

**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.**

IN THE MATTER OF:	)	Appeal No. PSD 10-___
VULCAN CONSTRUCTION	)	
MATERIALS, LP	)	Illinois PSD Permit No. 91806AAB
	)	

PETITION FOR REVIEW AND REQUEST FOR ORAL ARGUMENT

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## INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), the Sierra Club (“Petitioner”), petitions for review of the conditions of the Prevention of Significant Deterioration (PSD) Permit Number 91806AAB, which the Illinois Environmental Protection Agency (“IEPA”) proposed for a 600 ton per day rotary lime kiln with preheater tower, limestone storage and handling, coal and petroleum coke storage and handling, and product (lime) storage, handling, and loadout facilities at the Vulcan Construction Materials, LP (“VCM” or “Vulcan”) facility in Manteno, Illinois, on April 9, 2010. A copy of the PSD permit is attached as Sierra Club **Exhibit 1**.

The State of Illinois is authorized to administer the PSD permit program pursuant to a delegation of authority by the United States Environmental Protection Agency (“EPA”). The Permit authorizes VCM to operate a previously-built kiln fired by coal and petroleum coke. Because the permit fails to include necessary permit conditions, make certain necessary findings, is based on various erroneous legal interpretations and faulty conclusions, lacks a sufficient basis in the record, and raises important policy considerations that the Board should address, review is appropriate pursuant to 40 C.F.R. pt. 124.

## THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner Sierra Club satisfies the threshold requirements for filing a petition for review under Part 124. Sierra Club has standing to petition for review of the permit decision because Sierra Club and its members participated in the public comment period on the draft permit. 40 CFR § 124.19(a). *See* Comments on behalf of the Sierra Club,

attached as Sierra Club **Exhibit 2**; Transcript of Public Hearing, attached as Sierra Club **Exhibit 3**. The issues raised by Petitioner below were raised with IEPA during the public comment period, are directly related to the IEPA's response to public comments, or were not reasonable ascertainable during the comment period. Consequently, the Board has jurisdiction to hear Petitioner's timely request for review.

### **ISSUES PRESENTED FOR REVIEW**

Petitioner respectfully requests Board review of the following issues:

- (1) Illinois EPA failed to satisfy PSD requirements for PM<sub>2.5</sub>, including appropriate PM<sub>2.5</sub>-specific BACT limits and demonstration of compliance with National Ambient Air Quality Standard ("NAAQS").
- (2) Illinois EPA failed to comply with requirements for preconstruction monitoring of ambient air quality, including its failure to establish a record to justify use of non-site-specific regional monitoring data.
- (3) Illinois EPA failed to establish BACT limits for Nitrogen Oxides (NO<sub>x</sub>) and Carbon Monoxide (CO) based on the maximum degree of reduction achievable and, to the extent a "compliance margin" is allowed in BACT limits, failed to justify the huge margins included in the limits.
- (4) Illinois EPA failed to ensure that the facility's emissions do not cause or contribute to a violation of the 1-hour NO<sub>x</sub> NAAQS.

Additionally, Sierra Club requests that if the VCM permit is not final prior to January 2, 2011, IEPA be required to include BACT limits for CO<sub>2</sub> emissions.

### **STATEMENT OF FACTS**

Vulcan's Manteno lime plant has been plagued with problems. The rotary kiln began operation in 1998, but has been idle since 2003. Response to Comments at 2, attached as **Exhibit 6**. This is because the plant could not comply with its permit limits, issued in 1996, and was sued by the State of Illinois. Statement of Basis at 3 and n.1,

attached as **Exhibit 5**; Consent Order, *People v. Vulcan Construction Materials*, 21<sup>st</sup> Cir. Ct. Case No. 06-L169 (Dec. 27, 2006), attached as **Exhibit 4**; *see also* Memo from Don Sutton, IEPA, to Bharat Mathur Re Vulcan Materials Company, Manteno – PSD violation issue (Aug. 21, 1998). Due to its inability to comply with its permit limits, the plant ceased operation on May 23, 2003 and has not operated since. *See* Letter from William J. Harte to Michael C. Partee, Ill. Atty Gen. Office (May 16, 2003); Response to Comments, Ex. 6, at 2.

