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Sewing Up the Regulatory Hole: Preventing Winter Ozone in Utah's Uintah Basin

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I. INTRODUCTION

Picture a dark brown cloud of smog settling in a valley. Ozone levels are extremely high; so high that breathing the air could decrease respiratory function or exacerbate asthma. Are you picturing a city like Houston or Los Angeles on a hot summer day? Try the wide-open plains of northeast Utah in the middle of winter.

In 2011, Ozone levels in Utah's Uintah Basin, an area of about 5,853,000 acres in northeast Utah,[1] were observed at 185 percent of the levels that the Environmental Protection Agency ("EPA") considers safe for human health.[2] Scientists, land managers, and the oil and gas industry are beginning to realize that the ozone problem is caused in part by extensive mineral development in the region.[3] A similar winter ozone problem was first seen in the Jonah natural gas field in Wyoming's Upper Green River Basin,[4] and it could happen some day in the Piceance Basin in northwestern Colorado.[5] This article tackles the question: Why can't federal pollution control laws, like the Clean Air Act, prevent these ozone problems?

Section II summarizes the extent of winter ozone in the Uintah Basin and how current and projected natural gas development are contributing to the problem.

Section III examines why four federal statutes and two federal agencies have not been able to solve the problem. This section examines how the EPA's role in regulating air quality under the Clean Air Act and the Bureau of Land Management's ("BLM") role as land manager responsible for mineral development are not in sync, leaving a big hole in ozone regulation for natural gas development.

Section IV explores three new policies and regulations both the EPA and BLM are employing to attempt to sew up the regulatory hole: a Memorandum of Understanding (MOU) between the EPA, BLM, and other land management agencies; a new Environmental Impact Statement

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1. U. S. BUREAU OF LAND MGMT., VERNAL FIELD OFFICE, GREATER UINTA BASIN OIL AND GAS CUMULATIVE IMPACTS TECHNICAL SUPPORT DOCUMENT § 1.2 (2012) [hereinafter UINTA CUMULATIVE IMPACTS DOC.]. Uintah is alternatively spelled "Uinta."

2. ENERGY DYNAMICS LABORATORY, UTAH STATE UNIVERSITY RESEARCH FOUNDATION, DOCUMENT NO. EDL/11-039, UINTA BASIN WINTER OZONE AND AIR QUALITY STUDY, DECEMBER 2010 – MARCH 2011 42 (2011) [hereinafter UINTAH BASIN OZONE STUDY].

3. *Id.* at 97.

4. Russell C. Schnell, et al., *Rapid Photochemical Production of Ozone at High Concentrations in a Rural Site During Winter*, 2 NATURE GEOSCIENCE 120 (2009).

5. Mark Jaffe, *Like Wyoming, Utah Finds High Wintertime Ozone Pollution Near Oil, Gas Wells*, DENVER POST, Feb. 26, 2012, http://www.denverpost.com/business/ci_20042330.

("EIS") for natural gas development in the Uinah Basin; and new regulations under the Clean Air Act specifically targeting emissions from small-scale natural gas production.

Finally, Section V concludes with recommendations on additional steps that must be taken to ensure basin-wide decreases in ozone levels to environmentally healthy levels.

II. THE OZONE PROBLEM IN THE UINTAH BASIN

About 70 percent of the Uintah Basin is owned by the federal government and managed for mineral development by the BLM out of the Vernal Field office in Vernal, Utah.[6] It is already heavily developed for oil and gas production, with 15,000 oil and gas wells.[7] See Figure 1, below. The BLM estimates a current total surface disturbance of 23,493 acres.[8] Based on pending National Environmental Policy Act (NEPA) projects, the BLM foresees an additional 15,796 new well pads and 28,417 new wells.[9] While not all of the projected new development will be natural gas, a large portion of it will. For example, former secretary of the interior Salazar recently approved 3,675 new natural gas wells in the 162,911-acre Greater Natural Buttes Project Area (GNBPA) area of the Uintah Basin.[10] This project will result in new surface disturbance of 8,147 acres, or 5 percent of the GNBPA.[11] To put the new project in perspective, the current development in the GNBPA is 1,562 productive natural gas wells on 7,766 acres.[12] Additionally, all the approved development in the GNBPA will involve hydraulic fracturing,[13] a process that releases some natural gas into the atmosphere and leads to ozone formation.[14]

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6. U. S. BUREAU OF LAND MGMT., VERNAL FIELD OFFICE, RECORD OF DECISION AND APPROVED RESOURCE MANAGEMENT PLAN 4 (2008) [hereinafter VERNAL RMP].

7. UINTA CUMULATIVE IMPACTS DOC., *supra* note 1, at tbl. 2-3. Only 9,000 are active. *Id.*

8. VERNAL RMP, *supra* note 6, at 4; UINTA CUMULATIVE IMPACTS DOC., *supra* note 1, at tbl. 2-5.

9. VERNAL RMP, *supra* note 6, at 4; UINTA CUMULATIVE IMPACTS DOC., *supra* note 1, at tbl. 3-2. Note that well pads are between 2.5 and 5.8 acres in size. *Id.* at tbl. 2-5. Depending on the size of the well pad, it can hold 1 to 12 wells. *Id.* at tbl. 2-4.

10. U. S. BUREAU OF LAND MGMT., VERNAL FIELD OFFICE, UT-080-07807, GREATER NATURAL BUTTES RECORD OF DECISION (2012) [hereinafter GREATER NATURAL BUTTES ROD].

11. *Id.* § 3.

12. *Id.* § 2.

13. U. S. BUREAU OF LAND MGMT., VERNAL FIELD OFFICE, GREATER NATURAL BUTTES FINAL ENVIRONMENTAL IMPACT STATEMENT, FES 12-8 § 2.5.3.3 (2012) [hereinafter GREATER NATURAL BUTTES EIS].

14. U. S. EVTL. PROT. AGENCY, FACT SHEET, OVERVIEW OF FINAL AMENDMENTS TO AIR REGULATIONS FOR THE OIL AND NATURAL GAS INDUSTRY 3 (2012), *available at* http://www.epa.gov/airquality/oilandgas/pdfs/20110728factsheet.pdf [hereinafter NSPS REGS FACT SHEET].

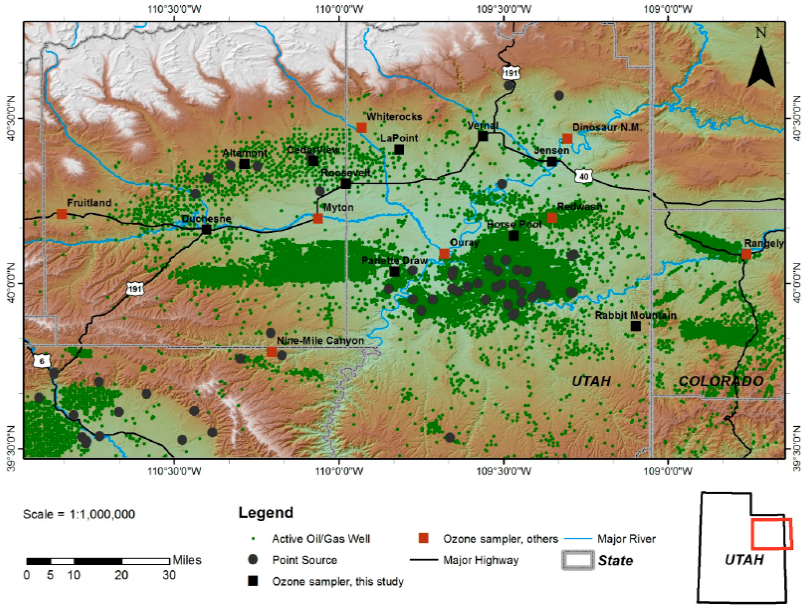

Figure 1: Winter 2011 Uinta Basin ozone sampling locations with an overlay of known ozone precursor point sources and active oil/gas wells. Figure 2-2 of UINTAH BASIN OZONE STUDY, *supra* note 2.

