

**AIR QUALITY CONSTRAINTS UPON ENERGY
PROJECT DEVELOPMENT ON PUBLIC LANDS**

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The ability of proposed energy development projects on the public lands to comply with the evolving requirements of the Clean Air Act (CAA) and to adequately consider the cumulative air quality impacts of the those developments under the requirements of the National Environmental Policy Act (NEPA) and the Federal Land Policy and Management Act (FLPMA), is a very broad topic. It encompasses changes in the substantive requirements of the CAA as applied to energy projects on the public lands, as well as the case law developments arising from litigation challenges to energy development projects which may include objections to projected air quality impacts associated with those projects. This paper focuses on the substantive requirements of the Clean Air Act and recent developments in those substantive requirements as applied to energy development projects. Among the topics covered are recent revisions to the National Ambient Air Quality Standards, and expected revisions, including the further lowering of the ozone NAAQS; the issuance of recent guidance to assist in the evaluation of air quality impacts associated with various projects, including energy development projects; recent challenges to CAA permitting of energy facilities on the public lands as minor sources, as opposed to the aggregation of those sources as much larger “major sources” of air pollutants; and the proposed expansion of the mandatory reporting rule for greenhouse gases (GHG) to include oil and natural gas systems including onshore oil and gas production.

I. NAAQS DEVELOPMENTS

A. Ozone NAAQS

EPA lowered the 8-hour ozone NAAQS to 0.075 ppm in March 2008. The prior standard of 0.08 ppm had caused a number of air quality control regions with significant oil and gas emissions to impose ozone controls on such sources to maintain or make reasonable progress toward attainment of the former standard. Even as states and air quality control regions prepare to identify and select emission control strategies to meet or make progress toward attainment of the lowered 0.075 ppm standard, a process which will not begin in earnest until 2011, EPA has proposed to reconsider the ozone NAAQS and to further lower the standard to between 0.060 and 0.070 ppm. The proposed further lowering of the ozone NAAQS would affect two types of standards, a primary standard to protect public health including sensitive subpopulations, and a secondary standard to protect public welfare and the environment including sensitive vegetation and ecosystems. The proposal to strengthen the primary standard places more weight on certain scientific and technical information in the administrative record than was previously placed on it in EPA’s prior lowering of the standard in March 2008. EPA is expected to issue final standards by August 31, 2010, the end of this month.

In addition to proposing to revise the standards downward, EPA is also proposing an accelerated schedule for designating areas for the primary ozone standard as attainment or non-attainment. An accelerated schedule would call for states to make

recommendations for areas to be designated as attainment, non-attainment or unclassifiable by January 2011. Such designations made by EPA after state recommendations would become effective in August 2011, twelve months from now, under the accelerated schedule. State Implementation Plans (SIP) specifying how states would reduce the emission of ozone precursors to meet the new lowered standards would be due to EPA in December 2013. EPA is also proposing to modify the network for monitoring ozone air quality. The July 2009 proposal regarding monitoring would involve additional monitoring in urban areas with populations between 50,000 and 300,000 people, for example. States would also be required to operate at least three ozone monitors in non-urban areas.

It is perhaps instructive to examine the recent notice of proposed partial approval of the state of Colorado's ozone action plan adopted in late-2008 as part of its proposed SIP revisions to demonstrate attainment of the prior 0.08 ppm ozone NAAQS in the Denver metropolitan area, designated in late-2007 as an ozone non-attainment area for the one-hour ground level ozone NAAQS. EPA published its proposed partial approval of those revisions just last month, in July 2010, but has raised a number of technical, clerical, and other concerns with the various provisions of changes to Colorado Air Quality Regulation Nos. 3 and 7 involving many VOC emission controls imposed upon oil and gas facilities. While those controls and prior controls emphasized reductions and VOC emissions to control the formation of ozone in the urbanized Denver metropolitan area, future controls are likely to emphasize reductions in the emissions of nitrogen oxides (NO_x), which modeling has indicated plays a greater role than VOC emissions in the formation of ozone within the Denver metropolitan area. The Denver metropolitan area is also perhaps somewhat unique given the significant emissions from both oil and gas sources as well as from the transportation sector. Other areas of the intermountain west where energy development projects may come to be located or proposed to be located on public lands likely would lack significant emissions from mobile on-road sources, thereby potentially reducing the role of anthropogenic NO_x emissions in the formation of ground-level ozone.