VCM applied for a permit to allow it to restart the lime plant. Ex. 6 at 2. IEPA released a draft permit and Statement of Basis (Project Summary) for the Vulcan Construction Materials Manteno Lime Plant in April, 2009. *See* Ex. 5. A public hearing was held in June, 2009, and the extended comment period closed July 22, 2009. Response to Comments, Ex. 6, at 2-3. After considering the VCM application for years, IEPA proposed to issue the PSD permit for VCM on April 9, 2010: the last business day before the new, more stringent, 1-hour Nitrogen Oxide NAAQS was effective. *Id.*; *see also* Final Permit, Ex. 1; 75 Fed. Reg. 6474, (Feb. 9, 2010) (final rule effective on April 12, 2010); Memorandum from Stephen D. Page, Director OAQPS, to Air Division Directors and Deputies Regions I-X, Re: Applicability of the Federal Prevention of Significant Deterioration Permit Requirements to New and Revised National Ambient Air Quality Standards at 3 (April 1, 2010) (stating that 1-hour NO<sub>x</sub> standard is applicable immediately on the effective date and applicants with pending permits are not grandfathered) (“Page 1-Hour NO<sub>x</sub> Memo”).<sup>1</sup>

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<sup>1</sup> Available at <http://www.epa.gov/region07/air/nsr/nsrmemos/psdnaaqs.pdf>.

## REQUEST FOR ORAL ARGUMENT

Petitioner respectfully requests oral argument in the above-captioned matter. Oral argument would assist the Board in its deliberations on the issues presented by the case because the issues have significant potential importance to permitting agencies. Sierra Club believes that that oral argument could materially assist in the Board's resolution of these issues.

### ARGUMENT

#### **I. ILLINOIS EPA ERRED BY FAILING TO SATISFY REQUIREMENTS FOR PM<sub>2.5</sub> BACT AND NAAQS COMPLIANCE.**

##### **A. Background on Regulation of PM<sub>2.5</sub> Under the PSD Program.**

Fine particulate matter is an extremely harmful pollutant that impacts the lungs and heart, with its heaviest burden falling on vulnerable populations like the elderly and children. The PM<sub>2.5</sub> fraction of particulate matter is distinguishable from the coarse fraction, as the smaller particles pose the largest health risks.<sup>2</sup> PM<sub>2.5</sub> has been linked to premature death, in addition to aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions for asthma, emergency room visits, absences from school or work, and restricted activity days), changes in lung function and increased respiratory symptoms, and more subtle indicators of cardiovascular health. 72 Fed. Reg. 20,586, 20,586-20,587 (Apr. 25, 2007). U.S. EPA also has identified lung cancer deaths,

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<sup>2</sup> US EPA, "PM<sub>2.5</sub> NAAQS Implementation," *available at* [http://www.epa.gov/ttnnaqs/pm/pm25\\_index.html](http://www.epa.gov/ttnnaqs/pm/pm25_index.html).

infant mortality and development problems (such as low birth weight in children) as possibly linked to PM<sub>2.5</sub>. 71 Fed. Reg. 2620, 2627 (Jan 17, 2006).

In a 1996 report on the need to revise the PM ambient air quality standards, EPA staff determined that the epidemiological data more strongly support fine particles as the surrogate for the fraction of PM most clearly associated with health effects at levels below the standards in place at that time.<sup>3</sup> EPA therefore promulgated new NAAQS for fine particulates on July 28, 1997 and used PM<sub>2.5</sub> as the indicator. 62 Fed. Reg. 39,852 (July 28, 1997). U.S. EPA's bases for regulating PM<sub>2.5</sub> separately from PM<sub>10</sub>— which was already regulated by 1997— were the differences in people's exposure, where the particles lodge in the body (PM<sub>2.5</sub> penetrates deeper into the lungs), and the health effects associated with each. 71 Fed. Reg. 61,144 at 61,147 (Oct. 17, 2006). Almost nine years later, on October 17, 2006, EPA revised the NAAQS for both PM<sub>2.5</sub> and PM<sub>10</sub>. 71 Fed. Reg. 61,236 (October 17, 2006). However, despite the danger posed by fine particulate and the serious threats posed by fine particulate, neither the 1997 nor the 2006 standards were immediately implemented by EPA. Rather, on October 23, 1997, EPA issued a memorandum entitled, "Interim Implementation for the New Source Review Requirements for PM<sub>2.5</sub>," which purported to allow pollution sources to rely on PM<sub>10</sub> as a surrogate for meeting PM<sub>2.5</sub> NSR requirements until certain "technical difficulties" were resolved. Memorandum from John S. Seitz, U.S. EPA OAQPS (October 23, 1997) ("Seitz Memorandum")<sup>4</sup>. On April 1,