Ozone is typically a summer phenomenon in large cities because the components necessary to create ozone are present at that time. Ozone comes from the combination of oxides of nitrogen (NOx), volatile organic compounds (VOCs), and sunlight.[15] Scientists believe that in the Uintah Basin, NOx and VOCs coming from natural gas development and sunlight reflecting off of snow is strong enough to create ozone.[16] This process is further promoted by a temperature inversion in the winter that keeps the air settled in the lower elevations of the Uintah Basin, helping to maintain the chemical soup necessary for ozone creation.[17]

While ozone high up in the stratosphere is necessary to protect us from harmful ultraviolet radiation,[18] high levels of ozone in the ambient air (the air we breathe) is harmful to human health.[19] Ozone is known to

15. UINTAH BASIN OZONE STUDY, *supra* note 2, at 15.
16. *Id*. at 97.
17. *Id*.
18. *Id*. at 14.
19. *Id*.; *see also Health Effects of Ozone in the General Population*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/apti/ozonehealth/population.html (last visited Apr. 17, 2013).

exacerbate asthma and cause other respiratory problems.[20] In compliance with the Clean Air Act, the EPA determined that the level of ozone that is safe for human health is seventy-five parts per billion (ppb).[21] To determine whether an area exceeds this level, the EPA looks at the eight-hour running average concentration of ozone.[22]

In a recent study in the Uintah Basin, thirteen out of fifteen sites exceeded this level at least once during a three-month period in the winter of 2011.[23] Ten of the sites had eight-hour periods that exceeded 100 ppb, and the highest site recorded 139 ppb.[24] That is 185 percent of the EPA's acceptable level. The Uintah Basin study found that elevated ozone levels correlated with locations of oil and gas wells in the basin. NOx and VOCs are known to come from natural gas development, and thus so does ozone. Despite the observance of ozone levels above the EPA standard, the EPA does not deem this data sufficient to consider the area in non-attainment under the Clean Air Act.[25]

The EIS for projected oil and gas development in GNBPA of the Uintah Basin cataloged different sources of NOx and VOCs from natural gas development.[26] These sources include: drill rig engines, drill rig boilers, drilling and production traffic, production wells, water tank batteries, and compressor engines.[27] Another significant source of VOCs is hydraulic fracturing, which is commonly used to enhance natural gas production.[28] The GNBPA was approved despite the fact that the accompanying EIS indicated ozone levels are likely to exceed the EPA standards even without the new project.[29]

The remainder of this article explores why.

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20. UINTAH BASIN OZONE STUDY, *supra* note 2, at 14; *see also Health Effects of Ozone in the General Population*, *supra* note19.

21. This is the National Ambient Air Quality Standard (NAAQS) for ozone. *National Ambient Air Quality Standards (NAAQS)*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/air/criteria.html (last visited Apr. 17, 2013). EPA is in the process of revising this standard and is likely to lower it in 2013. *See Regulatory Actions*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/glo/actions.html (last visited Apr. 17, 2013).

22. UINTAH BASIN OZONE STUDY, *supra* note 2, at 39.

23. *Id.* at tbl. 4-1.

24. *Id.*

25. *Currently Designated Nonattainment Areas for all Criteria Pollutants*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/oaqps001/greenbk/ancl.html (last visited Apr. 17, 2013).

26. GREATER NATURAL BUTTES EIS, *supra* note 13, at tbl. 4.1-3.

27. *Id.*

28. *Oil and Natural Gas Air Pollution Standards*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/airquality/oilandgas/ (last visited Apr. 17, 2013).

29. GREATER NATURAL BUTTES EIS, *supra* note 13, § 4.1.1.4.

III. FOUR FEDERAL STATUTES + TWO AGENCIES = A REGULATORY HOLE

Four major federal laws apply to air quality and natural gas development on federal public lands, but none of them alone or together have been able to prevent the ozone problem in the Uintah Basin. The Clean Air Act regulates air quality of criteria pollutants like ozone, but it does not require permits for small sources of pollution like natural gas wells.[30] The Mineral Leasing Act authorizes the BLM to lease and permit natural gas development, and it contains no environmental safeguards.[31] The National Environmental Policy Act ("NEPA") requires all federal agencies to consider the environmental impacts of their "major" activities, including leasing and permitting natural gas wells.[32] But NEPA does not require an agency to choose the least harmful alternative or mitigate foreseeable damage.[33] Finally, the Federal Land Use Policy and Management Act ("FLPMA") requires the BLM to conduct land use planning before leasing any lands for natural gas development.[34] However, the multi-staged process by which the BLM permits small areas at a time ensures that its NEPA analysis is not broad enough to contemplate the environmental impacts of large-scale natural gas development.[35]

This section explores the three reasons for the lack of regulation governing the ozone problem in the Uintah basin, and how the disconnect in federal laws means that each agency is addressing only its own small part, and no single agency is comprehensively dealing with the problem.

First, the Clean Air Act is not suited to regulate emissions from natural gas development. Natural gas well fields are not considered "major stationary sources," so they do not require a pre-construction permit under the Act.[36] Even if natural gas developers were required to get a permit, the Uintah Basin is currently in compliance with the air quality standard for ozone.[37] Thus, under the Clean Air Act, the EPA

30. *See infra* Part III.A.2.

31. Mineral Leasing Act, 30 U.S.C. §§ 181-196 (2012); 43 C.F.R. § 3160.0-2 (2012); *see supra* Part III.B.1.

32. 42 USC § 4332 (2012); *see infra* Part III.B.2.

33. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) ("NEPA does not prohibit the undertaking of federal projects patently destructive of the environment; it simply mandates that the agency gather, study and disseminate information concerning the projects' environmental consequences."); *see also* OLGA L. MOYA & ANDREW L. FONO, FEDERAL ENVIRONMENTAL LAW USER'S GUIDE 57 (West 2d ed. 2001).

34. 43 U.S.C. § 1712 (2012); *see infra* Part III.B.1.

35. 43 U.S.C. § 1712; *infra* Part III.B.3.

36. *See* 42 U.S.C. § 7602(j) (2012) (definition of major stationary source).

37. *Currently Designated Nonattainment Areas for all Criteria Pollutants*, *supra* note 25.

cannot require pollution controls on existing sources and can only require limited controls on new sources.[38]

Second, the BLM is using its discretion over mineral leasing and environmental analysis to develop natural gas at a rate that is not protective of air quality in the Uintah Basin. The BLM's mission to develop mineral resources is strong under the Mineral Leasing Act and the more recent Energy and Policy Act of 2005.[39] Alternatively, the BLM's obligation to ensure environmental protection by all activities it permits is relatively weak under NEPA and FLPMA.[40] The BLM has a lot of discretion regarding when it conducts environmental analysis, how deep it looks for significant impacts, and when it requires mitigation as a lease or permit stipulation. In effect, the BLM has been allowing significant natural gas development at the expense of air quality.

Finally, the EPA and BLM are not working together effectively to reduce ozone levels in the Uintah Basin. Because each agency operates under a different directive and different statutes, their missions do not overlap. While the EPA must enforce the Clean Air Act, the BLM is charged with leasing and permitting gas development. The EPA can encourage the BLM to require more mitigation of air quality degradation from natural gas development, but it has no authority to force the BLM to require mitigation.[41] The somewhat conflicting missions of the EPA and BLM do not allow them to work together, and the Uintah Basin air quality suffers.

A. The Clean Air Act Does Not Regulate All Sources of Ozone in the Uintah Basin

Under the Clean Air Act, the EPA regulates ozone as a criteria pollutant because it is harmful to human health at certain concentrations. However, the Clean Air Act only provides for regulation of large stationary sources of emissions, so the EPA does not currently regulate wells and other small sources of emissions from natural gas development, which is where the current ozone problem arises.[42]

38. MOYA & FONO, *supra* note 33, at 268 (under PSD, EPA can only require BACT for new sources, not existing sources); 42 U.S.C. § 7411(a) (definition of new stationary sources).

39. *Infra* Part III.B.3.

40. *Id.*

41. *Infra* Part III.C.