B. One-Hour NO₂ NAAQS

On January 22, 2010, EPA strengthened the health-based standard for nitrogen dioxide (NO₂). The new one-hour standard is set at the level of 100 parts per billion (ppb). This defines the maximum allowable concentration anywhere in an area to protect against adverse health effects associated with short-term exposure to NO₂. EPA retained the current annual average NO₂ standard of 53 ppb. The existing and new standards are intended to limit peoples' exposures to short-term peak concentrations of NO₂, which primarily occur near major roads. In order to better assess attainment and progress toward attainment of the new standard, EPA has established new ambient air monitoring and reporting requirements for NO₂. The secondary NO₂ standard, set to protect public welfare, is not affected by these recent regulatory changes. EPA is reevaluating the secondary standard in a separate process.

Emissions that lead to the formation of NO₂ generally also lead to the formation of other oxides of nitrogen (NO_x). Control measures that reduce NO₂ can generally be expected

to reduce exposure to gaseous NO_x. Additionally, fine particulate matter may also be reduced, since NO_x reacts with ammonia, moisture, and other compounds to form small particles. Additionally, NO_x also reacts with volatile organic compounds (VOCs) to form ozone.

EPA expects to identify or designate areas as attaining or not attaining a new standard by January 2012. Long before that, however, the new standard must be taken into account when permitting new or modified major sources of NO_x emissions, such as fossil-fuel-fired powered plants, boilers, and a variety of other sources. For energy development projects on the public lands, this means consideration of whether the project will contribute to nonattainment in the course of an environmental assessment or environmental impact statement. Since the new standard became effective on April 12, 2010, the review of energy development projects has been complicated by this requirement to consider whether the project will attain or contribute to nonattainment of the new standard. Many EAs and EISs that were close to finalization have been substantially delayed while involved parties and agencies evaluate the effect of the proposed project on attainment of the new one-hour NO₂ standard of 100 ppb.

EPA became aware that a number of sources, both existing and proposed, were modeling potential violations of the one-hour NO₂ standard. A number of the affected units were emergency generators and pump stations, where short stacks and limited property rights (close fence lines) exist, such that modeling of emissions demonstrated an exceedance of the one-hour standard at the fence line. These problems also involved larger sources such as coal-fired and natural-gas-fired power plants, refineries, and other sources. To assist project proponents and involved agencies in the review of such impacts relative to the new one-hour NO₂ NAAQS, EPA issued two guidance documents in late June of this year. The first guidance is a memorandum entitled “General Guidance for Implementing the One-Hour NO₂ National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim One-Hour NO₂ Significant Impact Level” (June 28, 2010). The second guidance document is a memorandum entitled “Applicability of Appendix W Modeling Guidance for the One-Hour NO₂ National Ambient Air Quality Standard” (June 28, 2010). These guidance documents do not bind state and local governments but are believed helpful to state and local air agencies and project proponents who are having difficulty evaluating the compliance and cumulative impacts of existing and proposed facilities relative to the new one-hour NO₂ NAAQS.

C. One-Hour SO₂ NAAQS

Even more recently than the adoption of a revised one-hour NO₂ NAAQS, EPA adopted on June 2, 2010, a strengthened primary NAAQS for sulfur dioxide (SO₂), also to improve public health protection. EPA replaced the existing annual and 24-hour primary SO₂ standards with a new one-hour SO₂ standard set at 75 parts per billion (ppb). EPA’s new standard does not cover the secondary SO₂ standard, which EPA is also reviewing separately for possible revision in 2012.