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<sup>3</sup> U.S. EPA Office of Air Quality Planning and Standards, "Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information." Staff Paper (July 1996) ("PM Staff Paper"), V-58 to V-77 (discussing health studies of fine versus coarse particles).

<sup>4</sup> Available at <http://www.epa.gov/region07/air/nsr/nsrmemos/pm25.pdf>

2005, EPA issued a second guidance memorandum from Stephen D. Page purporting to re-affirm the 1997 Seitz Memorandum. Memorandum from Stephen D. Page, U.S. EPA OAQPS (April 2, 2005)<sup>5</sup>. Based on various interpretations of these memoranda, permittees avoid regulation under the Prevention of Significant Deterioration program for PM<sub>2.5</sub> and were effectively subject only to regulation of PM<sub>10</sub> (as they already had been for years) – undermining public health benefits that could have been achieved by the PM<sub>2.5</sub> standards.

On May 16, 2008, more than ten years after EPA first regulated fine particulate as PM<sub>2.5</sub>, EPA promulgated a rule intended to begin implementing the PSD program for PM<sub>2.5</sub>. 73 Fed. Reg. 28,321 (May 16, 2008). In the 2008 rule and preamble, however, EPA outlined a delayed implementation process that would allow the continued use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> during a transition period. 40 C.F.R. § 52.21(i)(1)(xi); 73 Fed. Reg. at 28,340-28,341. That phase-in, or “grandfathering,” was stayed on April 24, 2009. 74 Fed. Reg. 26,098 (June 1, 2009); Letter from Administrator Jackson to Paul Cort, Earthjustice (April 24, 2009)<sup>6</sup>. That stay was ultimately continued through June 22, 2010. 74 Fed. Reg. 48,153 (Sept. 22, 2009). EPA is simultaneously proposing to withdraw the provision altogether. 75 Fed. Reg. 6827 (Feb. 11, 2010).

The public comment period for the VCM permit at issue here began on April 17, 2009, prior to EPA’s stay of the PM<sub>10</sub> “grandfathering” provision, and continued to July 22, 2009, at which time the stay was in effect. Ex. 6 at 2-3. Therefore, by the time IEPA issued its permit decision, direct regulation of PM<sub>2.5</sub> was required.

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<sup>5</sup> Available at <http://www.epa.gov/region07/air/nsr/nsrmemos/pm25guid.pdf>.

<sup>6</sup> Available at <http://www.epa.gov/NSR/documents/Earthjustice.pdf>

## B. Sierra Club's Comments and IEPA's Response.

In its public comments, Sierra Club noted that:

Before IEPA can issue a permit for the VCM facility, it must ensure that: (1) The plant is subject to BACT for each regulated NSR pollutant, 40 C.F.R. § 52.21(j); and (2) The plant will not cause or contribute to any violation of a national ambient air quality standard (NAAQS) or increment, 40 C.F.R. § 52.21(k). See also 42 U.S.C. § 7475(a)(3), (4).

Comments, Ex. 2, at 30. Sierra Club further explained that PM<sub>2.5</sub> is a regulated NSR pollutant, will be emitted in significant amounts, and that EPA's policy allowing use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> had been stayed. *Id.* at 30-31. Sierra Club also noted in its comments that IEPA had neither established a BACT limit for PM<sub>2.5</sub> nor modeled PM<sub>2.5</sub> emissions from the facility to determine compliance with the PM<sub>2.5</sub> NAAQS. *Id.*