42. GREATER NATURAL BUTTES EIS, *supra* note 13, at tbl. 4.1-3.

1. General Provisions of the Clean Air Act

The Clean Air Act was originally enacted in 1963 to study the nation's air pollution problems and fix them.[43] In 1970, The Clean Air Act was amended to create a comprehensive federal response to air pollution.[44] At the same time, Congress created the EPA and gave it authority to carry out the Clean Air Act.[45] The main concern of the Clean Air Act is the regulation of six "criteria pollutants"—particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead.[46] These pollutants became criteria pollutants because the EPA determined that they posed a significant threat to public health.[47]

Once the EPA established the criteria pollutants, it determined the acceptable level of each pollutant in the ambient air in order to "protect human health with a margin of safety."[48] This acceptable level became the primary standard or National Ambient Air Quality Standard (NAAQS) by which all air quality is measured.[49] If any particular region of the country does not meet the NAAQS for any of the six criteria pollutants, that region is in "non-attainment" for that pollutant.[50]

The EPA sets different technology-based regulations for meeting the NAAQS, depending on whether a region is in attainment or not.[51] The goal is to bring non-attainment areas into attainment and maintain air quality in areas that are already in attainment.[52] Emissions controls in areas of attainment only apply to new or modified sources, and they are less strict than emissions controls for non-attainment areas.[53] Emission controls in non-attainment areas apply to both new and existing stationary sources, although the technology required for new or modified sources is more stringent than the requirements for existing sources.[54]

In part to ensure adequate regulation of existing sources, the EPA can issue a New Source Performance Standard ("NSPS"), which is a

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43. EPA OFFICE OF AIR QUALITY PLANNING AND STANDARDS, EPA-456/K-07-001, THE PLAIN ENGLISH GUIDE TO THE CLEAN AIR ACT 2 (2007) [hereinafter PLAIN ENGLISH GUIDE TO THE CLEAN AIR ACT].

44. *Id.*

45. *Id.*

46. *Id.* at 4; 42 U.S.C. § 7409 (2012).

47. 42 U.S.C. § 7408(a)(1).; *see also* PLAIN ENGLISH GUIDE TO THE CLEAN AIR ACT, *supra* note 43, at 4; MOYA & FONO, *supra* note 33, at 250.

48. PLAIN ENGLISH GUIDE TO THE CLEAN AIR ACT, *supra* note 43, at 4; 42 U.S.C. § 7409(b)(1).

49. PLAIN ENGLISH GUIDE TO THE CLEAN AIR ACT, *supra* note 43, at 4.

50. *Id.*; 42 U.S.C. § 7407(d).

51. 42 U.S.C. § 7502(c) (provisions for emissions controls in non-attainment areas); *Id.* § 7408 (provisions for emissions controls in attainment ("PSD") areas).

52. *See* MOYA & FONO, *supra* note 33, at 241.

53. *See id.* at 267–68.

54. *See id.* at 263–64.

technology-based standard that applies to certain categories of stationary sources that emit certain pollutants.[55] An NSPS generally applies only to new sources or modifications of existing sources, but the EPA does have authority to enforce an NSPS for existing sources.[56] The EPA can choose to apply an NSPS to any source that emits a pollutant that the EPA determines "may reasonably be anticipated to endanger public health."[57] NSPSs are useful because they allow the EPA to enforce standard emission controls over an entire industry across the country, regardless of whether the source exists in an area of attainment or not.[58] For example, the EPA has an NSPS for petroleum refineries.[59]

Despite the expansive and complex regulatory system that evolved under the Clean Air Act, the EPA cannot adequately regulate ozone production from natural gas development.

2. Ozone from Natural Gas Development is Slipping Through the Hole in the Clean Air Act

The Clean Air Act is not suited to regulate emissions from natural gas development in the Uintah Basin for two reasons. First, the pollution from well fields comes from many disparate sources, and none of these sources are considered a "major stationary source" under the Act. Second, despite the high levels of winter ozone in the past three years, the Uintah Basin is still considered in compliance with respect to ozone, under the NAAQs.

The Clean Air Act defines a "major source" as "any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant."[60] If a pollution source is considered major, then it must get a pre-construction permit.[61] The permit will allow the source to emit certain levels of each criteria pollutant, depending on whether the area is in attainment of the NAAQS for that pollutant.[62] For example, natural gas compressor stations must get a permit for emissions of A, B, C pollutants. The level of A, B, and/or C that it can emit and the level of emissions controls it must install are more stringent if the refinery is going to operate in a non-attainment area for A, B, and/or C pollutant.

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55. *See id.* at 244–46; 42 U.S.C. § 7411.

56. 42 U.S.C. §§ 7411(d)(1)(A); *see also* ROY S. BELDEN, BASIC PRACTICE SERIES: CLEAN AIR ACT 79 (2d ed. 2011).

57. 42 U.S.C. § 7411(b); *see also* MOYA & FONO, *supra* note 33, at 243.

58. 42 U.S.C. § 7411.

59. 40 C.F.R. § 60.100 (2012); *see also* BELDEN, *supra* note 56, at 79–80.

60. 42 U.S.C. § 7602(j); *see also* MOYA & FONO, *supra* note 33, at 243, 261.

61. 42 U.S.C. § 7602(j); *see also* MOYA & FONO, *supra* note 33, at 243, 261.

62. 42 U.S.C. § 7503; *see also* MOYA & FONO, *supra* note 33, at 241–42.

On the other hand, the Clean Air Act does not regulate small pollution sources from natural gas development like wells, storage tanks, dehydrators generators, and trucks. The NOx and VOC emissions from these minor sources are significantly contributing to the problem of ozone in the Uintah Basin.[63] If the EPA would aggregate these minor sources with compressor stations to form one major source, then all emissions from natural gas development would be regulated under Clean Air Act. WildEarth Guardians, an environmental advocacy group, tried to argue this point for a well field in northern Colorado, but the EPA rejected its position in 2011.[64]

The second reason the Clean Air Act does not regulate ozone emissions in the Uintah Basin is that the area is still considered in attainment for the ozone NAAQS. If, however, the area was in non-attainment for ozone, the EPA would have to ensure that all sources of ozone were regulated to bring the region into compliance.[65] That would mean new and existing major sources would need to adhere to pollution control measures.[66] While non-attainment would still not ensure regulation of small sources of ozone from natural gas development,[67] it would ensure more stringent emissions controls on new and existing compressor stations that already need a major source permit. Despite the findings of the Uintah Basin Study, as of April 2013, the EPA does not deem this information sufficient to consider the Uintah Basin a non-attainment area for ozone.[68]

63. GREATER NATURAL BUTTES EIS, *supra* note 13, at tbl. 4.1-3.

64. WildEarth Guardians petitioned EPA in 2009 to force Colorado Department of Public Health and Environment to reconsider CDPHE's decision to not aggregate smaller sources with a compressor station's state permit. Kerr McGee/Anadarko Petroleum Corporation, Frederick Compressor Station, Order Responding to Petitioner's Request That Administrator Object to Issuance of a State Operating Permit, Petition No. VIII-2008-02 (Oct. 8, 2009). CDPHE did additional analysis and determined that aggregation was not necessary. Kerr McGee/Anadarko Petroleum Corporation, Frederick Compressor Station, Response of Colorado Department of Public Health and Environment, Air Pollution Control Division, To Order Granting Petition For Objection to Permit, Petition No. VIII-2008-02 (July 14, 2010). EPA approved CDPHE's analysis and refused to deny the permit in 2011. EPA approved CDPHE's analysis and refused to deny the permit in 2011. In re Kerr McGee/Anadarko Petroleum Corporation, Frederick Compressor Station, Order Responding to Petitioner's Request That the Administrator Object to Issuance of a State Operating Permit, Petition No. VIII-2008-02 (Feb. 2, 2011).

65. 42 U.S.C. § 7503; *see also* MOYA & FONO, *supra* note 33, at 241–42.

66. *Id.*

67. *See* MOYA & FONO, *supra* note 33, at 263–64 (even in non-attainment areas, it is more difficult to regulate existing sources); *see also id.* at 243, 261 (the Clean Air Act does not regulate small sources as stringently as major sources).

68. *Currently Designated Nonattainment Areas for all Criteria Pollutants*, *supra* note 25.