In connection with the revised standard, states must make necessary adjustments to their ambient air monitoring networks to meet new requirements by January 1 of 2013. EPA

has also developed a hybrid approach for implementing the new one-hour SO₂ standard which involves air dispersion modeling of SO₂ sources in combination with ambient monitoring data to determine compliance with the new standard. SO₂ is generally emitted with other oxides of sulfur which react with other compounds in the atmosphere to also form fine particles (PM_{2.5}). Existing rules and programs have resulted in substantial reductions in SO₂ in ambient air in the United States over the past 30 years. The national average ambient concentration of SO₂ in the air has decreased 71% in the period 1980 to 2008.

The new standard is based on controlled human exposure studies of exercising asthmatics which indicated that five- to ten-minute exposures are associated with adverse respiratory responses. This new standard of 75 ppb is below levels measured in many U.S. locations where epidemiologic studies have associated exposure to SO₂ with increased emergency department visits and/or hospitalizations. The new standard was set to provide substantial protection from high, five- to ten-minute concentrations of concern. EPA plans to develop additional modeling and implementation guidance for states that will assist them in the evaluation of modeling results for the new NO₂ standard, and the evaluation of the smaller NO₂ sources that may potentially cause or contribute to a violation of the new NO₂ standard. EPA has proposed that states submit their designation recommendations for nonattainment areas relative to the new standard by June of 2011. State implementation plans for the new standard would be required by June of 2013.

D. Fine Particulate Matter (PM_{2.5}) NAAQS

In July of 1997 EPA revised the NAAQS for particulate matter to add new annual and 24-hour standards for fine particles using PM_{2.5} as the indicator. In October of that year, EPA established a policy known as the PM₁₀ surrogate policy intended to deal with some technical difficulties with respect to PM_{2.5} monitoring, emissions estimation, and modeling. The policy allowed permit applicants to use compliance with the then-applicable PM₁₀ requirements as a surrogate approach for meeting PM_{2.5} new source review requirements until the technical difficulties were resolved. This situation continued for over ten years until May of 2008, when EPA promulgated final rules governing the implementation of the NSR program for PM_{2.5}. These rules included a grandfathering provision allowing certain applicants for federal PSD permits to continue relying on the PM₁₀ surrogate policy. That grandfathering provision was the subject of a three-month administrative stay based on a petition challenging the continued use of the policy. Then, in September 2009, the three-month stay was extended to June of 2010, to allow additional time for EPA to propose formal repeal of the grandfathering provision. Most recently, on February 11, 2010, EPA published its proposal to repeal the grandfathering provision. 75 Fed. Reg. 6827. Under PSD programs for PM_{2.5} currently in effect for SIP-approved states, states will be allowed to continue using the PM₁₀ surrogate policy until May 2011, or until EPA approves the revised SIP for PM_{2.5}, whichever occurs first. Thus, an applicant seeking a PSD permit under a SIP-approved PSD program may still rely on the PM₁₀ surrogate policy as long as the appropriateness of the PM₁₀-based assessment has been adequately demonstrated for the project and the applicant can show that a PM_{2.5} analysis is not technically feasible.

Most recently, EPA in March of this year issued a memorandum entitled “Modeling Procedures for Demonstrating Compliance With PM_{2.5} NAAQS.” This memorandum addresses the need for recommendations regarding appropriate dispersion modeling procedures which can be used to demonstrate compliance with the PM_{2.5} NAAQS. The recommendation in the memo are necessitated by the recent regulatory actions and proposals that increase the likelihood that applicants for permits under the new source review and prevention of significant deterioration programs may be required to demonstrate compliance with PM_{2.5} NAAQS rather than relying on the PM₁₀ surrogate policy that was established in 1997. The recommendations are intended to facilitate the use of Appendix W guidance (guideline on air quality models) even as that guidance is limited in detailed technical issues associated with PM_{2.5} dispersion modeling, which is complicated by the secondary formation of fine particles, among other technical factors. EPA is also currently reviewing the PM_{2.5} NAAQS for further revision. This proposal is expected in November of 2010, with a final rule in July of 2011.