The final permit contains limits for filterable PM and total (filterable and condensable) PM<sub>10</sub> emissions from the lime kiln, Ex. 1 at 12 § 2.1.3-2.b.i.A. and B., and limits for PM and PM<sub>10</sub> for other emission sources at the plant, *id.* at 31-32 § 2.2.6. No PM<sub>2.5</sub> limits are included. In its response to comments, IEPA contends that "[t]here are both factual or technical bases and legal bases for not setting BACT limits in terms of PM<sub>2.5</sub>." Response to Comments, Ex. 6, at 38. IEPA's basis for this statement is unclear and IEPA provides no specific examples. Rather, IEPA's discussion in the Response to Comments document contains conclusory statements that IEPA can continue to use particulate matter, generally, as a surrogate for PM<sub>2.5</sub>, Ex. 6 at 37 ("The permit includes provisions that address BACT for emissions of PM<sub>2.5</sub>, as emissions of particulate matter (PM) serves as a surrogate for PM<sub>2.5</sub>"), that a "direct correlation exists between emissions



of PM<sub>2.5</sub> and PM, *id.*, that there are “still... impediments to setting BACT limits in terms of PM<sub>2.5</sub>...” *id.* at n.92, and the confusing assertion that if “BACT requirements were expressed in terms of PM<sub>2.5</sub>, there are significant issues remaining with respect to PM<sub>2.5</sub> emissions that would result in such requirements being less stringent as well as less effective.” *Id.* Searches for IEPA’s basis, or reasoning, to support these conclusions are fruitless; IEPA cites no “technical reasons” and provides no cites to the record or anything else for its conclusory statements.

As to IEPA’s purported “legal bases for not setting BACT limits in terms of PM<sub>2.5</sub>” IEPA claims that “USEPA has not yet ‘withdrawn’ all guidance suggesting that PM<sub>10</sub> can be used as a surrogate,” that surrogacy applies until USEPA finalizes increments, significant impact levels and significant monitoring concentrations, and that USEPA has not yet repealed the grandfathering provision and, therefore, “a modified form of either the grandfathering the grandfathering provisions or the PM<sub>10</sub> surrogate policy might be adopted on some interim basis.” Response to Comments, Ex. 6, at 38-39.

IEPA did not ignore PM<sub>2.5</sub> altogether, however. IEPA does contend that it conducted an assessment of the proposed plant’s impact on PM<sub>2.5</sub> air quality after the public comment period closed. *Id.* 6 at 39-40, n.102-103. That assessment appears to be set forth entirely in footnote 102 of the Response to Comments (Exhibit 6), which states:

■ Assessment of PM<sub>2.5</sub> Air Quality Impacts (µg/m<sup>3</sup>)<sup>9</sup>

Contribution	Annual Impacts		Daily (24-Hour) Impacts	
	PM <sub>10</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Wells	0.13	0.130	2.10	2.10
Flare Dust Pile	0.01	0.010	0.21	0.21
Pit Operations	2.92	0.584	17.47	3.49
Roadways	1.13	0.222	7.21	1.44
Subtotal	3.48	0.946	21.90	7.24
Background (2006 – 2008, 3 year average)		10.3		25.6
Total		11.25		32.84

<sup>9</sup> Impacts for pit operations and roadways adjusted based on PM<sub>2.5</sub>, making up 20 percent of the PM<sub>10</sub> emissions.

There is no discussion of *how* this analysis was done<sup>7</sup>, *what* emission rates were modeled<sup>8</sup>, *where* and *how* the data was collected for the “Background” concentration, or *why* IEPA adjusted impacts “for pit operating and roadways... based on PM<sub>2.5</sub> making up 20 percent of the PM<sub>10</sub> emissions.” These are important details and are missing from the Response to Comments.

<sup>7</sup> For example, whether IEPA modeled PM<sub>2.5</sub> specifically, or used a model for PM<sub>10</sub> as a surrogate after adjusting emission rates for fugitive sources. *See e.g.*, Memorandum from Stephen D. Page, Director OAQPS, re: Modeling Procedures for Demonstrating Compliance with PM<sub>2.5</sub> NAAQS at 5 (March 23, 2010) (“Due to the potentially significant contribution from secondary formation of PM<sub>2.5</sub>, and the more prominent role of monitored background concentrations of PM<sub>2.5</sub> in the cumulative analysis, certain aspects of standard modeling practices used for PM<sub>10</sub> and other criteria pollutants may not be appropriate for PM<sub>2.5</sub>.”) (“Page PM<sub>2.5</sub> Memo”) (available at <http://www.epa.gov/region07/air/nsr/nsrmemos/pm25memo.pdf>). Additionally, it is not clear if IEPA used the highest modeled concentration, as recommended by EPA, *id.* at 8, or the 8<sup>th</sup> highest modeled concentration.