B. The BLM's Wide Discretion Over Natural Gas Development and Environmental Analysis is Widening the Regulatory Hole

As land manager in the Uintah Basin, the BLM's wide discretion in oil and gas permitting decisions also effects ozone production from natural gas development. One of the BLM's primary responsibilities is managing mineral leasing on federal public lands. The BLM must conduct land use planning to ensure consistency in management. The BLM has a "multiple-use" mandate, and environmental protection is just one of the factors it considers when making land use decisions. Therefore, air quality and ambient levels of ozone are not always adequately considered in the BLM's mineral leasing decisions.

1. The BLM's Mineral Leasing Authority and Land-Use Planning Obligations

Under the Mineral Leasing Act of 1920, mineral leasing on federal public lands comes under the authority of the Secretary of Interior.[69] By regulation, the Secretary of Interior has delegated his or her mineral leasing authority to the BLM.[70] Most federal public lands are available for leasing, unless they are withdrawn for specific purposes, like national parks or monuments.[71]

The BLM is required under the Federal Land Policy and Management Act of 1976 ("FLPMA") to conduct land use planning[72] and to use such plans for the management of all the BLM lands.[73] The agency conducts land use planning at the field office level, and the process begins as a Resource Management Plan (RMP).[74] After the approval of an RMP by the Secretary, any future actions by the BLM field office must be done in accordance with the RMP.[75]

FLPMA provides some guidance on the necessary content and considerations for RMPs.[76] FLPMA states that the BLM should "observe the principles of multiple use and sustained yield"[77]; use a systematic and

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69. 30 U.S.C. § 181 (2013). The Mineral Leasing Act withdrew oil and gas from availability for mineral location under the 1872 Mining Law. *Id.*

70. 43 C.F.R. § 3160.0-2 (2013).

71. 30 U.S.C. § 181.

72. 43 U.S.C. § 1712 (2013).

73. 43 U.S.C. § 1732(a).

74. U. S. BUREAU OF LAND MGMT., H-1601-1, LAND USE PLANNING HANDBOOK 1 (2005) [hereinafter BLM LAND USE PLANNING HANDBOOK] (BLM implements planning obligations under FLPMA 30 U.S.C. § 1712 and 43 C.F.R § 1600 by creating Resource Management Plans).

75. 43 C.F.R. § 1610.5-3(a) (2013).

76. *See generally* 43 U.S.C. § 1712(c); *see also*, GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW § 16:19 (2d ed. 2013), *available at* Westlaw 2 PUB. NAT. RESOURCES L. § 16:19.

77. 43 U.S.C. § 1712(c)(1).

interdisciplinary approach to consider the "physical, biological, economic, and other sciences"[78]; "weigh long-term benefits to the public against short-term benefits;"[79] "provide for compliance with applicable pollution control laws"[80]; and, to the extent practical, involve state and local decision makers in the planning process to ensure that BLM land use plans are consistent with state and local plans.[81] But FLPMA gives the BLM wide discretion on how to create RMPs, especially how much environmental compliance is required of its licensees and permittees.

While there are no explicit instructions in either statutes or agency regulations requiring the BLM to assess leasing scenarios in an RMP, most RMPs do consider leasing if the BLM anticipates interest in oil or gas development during the life of the RMP. However, if an RMP designates lands as "open" to possible leasing, this designation does not mandate leasing.[82] RMPs cover large areas over long time frames. Therefore, changing circumstances, updated policies, and new information between the RMP and the leasing stage may require additional planning and analysis.[83] By the time the BLM gets ready to put a parcel of lands up for auction, leasing may no longer be the best use of the resource. The BLM might decide not to lease the parcel, if for example, new information shows that the environmental impacts are greater than the economic value of developing the minerals.

In 2010, the Secretary of Interior addressed this problem by issuing a guidance document that instructed the BLM to create Master Leasing Plans (MLP) as an additional step to analyze the impacts of and potential alternatives to leasing decisions.[84] MLPs are created as a supplement or amendment to RMPs before leases are issued.[85] In the MLP, the BLM must reconsider decisions about resource protection and whether additional stipulations or prohibitions should be imposed on new leases.[86]

Once the BLM decides to offer leases, interested developers can bid on them at auction.[87] A lease, however, does not give a developer free reign to drill however or whenever it wants. The BLM has the authority

78. *Id.* § 1712(c)(2).

79. *Id.* § 1712(c)(7).

80. *Id.* § 1712(c)(8).

81. *Id.* § 1712(c)(9).

82. U. S. BUREAU OF LAND MGMT., INSTRUCTION MEMO 2010-117 § I.A (2010) [hereinafter BLM INSTRUCTION MEMO], *available at* http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/IM_2010-117.html.

83. *Id.* § II.

84. *Id.*

85. *Id.*

86. *Id.*

87. 30 U.S.C. § 226(b) (2013).

to put stipulations in leases for a variety of reasons, including environmental protection.[88] These may include time of year restrictions to protect sensitive habitats or other environmental values.[89] It is important for the BLM to put any necessary stipulations in a lease because if the BLM decides to limit any development later due to environmental concerns it can amount to an unlawful taking if there is no stipulation in the lease.[90] If it turns out that a lease is not profitable in the end, the lease owner has no recourse against the federal government.[91]

Moreover, a developer must apply for a permit to drill for exploration and then apply for another permit to drill and develop the well field.[92] A successful Application for Permit to Drill ("APD") must contain a detailed description of all operations, including uses of roads and rights-of-way.[93] The developer must submit a separate APD for each well.[94] Usually, the BLM will review several APDs together as one project.[95]

In sum, the BLM's multiple-use mandate and multi-stage permitting process means that air quality and ambient levels of ozone are not always adequately considered in the BLM's mineral leasing decisions.

2. NEPA in the Context of Mineral Leasing

NEPA requirements help force the BLM to consider environmental impacts of its actions. Enacted in 1970 to increase environmental protection by federal agencies,[96] NEPA directs all federal agencies, except the President and Congress, to consider the effects of any "major federal action" on the human environment before taking such action.[97] Congress granted regulatory authority under NEPA to the President's Council on Environmental Quality ("CEQ").[98]

NEPA is a procedural, rather than a substantive, environmental statute because it does not proscribe any particular actions. Rather, NEPA dictates the procedures that federal agencies must follow before

88. *Id*. § 226(g); 43 C.F.R. § 3101.1-3 (2013).

89. 43 C.F.R. § 3503.28.

90. 43 C.F.R. § 3101.1-4 (BLM can only modify a lease if it will not cause unacceptable impacts).

91. 30 U.S.C. § 226.

92. 43 C.F.R. § 3162.3-1.

93. *Id.* § 3162.3-1(d).

94. *Id.* § 3162.3-1.

95. *Id.*

96. 42 U.S.C. § 4331 (2013); *see also* MOYA & FONO, *supra* note 33, at 52.

97. 42 U.S.C. § 4332; *see also* MOYA & FONO, *supra* note 33, at 52.

98. 42 U.S.C. §§ 4321, 4342; *see also* MOYA & FONO, *supra* note33, at 78 (President Carter gave the CEQ the authority to issue binding regulations in 1977).

implementing any federal action.[99] NEPA requires federal agencies to take a "hard look at environmental consequences," but it does not require the agencies to choose the most environmentally preferable alternative.[100] Agencies may also consider economic and technical considerations when choosing the preferred action.[101]

NEPA requires that agencies conduct and document a thorough investigation in order to determine whether and how any proposed action is likely to affect the human environment.[102] This investigation must be done before any irretrievable commitment of resources is made,[103] but it may be done at any time where it will be helpful for agency planning or decision-making.[104]

If the agency action is not likely to have a significant effect on the environment, or if the environmental impact can be mitigated, then the agency issues an Environmental Assessment ("EA") and a Finding of No Significant Impact ("FONSI") and the action may proceed.[105]

Alternatively, if the proposed action is likely to significantly affect the environment, the agency must conduct a more extensive investigation and produce an Environmental Impact Statement ("EIS").[106] An EIS must be a comprehensive analysis of the likely environmental impacts of the proposed federal action and multiple alternatives.[107] Its purpose is to aid agencies in making informed decisions about how their actions will affect the environment and how best to avoid or minimize those impacts.[108] In so doing, the EIS must include an analysis of direct, indirect, and cumulative impacts.[109]

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99. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) ("NEPA does not prohibit the undertaking of federal projects patently destructive of the environment; it simply mandates that the agency gather, study and disseminate information concerning the projects' environmental consequences."); *see also* MOYA & FONO, *supra* note 33, at 57.