E. Possible New Oil and Gas-Specific NSPS and MACT Standards

In January of 2009, EPA was sued by environmental groups to require it to review the adequacy of new source performance standards and hazardous air pollutant standards specific to the oil and gas industry under the Clean Air Act. The parties entered a consent decree in February of 2009, which the court approved in February of this year. The consent decree requires that EPA consider additional proposed standards by January 31, 2011. In connection with that consideration, EPA has held public meetings recently in Denver and Arlington, Texas. Based on information from those meetings, if EPA proposes additional standards in January, final rules could be expected to become effective later in the year 2011. In 1999, the final amendments to the regional haze rule required the development of state implementation plans (SIPs) for addressing visibility impairment in 156 Class One areas, primarily federally protected parks and wilderness areas. These areas are concentrated in the western United States where energy development on the public lands frequently occurs. The regional haze rule requires states to set goals for improving visibility and to develop regional haze implementation plans with enforceable measures and strategies. The plans were to become due in December of 2007, but the majority of states failed to fully comply with this requirement.

In January of 2009 EPA published a finding of failure regarding Colorado’s regional haze SIP, determining that Colorado had failed to submit a plan containing reasonable progress goals and long-term strategies to meet the goals, as required, among other things. Thirty-five other states are in the same posture regarding the regional haze SIPs, as of January 2009. If Colorado did nothing, an EPA-authored federal implementation plan would be required to implement reasonable progress goals through 2018 and establish long-term strategies to meet those goals. Earlier this year, the Colorado General Assembly passed House Bill 1365, which was signed by Governor Ritter. This bill, known as the Clean Air Clean Jobs Act, is intended to address a majority of the deficiencies identified in EPA’s January 2009 finding of failure. Under the bill, the emission reduction plans required of all rate-regulated entities for public utilities commission review will also be subject to Colorado Department of Public Health and Environment review and comment, and then may be incorporated into Colorado’s

regional haze SIP to satisfy the reasonable progress goals and long-term strategy requirements which were the subject of EPA's finding of failure. Late last week, Public Service Company released its much-anticipated report regarding how it will reduce emissions from many of its older coal-fired power plants in order to make reasonable progress toward improved conditions of visibility in federal Class One areas, and natural conditions of visibility by 2064, as required by the Clean Air Act.

II. SOURCE AGGREGATION DEVELOPMENTS UNDER THE CLEAN AIR ACT

The ability of state permitting authorities and the Federal EPA to aggregate multiple sources into a single major source permit is founded upon the definition of "stationary source" within the Clean Air Act ("CAA" or "the Act") and the regulations developed under the Act to implement the NSR/PSD program and the Title V Operating Permit Program. EPA and the courts developed a three-factor analysis for determining what constitutes a major stationary source for purposes of NSR and Title V permitting. That analysis begins with three questions:

1. Are the sources located on one or more "contiguous or adjacent" properties?
2. Are the sources under common control of the same person (or persons under common control)?
3. Do the sources belong to a single major industrial grouping?

If these questions are all answered yes, then the CAA state permitting authority may consider aggregating them into a single NSR/PSD or Title V permit, provided several other considerations are properly made, as noted below.

In addition to the three factors, EPA and the courts have required federal, state and tribal permitting authorities to honor the plain meaning of the component terms in the definition of "major stationary source," and to avoid aggregating sources which do not collectively comport with the "common sense notion of a plant." Accordingly, multiple sources that do not fit into the ordinary meaning of "building," "structure," "facility" or "installation," do not lend themselves to proper aggregation by permitting authorities under the CAA.

