (\$50,000,000)” plus interest, costs, expenses and attorney fees. Barlow & Haun survived a Motion to Dismiss filed by the BLM under an Opinion issued by the court on June 1, 2009. The case is now in the discovery phase.

This case may not have material impact on the capture and use of mine methane at the trona mines. If Barlow & Haun prevails in the litigation, it will receive damages for a taking of its rights arising under the oil and gas leases, or for BLM’s breach of those leases, but this will effectively result in a termination of the oil and gas leases. If Barlow & Haun loses, it will receive nothing and its leases will remain in place, although operations will remain “suspended” by BLM’s moratorium on oil and gas exploration in the KSLA.

5. PRIVATE LANDS

Most of the reported cases involving disputes over ownership of methane from coal seams on private lands involve ownership of *coalbed* methane. The oil and gas operators generally argue



that coalbed methane is essentially natural gas and is therefore part of the gas estate, while the coal operators take the position that the coalbed methane is part of the coal estate and is either reserved with the coal estate or that capture and control of mine methane is an essential element of the right to mine coal because mining operations require venting to safely extract the coal resources.

As discussed above, courts have generally rejected attempts to equate the right to vent methane for safety reasons with the right to capture and utilize the resource. In *Newman v. RAG Wyoming Land Co.*,¹⁰⁶ the Wyoming Supreme Court held that while “the grant of coal mining rights would be useless if it did not include the right to ventilate methane gas from the coal mining area,” it nonetheless followed the reasoning in *Amoco* in holding that “the right to ventilate gas, which is an essential element of the right to mine, is not equivalent to ownership.” In another recent case, *Geiger v. United States*,¹⁰⁷ a federal court in Kentucky held that the coal estate owner had the right to capture and vent methane, but stated that this right did not equate to ownership of the gas in the absence of an agreement whereby the coal producer could market coalbed methane rather than waste it. In other words, the owner of the coal estate did not possess the right to reduce to possession and ownership the coalbed methane captured during the mining process.

Recent decisions in other jurisdictions rely on more traditional concepts of property law to determine whether methane is part of the coal estate or the oil and gas estate when a deed or lease of coal does not explicitly address the right to use or own methane. In states that follow the “ownership-in-place” theory of gas ownership, courts have held that “the owner of a tract of land holds the fee in oil and gas underlying the boundaries of his property even though the oil and gas are not the subject of actual possession until brought to the surface.”¹⁰⁸ Other states, such as Alabama,¹⁰⁹ determine ownership of methane under the “non-ownership theory” or historic “rule

¹⁰⁶ 53 P.3d 540 (Wyo. 2002).

¹⁰⁷ 456 F.Supp.2d 885 (W.D. Ky. 2006).

¹⁰⁸ See Eugene O. Kuntz, A Treatise on the Law of Oil and Gas, § 2.4, 65 (Anderson 1987).

¹⁰⁹ See *NCNB Texas Nat’l Bank v. West*, 631 So.2d 212, 221-24 (Ala. 1993).

of capture,” which recognizes that the migratory nature of oil and gas requires actual possession to establish ownership - in these states, until the coal methane is put to constructive use, it belongs neither to the mineral estate nor the oil and gas estate.

Unfortunately, these theories of ownership often do not provide sufficient guidance for allocation of mine methane resources on split estate lands. In one case, *In re Hillsborough Holding Group*,¹¹⁰ a conflict arose between the party owning the gas resource and the coal lessee, CTC Minerals, which claimed that the coal lessee had converted to its own use methane gas derived from its longwall mining operation. The court held that if the mine methane was bound within the coal seam, the holder of the coal estate possessed the right to extract the gas and reduce it to possession; “[h]owever, once the [mine methane] migrated out of the stratum in which it originated, the right to recover the gas belongs to the holder of the gas estate.”¹¹¹ Under this view, the source of the methane as well as where it is recovered determines ownership. The *Hillsborough* court concluded that where methane was a component of the subsurface coal seams and recovered when those seams were degassed, the methane rightfully belonged to the coal lessee; however, the court also reasoned that gas contained in gob piles was not captured directly from the coal seam - rather it has already escaped from the coal seam when captured and thus belonged to the oil and gas lessee.¹¹²

The Illinois Court of Appeals came to a slightly different conclusion in *Continental Resources of Illinois, Inc. v. Illinois Methane, LLC*, which concerned methane vented from active coal mines.¹¹³ The court concluded that the gas lease in issue did not include the right to develop methane directly from the coal seam. The court found it significant that the oil and gas lease required Continental to permanently case and cement gas wells drilled through the coal seam, holding that “[t]he reservation of the right to drill through the coal does not include the right to drill into the coal and develop coalbed methane.”¹¹⁴ The court held that methane found in coal seams or mine voids is controlled by the coal estate because “[o]il and gas producers have no direct interest in coal mine safety, and therefore methane gas historically has been completely controlled by whoever controlled the coal . . . The control of [methane] gas should not change simply by virtue of its increased value.”¹¹⁵

These cases typify the difficulties faced when the methane is conveyed separately from the right to extract coal or when the coal lease or deed is silent on the issue of mine methane capture or use. As in *Hillsborough*, the outcome in a dispute between these competing interest can hinge on extensive technical evidence and expert testimony to establish where the methane originated, where it was actually captured, and whether the venting necessary for coal mining authorized the coal estate to make use of the methane, leaving courts to parse out the ownership issues on a case-by-case basis.