100. *Robertson*, 490 U.S. at 350; *see also* MOYA & FONO, *supra* note 33, at 57.

101. 40 C.F.R. § 1505.2(b) (2013).

102. 42 U.S.C. § 4332; 40 C.F.R. § 1501; *see also* MOYA & FONO, *supra* note 33, at 52.

103. Conner v. Buford, 848 F.2d 1441, 1446 (9th Cir. 1988); *see also* MOYA & FONO, *supra* note 33, at 80.

104. 40 C.F.R. § 1501.3(b).

105. 40 C.F.R. §§ 1501.4(e), 1508.13; *see also* MOYA & FONO, *supra* note 33, at 75.

106. 40 C.F.R. § 1501.4; 40 C.F.R. § 1508.27 (definition of "significantly").

107. 40 C.F.R. §§ 1502.2(d), (e); § 1502.16(d).

108. 40 C.F.R. § 1502.1.

109. 40 C.F.R. §§ 1502.16 (a), (b). The CEQ regulations define "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7

NEPA does not require agencies to mitigate environmental impacts,[110] but agencies must discuss in the EIS any mitigation measures they *plan* to take.[111] New CEQ guidance provides that agencies that create mitigation plans in their EISs should set up procedures to ensure follow through.[112] However, if a FONSI is predicated on the promise of mitigation, then the project developer is bound to perform the mitigation.[113]

The BLM is required to do NEPA analysis at several steps in the mineral leasing process:

1. In conjunction with an RMP;[114]
2. In conjunction with an MLP;[115]
3. Before leasing;[116]
4. Before approving an APD permit to drill for exploration;[117] and
5. Before approving an APD permit to drill development.[118]

Analysis of environmental impacts at each of these stages is necessary because each stage becomes increasingly detailed. The environmental impacts analyzed at the RMP phase may not be as significant as those analyzed at the APD phase. For example, the RMP will not identify the specific placement, spacing, and number of wells, but the APD will.

According to the BLM departmental manual, approving an RMP is one of the actions that typically require an EIS, rather than merely an EA.[119] At the RMP stage, the BLM analyzes the environmental impacts of opening specific areas for leasing. Otherwise, the leasing activity might be considered outside the scope of the RMP, which would violate FLPMA.[120] Furthermore, it would be a "major federal action" that was not previously analyzed under NEPA.[121] However, if an RMP did not consider leasing and an oil or gas developer expresses an interest in

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110. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989); *see also* MOYA & FONO, *supra* note 33, at 90.

111. 40 C.F.R. §§ 1502.14(f), 1502.16(h) (emphasis added).

112. Final Guidance for Federal Departments and Agencies on the Appropriate Use of Mitigated Findings of No Significant Impact, 76 Fed. Reg. 3843 (Jan. 21, 2011).

113. *See* MOYA & FONO, *supra* note 33, at 89.

114. 43 C.F.R. § 1601.0-6 (2013).

115. BLM INSTRUCTION MEMO, *supra* note 82, § II.

116. Northern Alaska Envtl. Ctr. v. Kempthorne, 457 F.3d 969 (9th Cir. 2006).

117. U. S. BUREAU OF LAND MGMT., H-1790-1, NEPA HANDBOOK §3.3 (2008) [hereinafter BLM NEPA HANDBOOK] (the approval of an APD is a "major federal action").

118. *Id.*

119. U. S. DEP'T OF THE INTERIOR, 516 DM 11, DEP'T MANUAL BUREAU OF RECLAMATION 11.8.B (2008), *available at* http://www.blm.gov/wo/st/en/prog/planning/nepa/webguide/departmental_manual/516_dm_chapter_11.html.

120. 43 C.F.R. § 1610.5-3(a) (2013).

121. 42 U.S.C. § 4332 (2013).

leasing, then the BLM field office can conduct a supplemental EA or EIS to evaluate the environmental impacts.[122]

The bigger question that has not been resolved is when must the BLM conduct additional NEPA analysis before approving an APD for exploration or resource development.[123] Statistically, only one in ten leases are drilled and only one in ten drilled leases produces commercial quantities of oil or gas.[124] Thus, the BLM has successfully argued that it cannot possibly do an adequate EIS of the effects of well drilling at the leasing stage because there is too much uncertainty about the extent of actual drilling.[125] Although the BLM must always do additional NEPA analysis before it approves an APD, sometimes only an EA will satisfy NEPA, and other times an EIS is necessary at the APD phase.[126] The point in the process when the BLM decides to do an EIS may affect how and whether air quality is adequately protected.

3. The BLM Lacks the Resources and Directive to Close the Air Quality Hole

While both NEPA and FLPMA require the BLM to ensure compliance with environmental laws, the BLM does not have the resources or capacity to monitor air quality and ensure that the entire area of oil and gas development is in compliance with the NAAQS.[127] The BLM is a land management agency with a strong Congressional directive to get domestic oil and gas out of the ground.[128] Under FLPMA, the BLM is required to do land use planning,[129] and under NEPA, the BLM is required to do environmental analysis.[130] However, neither statute directs the BLM about the stringency of potential mitigation measures in

122. 40 C.F.R. § 1502.9 (2013).

123. COGGINS & GLICKSMAN, *supra* note 76, § 39.24 ("The question of exactly when to do environmental evaluation is ripe for a dispositive judicial decision."); GEORGE CAMERON COGGINS ET AL., FED. PUB. LAND & RES. LAW 645 (Foundation Press 6th ed. 2007) (citing NATIONAL ACADEMY OF SCIENCES, LAND USE PLANNING AND OIL AND GAS LEASING ON ONSHORE FEDERAL LANDS 10–13 (1989)).

124. COGGINS, ET AL., *supra* note 123, at 645 (citing NATIONAL ACADEMY OF SCIENCES, LAND USE PLANNING AND OIL AND GAS LEASING ON ONSHORE FEDERAL LANDS 10–13 (1989)).

125. *Cf.* Cnty. of Suffolk v. Sec'y of the Interior, 562 F.2d 1368, 1374 (2d Cir. 1977); *see also* COGGINS & GLICKSMAN, *supra* note 76, § 39.7 n.4.

126. *See* COGGINS & GLICKSMAN, *supra* note 76, § 39.24.

127. Interview with Leonard Herr, U.S. Bureau of Land Mgmt. (Apr. 5, 2012).

128. *See, e.g.*, 42 U.S.C. § 15921 (2012); GREATER NATURAL BUTTES EIS, *supra* note 13, § 1.5.4; Memorandum of Understanding Among the U.S. Department of Agriculture, U.S. Department of the Interior, and U.S. Environmental Protection Agency, Regarding Air Quality Analyses and Mitigation For Federal Oil and Gas Decisions Through the National Environmental Policy Act Process, Preamble (2011) [hereinafter MOU].

129. 43 U.S.C. § 1712 (2013).

130. 42 U.S.C. § 4332 (2013).

order to avoid environmental impacts. Further, neither statute directs the BLM on whether or how to consider all current and future development at one time in order to effectively evaluate the long-term impacts on air quality of development in an entire basin.

The reality is that the BLM makes leasing decisions without considering the impacts of all possible well development because it does not know when the operators plan to drill.[131] While the BLM does consider the specific impact of well permitting decisions for exploration and well field development on air quality, it does so rather myopically. Specifically, the BLM's process of analyzing each APD separately may cover too small a scale to really identify the cumulative impacts and standardize mitigation measures.[132] The cumulative impact analysis in BLM NEPA documents may consider the relative impact of each operator's actions relating to current operations, but it does not typically evaluate the cumulative impacts of all the likely projects in the same general area.[133] The BLM's cumulative impacts analysis assesses the impacts of all the "reasonable foreseeable development scenarios," which are "those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends."[134] The BLM is not required, however, to speculate about future development in its cumulative impacts analysis.[135] Therefore, when the BLM is evaluating the air quality impacts of an individual APD in the Uintah Basin, it does not consider the potential impacts on air quality of the full development of the basin.