EPA has recently addressed the issue of CAA source determinations in the oil and gas industries in guidance from the EPA Office of Air and Radiation. *See* "Withdrawal of Source Determinations for Oil and Gas Industries," memorandum from Gina McCarthy to Regional Administrators (September 22, 2009) (the "McCarthy Memo"). The McCarthy Memo withdrew earlier guidance from EPA that directed permitting authorities to focus on the surface site of oil and gas activities as the starting point for their conduct of the required three-factor analysis. Although the McCarthy Memo rejected the former approach of focusing initially on the surface site of oil and gas facilities, it reconfirmed that oil and gas source determinations must involve a case-by-case review of sources according to the required three-factor analysis, as well as the

limitations inherent in the plain meaning of the four component terms of stationary source (building, structure, facility, or installation) and the “common sense notion of a plant.”

The Role of Functional Interdependence in Source Determinations

Beginning in the 1990s, long after EPA promulgated its 1980 PSD regulations, the Agency began to emphasize the role of “functional interdependence” between and among multiple sources being considered for aggregation in a number of informal regulatory interpretation letters involving source determinations under the CAA. Some of these letters posed a number of questions to be asked about sources being evaluated for possible aggregation such as whether the sources were connected by pipelines, conveyors, roads, and other means by which materials and products or intermediate products are transferred between them. In some cases, the answers to these questions led the Agency to recommend the aggregation of sources connected by such structures on the basis that they acted as a single source even though separated by significant distances. The oil and gas industry has long maintained that this reliance in certain letters by EPA on physical connections between non-contiguous and non-adjacent sources as a basis for aggregating them into a single CAA major source permit is improper and not supported by the statute, applicable case law and EPA’s own regulations. While there is some basis for considering primary and support facility relationships in the application of the “major industrial grouping” factor of the required three-factor analysis, such considerations may not trump or override the requirement that sources be “contiguous or adjacent,” before they may be further considered for aggregated permitting.

The Proximity of Oil and Gas Facilities

Oil and gas facilities are physically located primarily based upon considerations regarding the ability to efficiently and economically extract the mineral resource. Oil and gas conservation laws and regulations also dictate proximity through spacing, pooling and unitization orders intended to prevent waste and promote the efficient production of the natural resource. The vast majority of onshore oil and gas facilities are not and will not be “contiguous or adjacent” within the plain meaning of those terms, and are and will be located on separate leases separated by significant distances, consistent with the engineering, operational and spacing requirements applicable to such facilities, among other factors. Even though such facilities are connected by pipelines, most, if not all, operate independent of one another by design, to enhance production and reliability. Any suggestion that their connection to one another by pipelines across significant distances should somehow render them “contiguous or adjacent” is a serious misapplication of the required three-factor analysis, and will lead to great uncertainty in CAA permitting of oil and gas facilities, as well as for other sectors’ facilities. The unique operational requirements of oil and gas exploration and production facilities and to avoid aggregating sources, even if connected by pipelines, that are not adjacent and do not operate collectively as a single “plant.”

One additional factor that courts have also found appropriate in the review of source determinations under the Clean Air Act includes whether a particular source

determination potentially involving aggregation would reasonably advance the purposes of the NSR program. This question, posed by the D.C. Circuit Court of Appeals in the seminal *Alabama Power* decision in 1979, really goes to the question of what air quality benefits will accrue from the decision to aggregate multiple sources into a major source permit? Given the many federal and state requirements already applicable to oil and gas production equipment (and expected in the near future), the incremental air quality benefits of source aggregation in the oil and gas sector in most cases would be very likely be outweighed by the administrative burdens of such an approach, and the uncertainty and delay that it would undoubtedly cause.

Source Aggregation vs. Cumulative Impacts

One important distinction between (1) NEPA analyses of cumulative impacts that are reasonably foreseeable from the implementation of an energy project and (2) whether to aggregate sources for CAA permitting is the legal basis for aggregation in the permitting of major sources. A number of proponents of aggregation of oil and gas sources have argued that it is required by the CAA to protect against the cumulative impacts of such sources being operated, but there is no legal requirement of this type under the CAA. Minor sources are less tightly regulated under the CAA, and their cumulative impacts are only considered when NEPA evaluation and assessment is triggered, or in certain air quality planning requirements of the CAA such as the development of a State Implementation Plan or SIP with various control strategies for the criteria pollutant of concern.