¹¹⁰ 207 B.R. 299 (Bankr. M.D. Fla. 1997) (applying Alabama law).

¹¹¹ *Id.* at 303.

¹¹² *Id.* at 305.

¹¹³ 847 N.E.2d 897 (Ill. Ct. App. 2006).

¹¹⁴ *Id.* at 902.

¹¹⁵ *Id.*

6. CONGRESSIONAL ACTION



Pending in Congress are several proposed bills that would affect mine methane disposal, capture and use. The most direct proposal to amend the Mineral Leasing Act is found in the proposed Consolidated Land, Energy and Aquatic Resources Act of 2009, although other suggestions have also been put forth.

A. Consolidated Land, Energy and Aquatic Resources Act of 2009

The Consolidated Land, Energy and Aquatic Resources Act of 2009¹¹⁶ would amend the Section 2 of the Mineral Leasing Act and declare that where no oil and gas lease has been issued, the coal mine methane is included in the coal estate under federal coal leases. The coal lessee would be required to recover the coal mine methane “to the maximum feasible extent, taking into account the economics of both the mining and methane capture operations.”

If capture would not protect the safety of underground miners, or if capture would not be economically feasible, the coal lessee would be allowed to flare or vent the coal mine methane. However, a royalty of 12.5% would be due on all captured methane. Where the oil and gas estate had also been leased, the coal lessee would be required to negotiate with the oil and gas lessee, and if an agreement could not be reached, the coal lessee would be required to seek a court order allowing coal mining and methane capture to proceed and to dividing the proceeds “of the coal and methane resources” with the oil and gas lessee.¹¹⁷

B. Mineral Leasing Act Amendment?

Section 207 of the Mineral Leasing Act currently provides the Secretary of the Interior with broad authority to include any terms that may be needed in federal coal leases:

The lease shall include such other terms and conditions as the Secretary shall determine.

Similarly, Section 262 of the Mineral Leasing Act authorizing sodium leases and providing for royalties on those leases allows the Secretary to modify existing federal sodium leases:

Provided further, that on application by any lessee the Secretary of the Interior is authorized to modify the rental and royalty provisions stipulated in any existing sodium lease to conform to the provisions of this section.

Congress could explicitly authorize the capture and flaring or use on site of mine methane by adding a simple proviso to each of these sections, utilizing the concepts applied by

¹¹⁶ H.R. 3534.

¹¹⁷ *Id.* at § 307.

BLM in the addenda to the West Elk federal coal leases. Such a proviso would authorize the Secretary of the Interior:

... to grant lessee the right to capture and use any gaseous materials that accumulate in underground mineral mines and that must be removed therefrom for safety reasons. Any such gases captured and flared or used by the lessee in equipment associated with the mining, beneficiating, or production of [coal or sodium] mineral products shall be free from the royalties provided for in this section.

Given the broad authority of the Secretary of the Interior described in the first section of this paper, an explicit Congressional direction is unnecessary. However, to satisfy regulators' concerns about having sufficient authority to allow the capture and use of mine methane, this simple type of expression of Congressional intent could clarify that authority.

III. CONCLUSION

Mine methane is a dangerous waste product of mining that until recently has simply been vented into the earth's atmosphere. Technology is continuing to evolve to capture and use the mine methane resulting from underground mining and to diminish its impact as a greenhouse gas. The laws related to mine methane are similarly evolving.



At the current time, no federal law or regulation covers the release of mine methane. The Secretary of the Interior has the authority to allow the capture and use of mine methane, but is only known to have done so in the instance of the West Elk mine in Colorado. The IBLA decision in the

Vessels case establishes that mine methane is not a leasable deposit under the Mineral Leasing Act, and courts have struggled with determining the ownership of mine methane – reaching apparently conflicting conclusions. Congress is now considering various measures to deal with the issue of mine methane. This is clearly an area where the law is undergoing development and in which clarification is needed.

Mine methane has always been a problem in underground mining. Canaries replaced mice as the underground miners' early warning system for the presence of "noxious gasses" in the 1700s because it was easier to know when the canaries quit singing than to see when the eyes of the mice began turning pink. Today's technology may be more sophisticated, and the continued venting of mine methane to the earth's atmosphere may be unacceptable under current environmental awareness, but the paramount goal remains the same – law and technology must continue protecting the safety of underground miners.

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