Finally, even when the BLM finds that the proposed well development is likely to increase air pollution above the NAAQS, it continues to permit new well development.[136] For example, in the EIS for the approved development in GNBPA, the BLM states that even with the no action alternative, ozone levels are projected to exceed the NAAQS in the Uintah Basin.[137]

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131. *See, e.g.*, Northern Alaska Envtl. Ctr. v. Kempthorne, 457 F.3d 969 (9th Cir. 2006); *but see* Pennaco Energy Inc. v. U.S. Dept. of the Interior, 377 F.3d 1147 (10th Cir. 2004).

132. BLM INSTRUCTION MEMO, *supra* note 82, § II.

133. *See, e.g.*, U. S. BUREAU OF LAND MGMT., DOI-BLM-UT-G010-2010-0336, ENVIRONMENTAL ASSESSMENT, QEP ENERGY CO.'S TWO WILDCAT WELLS, UINTAH, UTAH & DUCHESNE, UTAH § 4.3.1 (2012) (this EA for an APD compare the incremental increases of NOx and VOCs of this project to the background concentrations and declares that it is insignificant. The EA does not compare the increase from this project and any other proposed projects to look at a total increase in air pollutants during the life of the project).

134. BLM NEPA HANDBOOK, *supra* note 117, § 6.8.3.4.

135. *Id.*

136. *See, e.g.*, GREATER NATURAL BUTTES EIS, *supra* note 13, § 4.1.1.4.

137. *Id.*

This lack of seemingly responsible behavior on the part of the BLM is because the BLM's focus is permitting oil and gas development, not protecting air quality. And while environmental health is the EPA's primary responsibility, the EPA cannot force the BLM to make permitting decisions that would ensure safe ozone levels.

C. The EPA and BLM are Not Working Together Effectively to Address the Ozone Problem

The EPA and BLM have very different functions. The EPA is a regulatory agency tasked with upholding environmental laws. It must enact and enforce pollution control regulations, unless the enforcement has been delegated to a state or tribe. As part of enforcement, the EPA is responsible for monitoring emissions and ensuring compliance by all permit holders. The BLM, on the other hand, is a management agency tasked with managing the public lands for multiple uses, including resource extraction. While the BLM must, on paper, require its licensees and permittees to comply with all federal pollution control laws, it lacks either the means or the legal directive to ensure compliance. Similarly, while the EPA has the capacity and authority to ensure compliance with the Clean Air Act, its hands are tied when it comes to forcing the hand of the BLM in leasing and permitting decisions.

The NEPA process is the key place where both the EPA and BLM can mitigate air emissions because emissions from the disparate sources in a natural gas well field are not major, and thus not regulated under the Clean Air Act. Nevertheless, a NEPA review is not an ideal process from the perspective of pollution control and environmental protection because the purpose of NEPA is environmental impact analysis, not environmental protection.

Section 309 of the Clean Air Act authorizes the EPA to review proposed actions of other agencies to ensure compliance with NEPA guidelines.[138] The EPA will rate an EIS for the adequacy of the environmental analysis and the overall impact of the project on the environment.[139] Specifically, the EPA looks at the cumulative impacts analysis and whether the EIS adequately assessed the impact of all past, present, and reasonably foreseeable actions related to the proposed action.[140] The EPA will also suggest mitigation measures that the action agency could impose on project operators that will decrease the

138. 42 U.S.C. § 7609 (2013).

139. U. S. ENVTL. PROT. AGENCY, POLICY AND PROCEDURES FOR THE REVIEW OF FEDERAL ACTIONS IMPACTING THE ENVIRONMENT ch. 4, § 4 (1984) [hereinafter EPA NEPA REVIEW DOC].

140. U. S. ENVTL. PROT. AGENCY, CONSIDERATION OF CUMULATIVE IMPACTS IN EPA REVIEW OF NEPA DOCUMENTS § 4.3 (1999) [hereinafter EPA CUMULATIVE IMPACTS REVIEW DOC].

environmental impact of the project.[141] If the EPA determines that the agency's NEPA document is unsatisfactory, and the BLM refuses to change the EIS, then the EPA can send the matter to the CEQ, which has authority to force the BLM to redo its NEPA document.[142] However, the BLM makes the final determination of what alternative to use and what (if any) mitigation measures to impose on the operators. In the case of mineral leasing, even if the BLM has the best intentions to prevent ozone pollution, the multi-stage process of planning, leasing, permitting for exploration, and permitting for development make it very difficult for the BLM to adequately assess the environmental impacts in enough time to do something about it.

This section described how four major federal laws apply to air quality and natural gas development on federal public lands, but none of them, alone or together, have been able to prevent the ozone problem in the Uintah Basin. The next section explores new policies and regulations enacted by the EPA and BLM that may help sew up this regulatory hole.

IV. NEW POLICIES THAT MAY HELP SEW UP THE REGULATORY HOLE

In the past few years, the EPA has been working to create cooperative and comprehensive air quality regulations. First, in 2011 the EPA negotiated a Memorandum of Understanding (MOU) between itself, the Department of Interior (where the BLM resides), and the Department of Agriculture (where the National Forest Service resides[143]) to increase consistency in air quality monitoring and mitigation related to oil and gas operations on federal public lands.[144] Second, the BLM is increasing its consideration of air quality impacts as it permits new gas wells in the Uintah Basin.[145] Finally, the EPA just released new NSPS regulations for natural gas operations that require more stringent pollution control measures, regardless of attainment status.[146]

A. MOU Between Federal Agencies to Increase Air Quality Monitoring

In June 2011, the EPA, Department of Interior, and Department of Agriculture entered into an MOU in an effort to create a standardized approach to evaluating and mitigating air quality impacts of future oil

141. *Id*. § 3.

142. EPA NEPA REVIEW DOC, *supra* note 139, at ch. 9, § 1.

143. Some oil and gas leases are on National Forest land, but even these are regulated and permitted through the BLM.

144. MOU, *supra* note 128.

145. GREATER NATURAL BUTTES EIS, *supra* note 13, at ch. 3, ch. 4.

146. NSPS REGS FACT SHEET, *supra* note 14.

and gas development.[147] The MOU's goal is to increase collaboration among the agencies during the NEPA process in order to protect air quality and facilitate development of the nation's oil and gas resources.[148] The MOU notes the need for "predictable, science-based processes to protect air quality," while at the same time "eliminat[ing] unnecessary uncertainty and delay" in the permitting process.[149] The agencies promise to collaborate on the NEPA process, and the EPA promises to give good ratings to the resulting NEPA analyses.[150] Further, the agencies promise to "strive to ensure, to the maximum extent practicable, that Federal decisions relating to oil and gas will not cause or contribute to exceedances of the NAAQS . . . ."[151] The procedures set out in the MOU apply to all stages of the oil and gas planning and permitting process where NEPA is required, from general RMPs to potential region-wide MLPs to project-specific APDs.

The substantive focus of the MOU is to institute standardized procedures for identifying air quality impacts of proposed oil and gas development. This is accomplished in the following two steps: the emissions inventory and, if necessary, air quality modeling.[152] The MOU requires, "as early as possible in its planning process," the Lead Agency (the BLM in the case of the Uintah Basin) to identify the "reasonably foreseeable number of oil and gas wells" expected in the planning area.[153] The BLM then prepares an "Emissions Inventory of criteria pollutants and volatile organic compounds,"[154] which is a preliminary assessment of all the likely emissions of the proposed action that will contribute to local and regional air quality.[155] The BLM uses the Emissions Inventory to determine if air quality modeling is necessary.[156]

Air quality modeling is necessary if certain criteria are met relative to the expected emissions/impacts and the geographic location of the proposed action.[157] The BLM models potential air quality only if the Emissions Inventory determines that the expected emissions will cause or contribute to an exceedance of the NAAQS and the proposed action is

147. MOU, *supra* note 128, at 1.
148. *Id.*
149. *Id.*
150. *Id.*
151. *Id.* § I.
152. *Id.* § V.E.
153. *Id.* § V.E.1.
154. *Id.* § V.E.2.
155. *Id.* § III.
156. *Id.* § V.E.2.
157. *Id.* § V.E.3.

in, or near, a nonattainment area for that NAAQS or in, or near, an area that is already predicted to exceed the NAAQS.[158]

Various air quality modeling methods are described in the appendix of the MOU. The modeling is a technical, quantitative analysis of air quality in a broad region.[159] Air quality modeling was not previously done as part of the NEPA process, so the EPA is optimistic that the MOU will help improve impacts analysis and lead to more effective and efficient mitigation.[160]

Unfortunately, while the MOU is likely to increase air quality modeling in areas of non-attainment, it still falls short of requiring earlier emissions inventories, increased modeling, or better mitigation in areas of attainment.