<sup>8</sup> For example, it is not clear what hourly emission rate was modeled or if IEPA accounted for secondary PM<sub>2.5</sub> formation. *See e.g.*, Page PM<sub>2.5</sub> Memo (“Secondary formation of PM<sub>2.5</sub> from emissions of NO<sub>x</sub>, SO<sub>x</sub> and other compounds from sources across a large domain will often contribute significantly to the total ambient levels of PM<sub>2.5</sub>, and may be the dominant source of ambient PM<sub>2.5</sub> in some cases. In contrast, secondarily formed particles are less likely to be significant portion of PM<sub>10</sub> which may result in significant differences in the spatial and temporal patterns of ambient impacts between PM<sub>2.5</sub> and PM<sub>10</sub>.”), *id.* at 9 (“...if the facility emits significant quantities of PM<sub>2.5</sub> precursors, some assessment of their potential contribution to cumulative impacts as secondary PM<sub>2.5</sub> may be necessary...”).

## C. Review and Remand of IEPA's PM<sub>2.5</sub> Decisions Is Appropriate

### 1. IEPA Should Have Reopened The Permit For Public Comment Before Making Substantive Decisions Regarding PM<sub>2.5</sub> That Were Not Made Prior to the Draft Permit.

IEPA's justifications for not including PM<sub>2.5</sub>-specific BACT limits and IEPA's air quality impact analysis for PM<sub>2.5</sub> were added to the record after the close of public comment. These important parts of the PSD permitting decision were not subject to public comment and contain very little, if any, supporting explanation or basis in the record. This violates the letter and spirit of the Clean Air Act's public participation requirements.

Section 165(a)(2) of the Act, 42 U.S.C. § 7475(a)(2), requires that "a public hearing [be] held with an opportunity for interested persons... to appear and submit written or oral presentations *on the air quality impact...*" Additionally, § 7475(a)(3) requires that the facility demonstrate that it will not cause a violation of NAAQS and § 7475(e)(3)(B) and (C) require the analysis of air quality impacts to be done and the results to "be available *at the time of the public hearing* on the application." These requirements were clearly not fulfilled for PM<sub>2.5</sub> since IEPA's analysis was not done, and therefore the results were not available, until *after* the public comment period. Moreover, the model used for PM<sub>2.5</sub> (which is not clear in the Response to Comments document) was not "specif[ied] with reasonable particularity" pursuant to 42 U.S.C. § 7475(e)(3)(D).

The applicable regulations also provide that where additions to the record are "substantial," the permitting authority must reopen the record in one of three ways: (1) by

preparing a new draft permit subject to the full public comment process; (2) preparing a revised statement of basis and reopening the comment period; or (3) reopening or extending the comment period. 40 C.F.R. § 124.14(b). The PM<sub>2.5</sub> BACT analysis and air quality impact analysis added to the record in this case-- for a pollutant that was not even considered in the Statement of Basis or Draft Permit-- is a "substantial" addition. *See e.g., In re Indeck-Elwood, LLC*, 13 E.A.D. \_\_\_, PSD Appeal No. 03-04, Slip Op. at 30 (EAB Sept. 27, 2006) (remanding a permit decision to IEPA where IEPA added a permit condition allowing a different size boiler as "a significant addition to the permit that, at a minimum, raises substantial new questions about the permit") (citing 40 C.F.R. § 124.14(b)(3)). Yet, IEPA did not reopen the record for comment on these analyses.

IEPA's failure to provide a new public comment opportunity on the new PM<sub>2.5</sub> analysis undermines Congress' purpose in 42 U.S.C. § 7470(5) to assure decisions are only made "after careful evaluation... and after adequate procedural opportunities for informed public participation in the decisionmaking process." The Board should grant review and remand the permit. *See In re Haw. Elec. Light Co., Inc.*, 8 E.A.D. 66, 102 (EAB 1998) (holding that "Congress determined that the air quality analysis required by the regulations 'shall be available at the time of the public hearing on the application for such permit.' CAA § 165(e)(3)(C), 42 U.S.C. § 7475(e)(3)(C)" and remanding where public was not given an opportunity to comment on the air quality analysis data); *Indeck*, *supra*, at n.70 (finding that an analysis of soil and vegetation impacts done by U.S. EPA could not

save IEPA's failure to do such analysis on the record because U.S. EPA's analysis "have not yet been subjected to public scrutiny under the PSD permitting process.").