III. EXPANSION OF THE MANDATORY REPORTING RULE (MRR) FOR GREENHOUSE GASES TO INCLUDE ONSHORE OIL AND GAS PRODUCTION

On January 1, 2010, the U.S. Environmental Protection Agency's Mandatory Reporting of Greenhouse Gases Rule (MRR), 40 CFR Part 98, went into effect requiring roughly 10,000 facilities to annually report their greenhouse gas (GHG) emissions. However, the final MRR, published in the October 30, 2009 Federal Register, did not provide reporting requirements for a number of industries that were initially listed in the proposed rule, including the upstream oil and natural gas industry. EPA decided to delay finalizing the reporting requirements for the upstream oil and natural gas industry to further review public comments and perform additional analysis.

On March 22, 2010, the EPA proposed new rules that will, among other things, amend the MRR to require the reporting of GHG emissions from the upstream oil and natural gas sector. These proposed rules would be implemented through Subpart W of the MRR – Petroleum and Natural Gas Systems – 40 CFR §98.230 *et seq.*

EPA's re-proposed Subpart W will require petroleum and natural gas facilities that emit 25,000 metric tons or more of CO₂ equivalent (CO₂e) per year to annually report their GHG emissions to the agency. Facilities will need to begin gathering data on January 1, 2011, and the first reports will be due to EPA by March 31, 2012. Facilities covered by Subpart W include:

- Onshore petroleum and natural gas production;
- Offshore petroleum and natural gas production;
- Onshore natural gas processing plants;
- Onshore natural gas transmission compression;
- Underground natural gas storage;
- Liquefied natural gas storage;
- Liquefied natural gas import and export equipment; and
- Natural gas distribution.

Of particular note is that EPA is proposing a different definition of “facility” for onshore petroleum and natural gas production and offshore petroleum and natural gas production than is used throughout the rest of the MRR. For onshore petroleum and natural gas production, EPA is proposing the following definition:

Onshore petroleum and natural gas production facility means all petroleum or natural gas equipment associated with all petroleum or natural gas production wells under common ownership or common control by an onshore petroleum and natural gas production owner or operator located in a single hydrocarbon basin which is assigned a three digit Geologic Province Code as defined by the American Association of Petroleum Geologists. Where an operating entity holds more than one permit in a basin, then all onshore petroleum and natural gas production equipment relating to all permits in their name in the basin is one onshore petroleum and natural gas production facility.

With this definition, EPA is proposing a basin-wide level of reporting for the onshore petroleum and natural gas production sector. A “facility” would then be all of the oil and/or natural gas production wells, along with associated equipment such as compressors, generators, piping, and storage tanks, owned and/or operated by one entity within a single hydrocarbon basin. Portable equipment that is not self-propelled, such as drill rigs, skid-mounted dehydrators and compressors, are also included within this definition.

A major concern with this proposed definition is its potential impact upon other regulatory programs under the Clean Air Act, especially in light of EPA’s September 22, 2009 withdrawal of the *Wehrum Memo* regarding source determinations for the oil and natural gas industries.¹ However, EPA states in a FAQ issued in conjunction with the re-proposed Subpart W that this definition will not impact requirements under other EPA regulations, specifically citing New Source Review under the Clean Air Act.

¹ “Withdrawal of Source Determinations for Oil and Gas Industries,” memorandum from Gina McCarthy to Regional Administrators (September 22, 2009).

To determine if a facility exceeds the reporting threshold of 25,000 metric tons or more of CO₂e, an owner/operator must calculate the annual CO₂-equivalent emissions from various sources, which will vary depending upon industry segment, but generally include the following:

- Fugitive and vented CO₂ and methane (CH₄) emissions from a list of sources that include such things as pneumatic devices, dehydrators, production and storage tanks and well venting during well completion;
- CO₂, CH₄, and nitrous oxide (N₂O) emissions from each flare; and
- CO₂, CH₄, and N₂O emissions for non-flare stationary combustion sources, such as engines, turbines, and other burners on heated separators, dehydrator reboilers, etc.