First, the BLM does not conduct its Emissions Inventory until it is permitting at the project level. Recall, the Emissions Inventory is based on anticipated emissions from "reasonably foreseeable number of oil and gas wells." The BLM does not anticipate the reasonably foreseeable number of wells at the RMP or leasing level because there are too many factors to consider. However, it could. The BLM has guidance documents advising it to create reasonably foreseeable development scenarios "based primarily on geology (potential for oil and gas resource occurrence) and past and present oil and gas activity.[161] Such decisions are made at all levels of planning, including the RMP.[162] The MOU points to this document in its definition of "reasonably foreseeable number of wells."[163] The appendix of the MOU includes a concept paper with an example of air quality modeling that is meant to be used at these early stages to get a broad idea of the likely changes in air quality.[164]

Second, the MOU does not require air quality modeling when the proposed actions (or the cumulative effects of the proposed action) are not likely to contribute to an exceedance of the NAAQS—based only on the preliminary Emissions Inventory. This allows the BLM to dictate when it will do any modeling because the BLM prepares its own preliminary Emissions Inventory.

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158. *Id.*

159. *Id.* at app.

160. Interview with Kate Fay, U.S. Envtl. Prot. Agency (Feb. 25, 2012).

161. ROCKY MOUNTAIN FEDERAL LEADERSHIP FORUM ON OIL AND GAS, NEPA, AND AIR QUALITY, INTERAGENCY REFERENCE GUIDE, REASONABLY FORESEEABLE DEVELOPMENT SCENARIOS AND CUMULATIVE EFFECTS ANALYSIS 3 (2003) [hereinafter GUIDE TO REASONABLY FORESEEABLE DEVELOPMENT SCENARIOS].

162. *Id.* at 6.

163. MOU, *supra* note 128, § III.

164. *Id.* at app.

Third, the MOU does not force the BLM to require more comprehensive mitigation of project developers. The MOU pledges to "identify reasonable mitigation and control measures and design features to address adverse impacts to air quality," but, the BLM still has wide discretion to evaluate these measures and determine whether to implement them in permits or leases.[165]

Because the MOU does not change the legal authority of any signatory agencies or impose any additional responsibilities on them,[166] it is understandable that the MOU leaves the BLM discretionary procedures largely intact.

B. The New EIS for Natural Gas Development in the Uintah Basin Focuses on Ozone Mitigation

In March 2012, the BLM released a project-level EIS evaluating proposed oil and natural gas drilling in the Greater Natural Buttes Project Area (GNBPA) of the Uintah Basin of northeastern Utah.[167] The GNBPA consists of approximately 162,911 acres in an existing gas-producing region of northeast Utah.[168] Surface land ownership in the GNBPA consists of approximately 54 percent federal government (managed for mineral leasing by the BLM), 20 percent State of Utah, 24 percent Ute Tribe, and 1 percent private landowners.[169] The BLM Vernal Field Office has jurisdiction over all federal public lands in the GNBPA.[170] The project proponent is Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation.[171] KMG owns contractual leasehold rights for approximately 85 percent of the GNBPA.[172]

The EIS evaluates four alternatives for the GNBPA: No Action, Proposed Action (proposed by KMG), Resource Protection (preferred by the BLM), and Optimal Recovery.[173]The No Action alternative would include no new well development, but it contemplates environmental impacts associated with already-permitted drilling activities.[174] The Proposed Action alternative is for over 3,600 new wells with one well

165. *Id.* § IV.
166. *Id.* § VIII.A.
167. GREATER NATURAL BUTTES EIS, *supra* note 13, § 1.1.
168. *Id.*
169. GREATER NATURAL BUTTES EIS ROD, *supra* note 10, § 2.
170. GREATER NATURAL BUTTES EIS, *supra* note 13, § 1.1.
171. *Id.*
172. *Id.*
173. *Id.* § 2.0.
174. *Id.* § 2.4.

pad per twenty acres.[175] The Resource Protection alternative is also for over 3,600 new wells, but some wells would share the same wellpad so there would be one well pad per forty acres.[176] Finally, the Optimal Recovery alternative would have over 13,000 new wells at one well pad per ten acres.[177] On May 7, 2012, Secretary of Interior Salazar approved the Resource Protection Alternative in a Record of Decision.[178]

All the alternatives analyzed in the EIS involve hydraulic fracturing ("fracking"), which involves pumping fluids under high pressure into a natural gas formation to create fractures, thereby increasing the productivity of the well.[179] Moreover, all of the alternatives, including the no action alternative, are likely to involve ozone levels above the NAAQS.[180] This is because ozone levels above the NAAQS have already been observed during the past two winters in the Uintah Basin.[181] The EPA made comments on the air quality analysis in the EIS, in which it commended the BLM and KMG for taking voluntary measures to reduce ozone, but the EPA did not protest the approval of any new development in an area that is already seeing winter ozone levels above the NAAQS.[182]

The positive aspects of the GNBPA EIS are the voluntary mitigation and adaptive management programs it describes to go along with either the Proposed Action or Resource Protection alternatives.[183] KMG has voluntarily agreed to an "ozone action plan," which includes using low-emissions devices and green completions.[184] KMG also agreed to implement a project-specific adaptive management plan that includes "enhanced" ozone mitigation measures in the event of an exceedance of the NAAQS.[185] The enhanced mitigation measures include reducing the number of drill rigs operating at any one time, in addition to using natural gas engines that have lower emissions than traditional diesel

175. *Id.* § 2.6.
176. *Id.* § 2.7.
177. *Id.* § 2.8.
178. GREATER NATURAL BUTTES EIS ROD, *supra* note 10.
179. GREATER NATURAL BUTTES EIS, *supra* note 13, § 2.5.3.3.
180. *Id.* § 4.1.1.4.
181. *Id.* § 3.1.2.
182. *Id.* § 7.3.3
183. *Id.* § 4.1.2.6.
184. *Id.* Green completion means that after the fracking process, excess gas is captured, not emitted into the air. *See supra* Part IV.C.
185. GREATER NATURAL BUTTES EIS, *supra* note 13, § 4.1.2.6.

engines.[186] These measures were not included in the Vernal RMP from 2008 or the Draft GNBPA EIS from 2010.[187]

The inclusion of mitigation specifically for ozone in the Final EIS demonstrates that both the BLM and the natural gas industry realize the urgency of the ozone problem in the Uintah Basin.

C. The EPA Regulations Require Ozone Mitigation in All New Natural Gas Development

In April 2012, the EPA issued "cost-effective" regulations to reduce emissions of VOCs and other pollutants like methane and benzene from oil and natural gas development.[188] These regulations have been in the works since early 2010 when the U.S. District Court for the District of Columbia issued a consent decree ordering the EPA to review its New Source Performance Standards under Section 111 of the Clean Air Act.[189] The final rules are the first federal air standards for natural gas wells that address fracking emissions.[190] According to the EPA, these regulations provide significant environmental benefits while still allowing responsible growth in U.S. oil and natural gas production.[191] The new regulations basically require natural gas developers to reduce emissions of VOCs by 95 percent in newly fracked or refracked wells.[192] The changes that are required include either burning or capturing gas that is currently being leaked into the atmosphere during the well completion process.[193] Because developers can sell the captured gas, the EPA estimates that the new regulations will result in cost savings to industry of between $11 and $19 million when the rules are fully implemented in 2015.[194] Industry has been quick to point out that they have already been employing these methods in about half the fracked natural gas wells in

186. *Id.* § 4.1.2.6

187. VERNAL RMP, *supra* note 6; U. S. BUREAU OF LAND MGMT., DES 10-31, GREATER NATURAL BUTTES DRAFT ENVIRONMENTAL IMPACT STATEMENT § 4.1 (2010).