Federal case law confirms that remand is appropriate. Where an agency fundamentally changes the information or methodology behind its decision, or conducts a new analysis, after the public comment period closes it must reopen the comment period. *See Ober v. EPA*, 84 F.3d 304, 313-14 (9<sup>th</sup> Cir. 1996); *Idaho Farm Bureau Federation v. Babbitt*, 58 F.3d 1392, 1402-03 (9<sup>th</sup> Cir. 1995) (finding a violation of public procedures where Fish and Wildlife Service relied on a new report not previously part of the administrative record). A permitting agency may only supplement data that was unavailable during the notice and comment period where it expands on and confirms information contained in the proposed decision and also addresses alleged deficiencies, provided no prejudice is shown. *Idaho Farm Bureau*, 58 F.3d at 1402 (quoting *Solite Corp. v. EPA*, 952 F.2d 473, 484 (D.C.Cir.1991)). However, where the agency relies on data that is central to its decision and was not available in the record for the proposed decision, a new public opportunity to comment is required. *Id.* at 1403 ("Opportunity for public comment is particularly crucial when the accuracy of important material in the record is in question."); *Ober v. EPA*, 84 F.3d at 314 (finding a new comment period is required on information added to the record after the close of comment where the information "addressed the submitted Implementation Plan's failure to comply with an essential provision of the Clean Air Act" and the "added material related to the Implementation Plan's compliance with a critical statutory provision"). The PM<sub>2.5</sub> analysis added by IEPA here was entirely new – it did

not expand on or supplement information in the Statement of Basis. Indeed, the Statement of Basis did not even address PM<sub>2.5</sub>.

Review and remand are appropriate to ensure adequate public participation rights are afforded.

## **2. IEPA Provides No Technical or Legal Basis For Not Establishing BACT Limits Specific To PM<sub>2.5</sub>.**

Even if PM<sub>10</sub> surrogacy were theoretically possible, it would not be lawful here since there are no technical barriers to establishing a limit directly for PM<sub>2.5</sub>. The EPA Administrator has already recognized that there are no technical reasons for failing to establish PM<sub>2.5</sub>-specific BACT limits. In August, 2009, the EPA Administrator agreed with petitioners in a Title V review pursuant to 42 U.S.C. § 7661d that previous technical difficulties justifying the temporary use of PM<sub>10</sub> as a PM<sub>2.5</sub> surrogate had been resolved. *In re Louisville Gas and Electric Co., Trimble County*, Petition No. IV -2008-3, Order at 44 (August 12, 2009) (“EPA noted in the May 2008 PM<sub>2.5</sub> NSR Implementation Rule that ‘these difficulties have largely been resolved.’ 73 *Fed. Reg.* at 28,340/2-3.”)<sup>9</sup>

Moreover, U.S. EPA explicitly found that direct analysis and regulation of PM<sub>2.5</sub> is not “impractical” – which is a prerequisite to using PM<sub>10</sub> as a surrogate. In its Notice of Proposed Rulemaking reconsidering several aspects of the May 2008 NSR Implementation Rule, U.S. EPA clearly describes that technical barriers do not stand in the way of direct PM<sub>2.5</sub> analysis:

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<sup>9</sup> Available at [http://www.epa.gov/region7/air/title5/petitiondb/petitions/lg\\_e\\_2nddecision2006.pdf](http://www.epa.gov/region7/air/title5/petitiondb/petitions/lg_e_2nddecision2006.pdf).

... the PM<sub>2.5</sub> implementation issues that led to the adoption of the PM<sub>10</sub> Surrogate Policy in 1997 have been largely resolved to a degree sufficient for the owners and operators of sources and permitting authorities to conduct meaningful permit-related PM<sub>2.5</sub> analyses. For example, adequate procedures for the collection of ambient PM<sub>2.5</sub> are now well established throughout the country and provide data useful for the purpose of PSD permitting. Also, air quality modeling of direct PM<sub>2.5</sub> emissions can be accomplished using an EPA-approved model to predict ambient PM<sub>2.5</sub> impacts caused by new and modified sources of PM<sub>2.5</sub> emissions. Emissions factors for calculating PM<sub>2.5</sub> from various source categories and equipment are available, as are national inventories of PM<sub>2.5</sub> emissions.