If after making the above calculations, a facility does exceed the reporting threshold, EPA's re-proposed Subpart W will require the facility to submit an annual report that includes an extensive compilation of data, including:

- Facility annual CO₂, CH₄, and N₂O emissions estimate;
- Within each industry segment (*e.g.*, onshore petroleum and natural gas production), CO₂, CH₄, and N₂O emissions aggregated for each source type. For example, an onshore oil and natural gas production facility operator would report combined emissions from all pneumatic high bleed devices, all pneumatic low bleed devices, etc., for all facilities basin-wide;
- CO₂, CH₄, and N₂O emissions reported separately for any equipment that is in standby mode;
- Activity data aggregated for each source type, such as the number of high-bleed pneumatic devices, number of low-bleed pneumatic devices, glycol dehydrators' absorbent circulation rates, number of wells completed with hydraulic fracturing, etc.;
- Minimum, maximum and average throughput for each facility;
- CO₂, CH₄, and N₂O emissions reported separately for portable equipment; and
- For offshore petroleum and natural gas production facilities, the number of wells connected to each platform, and whether each is producing oil, natural gas, or both.

EPA is accepted public comment on re-proposed Subpart W and specifically asked for comment on a number of subjects such as the appropriate threshold level for triggering the GHG reporting requirements (25,000 v. 10,000 mt CO₂e) and whether field-level reporting is more appropriate than basin-wide reporting for onshore petroleum and

natural gas production. EPA held a public hearing on Subpart W April 19, 2010. The final Subpart W rules are expected very soon.

IV. CONCLUSION

Existing and newly-proposed air quality regulations and standards are increasing the complexity and difficulty of engaging in the evaluation of direct, indirect and cumulative impacts of energy development projects on the public lands. While these analyses are not the same as those required for permitting of individual sources, the increasingly technical nature of these evaluations involving use of screening methods and highly technical modeling techniques are one of the more recent battlegrounds for challenging and defending the proper evaluation of such projects under NEPA and FLPMA. With the pressure to develop more domestic energy resources for energy security, and to provide natural gas to back up solar and wind generation and meet increased renewable portfolio standards adopted by the individual states, these highly contested and technical challenges do not appear as though they will abate any time soon. Energy project developers and opponents as well as federal land management agencies would do well to continue to hire and retain qualified air quality professionals and attorneys familiar with the requirements of the Clean Air Act, NEPA, FLPMA, and the increasing body of court opinions being issued concerning the intersection of these laws with science and policy related to the quality of our air resources.

Particulate Matter 2.5

EPA Memorandum, Modeling Procedures for Demonstrating Compliance with PM_{2.5} NAAQS
<http://www.epa.gov/scram001/Official%20Signed%20Modeling%20Proc%20for%20Demo%20Compli%20w%20PM2.5.pdf>

Federal Registry, Proposal to Repeal Grandfathering Provision for PM_{2.5}, 75 FR 6827 (Feb. 11, 2010) <http://edocket.access.gpo.gov/2010/pdf/2010-2983.pdf>

EPA, Regional, State, Local Modelers Workshop (May 10, 2010)
http://www.cleanairinfo.com/regionalstatelocalmodelingworkshop/archive/2010/Documents/Presentations/2010RSL_InformationSession.pdf

EPA, Fact Sheet Finding of Failure to Submit SIPs for 2006 NAAQS for Fine PM
<http://www.epa.gov/pm/pdfs/20100528fs.pdf>

Florida Department of Environmental Protection, Final Determination (see Comment 2)
<http://www.dep.state.fl.us/Air/emission/construction/okeechobee/FDETER382.pdf>

Sulfur Dioxide

EPA, Sulfur Dioxide Fact Sheet, www.epa.gov/air/sulfurdioxide/pdfs/20100602fs.pdf