188. NSPS REGS FACT SHEET, *supra* note 14, at 1.

189. *Id.*; Consent Decree, WildEarth Guardians v. Jackson, 1:09-cv-00089-CKK (D.D.C), Dkt. Entry # 25 (Feb. 4, 2010), *available at* http://www.jacksonkelly.com/jk/pdf/C2110376.PDF; *see also* 42 U.S.C. § 7411(11)(1)(B) (requiring that EPA review NSPS standards every eight years for industrial pollutants that cause, or significantly contribute to, air pollution that may endanger public health). The consent decree also required EPA to review its major source air toxic standards, but this paper is only concerned with the standards for VOCs because they are precursors to ozone.

190. NSPS REGS. FACT SHEET, *supra* note 14, at 1.

191. *Id.*

192. *Id.*

193. U. S. ENVTL. PROT. AGENCY, SUMMARY OF REQUIREMENTS FOR PROCESSES AND EQUIPMENT AT NATURAL GAS WELL SITES 1-2 (2012), *available at* http://www.epa.gov/airquality/oilandgas/pdfs/20120417summarywellsites.pdf[hereinafter NSPS REGS WELL SITES].

194. NSPS REGS FACT SHEET, *supra* note 14, at 1.

the U.S.,[195] and that these processes are already required by both Wyoming and Colorado.[196]

The EPA's new regulations require changes at four stages of the natural gas development process: well sites, gathering and boosting stations, processing plants, and compressor stations.[197] After a well is drilled, it must be "completed." Completion is the process when the well is prepared for gas to flow from it. Fracking occurs during the completion process.[198] Once completed, gas is pumped into transmission lines. After natural gas leaves the well, it may travel to a gathering or boosting station ("gathering station"). A gathering station collects gas from multiple wells and helps move it towards a processing plant.[199] Gathering stations use compressors to move the gas along a pipeline to compressor stations.[200] Eventually, the gas moves to processing plants where impurities are removed, and the gas is prepared for delivery to industrial and residential customers.[201] The regulations do not apply to the transmission or delivery of gas after it passes through a processing plant because the VOC content is very low.[202]

These NSPS regulations targeted fracked wells because VOCs are emitted during the "flowback" stage of the well completion process for fracked wells.[203] During fracking, sand or artificial ceramic materials (proppant) are injected into the fractures to keep them open.[204] After fracking, the fracturing fluids are withdrawn, but the proppant remains in the fractures.[205] During this flowback period, which lasts three-to-ten days, water, gas, and fracking fluids come to the surface at high velocity and volume.[206]

The new regulations require the escaping gas be either burned or captured during the flowback stage.[207] There are two phases of the new

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195. *Id.*; *see, e.g.*, *First National Fracking Air Emissions Standard Set by U.S. EPA*, ENV'T NEWS SERVICE, Apr. 18, 2012, http://ens-newswire.com/2012/04/19/first-national-fracking-air-emissions-standard-set-by-u-s-epa/ (comments from Howard Feldman of the American Petroleum Institute).

196. NSPS REGS FACT SHEET, *supra* note 14, at 1-2.

197. *Id.* at 1.

198. NSPS REGS FACT SHEET, *supra* note 14, at 3.

199. U. S. ENVTL. PROT. AGENCY, SUMMARY OF REQUIREMENTS FOR PROCESSES AND EQUIPMENT AT NATURAL GAS GATHERING & BOOSTING STATIONS 1-2 (2012), *available at* http://www.epa.gov/airquality/oilandgas/pdfs/20120417summaryboost.pdf.

200. *Id.* at 1.

201. NSPS REGS WELL SITES, *supra* note 193, at 1.

202. *Id.* at 1-2.

203. NSPS REGS FACT SHEET, *supra* note 14, at 3.

204. GREATER NATURAL BUTTES EIS, *supra* note 13, § 2.5.3.3.

205. *Id.*

206. NSPS REGS. FACT SHEET, *supra* note 14, at 3.

207. NSPS REGS WELL SITES, *supra* note 193, at 1-2.

regulations.[208] During the first phase (before Jan. 1, 2015), VOC emissions must be reduced by either destroying the gas through flaring (burning), or by capturing the gas for sale back into the system ("green completions").[209] After Jan. 1, 2015, all VOC reductions must be green completions.[210] Exploratory wells and low-pressure wells are excepted from the green completion requirement, but these wells still have to implement flaring in order to burn off excess gas instead of emitting it into the atmosphere.[211]The EPA offers an extra incentive for refracked wells to employ green completions before 2015: the refracking process will not be treated as a modification, and thus the operator will not have to apply for additional Clean Air Act permits.[212]

In addition to requirements on the wells themselves, the new EPA regulations require a reduction of 95 percent of VOC emissions from storage vessels, pneumatic controllers, and compressor stations located at wellsites or between wellsites and processing stations.[213] The EPA estimates that reducing VOC emissions by 95 percent will result in combined annual emission-reductions of 190,000 to 290,000 tons of VOCs.[214] Utah does not have any state regulations for green completions, so this is a step in the right direction for the Uintah Basin.

Overall, this new NSPS fills in the gaps of the Clean Air Act, under which small sources were not as stringently regulated in attainment areas.

The NSPS regulations do have some significant limitations, however. First, the EPA could be doing more and quicker. For example, the regulations have a two-and-a-half year phase-in for green completions, there are no regulations for pneumatic controllers and compressors on the transmission side, and exploratory wells are exempted. Further, the new standards do not regulate mobile sources of VOCs and NOx. Finally, the new regulations are only for new wells. Thus, they do nothing to improve the already high levels of winter ozone observed in the Uintah Basin for the last three years.

The EPA and BLM's new policies and regulations are a step in the right direction, but they are not enough.

208. *Id.* at 1.
209. *Id.*
210. *Id.*
211. *Id.* at 2.
212. *Id.*
213. NSPS REGS. FACT SHEET, *supra* note 14 at 1.
214. *Id.*

V. RECOMMENDATIONS GOING FORWARD

The BLM may say, "let it flow," but new natural gas development in the Uintah basin should not come at the expense of air quality. Under their current statutes and regulations, the EPA and BLM are not preventing ozone levels that already far exceed the standards set to protect human health. The new policies and regulations discussed in this article are a step in the right direction, but they are not enough. The MOU is not binding, and the BLM retains complete discretion whether to conduct air quality monitoring and how much mitigation to require. The BLM approved the GNBPA project despite likely NAAQS exceedances, which demonstrates that the BLM is more committed to energy development than environmental protection. The NSPS regulations only apply to new development and do not deal with mobile sources.

While the EPA could tighten its NAAQS for ozone, or declare the Uintah Basin in non-attainment, the ozone problem cannot be solved without significant changes in BLM procedures. The BLM should utilize the MLP process as it was intended to develop consistent mitigation strategies and apply them across state and field office borders.[215] More importantly, the BLM should implement air quality modeling at either the RMP or MLP stage or both, and not wait for the APD stage. The models should consider the potential emissions of any likely development scenarios. These reasonably foreseeable development scenarios should be based on current geologic knowledge of available gas resources, current and anticipated price of natural gas related to cost of extraction (including cost of environmental compliance), and technology available for extraction, and not merely based on gas development that has been proposed or already approved. Then the BLM should create permitting scenarios that will prevent exceedance of NAAQS and stop approving new permits once that threshold is reached.

Finally, the natural gas industry cannot be left off the hook. Developers should not wait to be told how to mitigate and when because then they might not have the opportunity to choose the methods that are most cost efficient. Developers should take the lead and implement voluntary ozone mitigation, as Kerr-McGee is doing in the Greater Natural Buttes Project Area.

Only when every responsible entity takes ownership of the ozone problem can we really begin to sew up the regulatory hole.

215. BLM INSTRUCTION MEMO, *supra* note 82, § I.C.