SO₂ Final Rule published in Federal Register June 22, 2010,
<http://www.epa.gov/ttn/naaqs/standards/so2/fr/20100622.pdf>

EPA, Revisions to the Primary NAAQS Monitoring Network and Data Reporting Requirements for Sulfur Dioxide (Power Point)
<http://www.epa.gov/air/sulfurdioxide/pdfs/20100603presentation.pdf>

EPA, Map of Counties with Monitors Currently Violating the Revised Primary 1-hour Sulfur Dioxide Standard or 75 ppb, <http://www.epa.gov/air/sulfurdioxide/pdfs/20100602map0709.pdf>

EPA, Map of Counties with Monitors Projected to Violate the Revised Primary 1-Hour Sulfur Dioxide Standard in 2020, <http://www.epa.gov/air/sulfurdioxide/pdfs/20100602map2020.pdf>

EPA, Map of Monitoring Requirements for the Revised Primary 1-Hour Sulfur Dioxide Standard, <http://www.epa.gov/air/sulfurdioxide/pdfs/20100602mapmonitor.pdf>

Nitrogen Dioxide

EPA Memorandum, Guidance Concerning the Implementation of the 1-Hour NO₂ NAAQS for PSD (June 29, 2010) <http://www.epa.gov/nsr/documents/20100629no2guidance.pdf>

EPA Memorandum, 1-Hour Nitrogen Dioxide Modeling Guidance (June 28, 2010)
http://www.epa.gov/ttn/scram/ClarificationMemo_AppendixW_Hourly-NO2-NAAQS_FINAL_06-28-2010.pdf

EPA Memorandum, Applicability of PSD Permit Requirements to New and Revised NAAQS (Apr. 1, 2010)
<http://www.epa.gov/region07/air/nsr/nsrmemos/psdnaaqs.pdf>

EPA, Nitrogen Dioxide Fact Sheet, <http://www.epa.gov/ttn/naaqs/standards/nox/fr/20100209.pdf>

Nitrogen Dioxide Final Rule published in Federal Register Feb. 9, 2010,
<http://www.epa.gov/ttn/naaqs/standards/nox/fr/20100209.pdf>

EPA, Revisions to the Primary NAAQS Monitoring Network and Data Reporting Requirements for Nitrogen Dioxide (Power Point),
<http://www.epa.gov/air/nitrogenoxides/pdfs/20100124presentation.pdf>

EPA, Map of Proposed Monitoring Requirements for Nitrogen Dioxide,
<http://www.epa.gov/air/nitrogenoxides/pdfs/NO2MonitoringSiteMaps.pdf>

EPA, Table of Counties Violating 1-Hour Nitrogen Dioxide Standard,
http://www.epa.gov/air/nitrogenoxides/pdfs/NO2_final_designvalues_0608_Jan22.pdf

Ozone

EPA, Fact Sheet; Revision to Ozone Standards
<http://www.epa.gov/air/ozonepollution/pdfs/fs20100106std.pdf>

EPA, Jan. 2010 Proposal to Revise NAAQS for Ozone (Power Point)
<http://www.epa.gov/air/ozonepollution/pdfs/20100106present.pdf>

EPA, Table of Counties Projected to Violate Secondary Seasonal Ozone,
<http://www.epa.gov/air/ozonepollution/pdfs/CountyOzoneLevels2020secondary.pdf>

EPA, Table of Counties Projected to Violate Primary 8-hour Ground-Level Ozone Standard,
<http://www.epa.gov/air/ozonepollution/pdfs/CountyOzoneLevels2020primary.pdf>

EPA, Maps of Counties Violating and Projected to Violate Ozone Standards,
<http://www.epa.gov/air/ozonepollution/pdfs/20100104maps.pdf>

Federal Registry, Proposed Rule to Revise NAAQS for Ozone, 75 FR 2938
<http://www.epa.gov/air/ozonepollution/fr/20100119.pdf>