75 Fed. Reg. 6827, 6833 (Feb. 11, 2010). In fact, that U.S. EPA is requiring direct regulation of PM<sub>2.5</sub> in delegated states under its May 2008 NSR implementation rule demonstrates that technical barriers do not exist. *See* 73 Fed. Reg. 28, 321 (May 16, 2008).

Furthermore, use of PM<sub>10</sub> as a surrogate would require specific findings that IEPA did not make here. The Administrator's decision in *Trimble County* sets forth the necessary findings that a permitting agency must document before turning to surrogacy. *Trimble County*, Order at 44-45. Among these requisite findings are that (1) the relative control efficiency for PM<sub>10</sub> and PM<sub>2.5</sub> of the control at the permittee facility; and (2) that PM is an adequate surrogate in light of the fact that "particles that make up PM<sub>2.5</sub> may be transported over long distances while coarse particles normally travel only short distances. 70 Fed. Reg. 65,984, 65,997-98 (November 1, 2005)." *Id.* Regarding the first finding, the Administrator's decision provides the following guidance regarding the expected analysis from a permitting agency seeking to rely on surrogacy:

First, the source or the permitting authority establishes in the permit record a strong statistical relationship between PM10 and PM2.5 emissions from the proposed unit, both with and without the proposed control technology in operation.

Without a strong correlation, there can be little confidence that the statutory requirements will be met for PM2.5 using the controls selected through a PM10 NSR analysis. A strong statistical relationship could be established in a variety of ways. In the case where the unit in question is a new unit, the applicant could rely on emissions data from similar units at the facility or at other facilities to develop a correlation that demonstrates the relationship between the two species. In the alternative, if actual emissions test data are not available for a similar unit, the applicant may be able to access and analyze the underlying source test data that has been used to develop emission factors for sources of the same type (including the type of control equipment). In developing such correlation, a simple ratio of AP-42 emissions factors or of the results of a single compliance stack test would not appear to be sufficient. Instead, reasonable consideration would be given to whether and how the PM2.5/PM10 ratio may vary with source operating conditions, including variations in the fuel rate and in control equipment condition and operation. This consideration may be based on engineering analysis of the facility including the proposed control technology and/or review of existing or new emissions test data across a range of conditions at existing sources that are similar in design to the proposed unit.

Second, the source or the permitting authority demonstrates that the degree of control of PM2.5 by the control technology selected in the PM10 BACT analysis will be at least as effective as the technology that would have been selected if a BACT analysis specific to PM2.5 emissions had been conducted. We present here two possible paths to accomplish this. The first would be to perform a PM2.5-specific BACT analysis, in which case the requirement is met if the control technology selected through the PM10 BACT analysis is physically the same as what is selected through the PM2.5 BACT analysis, in all respects that may affect control efficiency for PM2.5. The second path would be to



perform a PM<sub>2.5</sub> specific BACT analysis, and show that while the type and/or physical design of the control technology may be different, the efficiency for PM<sub>2.5</sub> control of the technology selected through the PM<sub>10</sub> BACT analysis is equal to or better than the efficiency of the technology selected through the PM<sub>2.5</sub> BACT analysis, across the range of operating conditions that can be anticipated for the source and the control equipment. This demonstration may be based on engineering review and/or old or new emissions test data from units and control equipment similar to the proposed unit with the proposed control equipment.

*Trimble County*, Order at 45-46. Based on the record available to Sierra Club at the time of this petition, IEPA made no record for finding:

- (1) “a strong statistical relationship between PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the proposed unit, both with and without the proposed control technology in operation... [and] whether and how the PM<sub>2.5</sub>/PM<sub>10</sub> ratio may vary with source operating conditions, including variations in the fuel rate and in control equipment condition and operation”; or
- (2) “that the degree of control of PM<sub>2.5</sub> by the control technology selected in the PM<sub>10</sub> BACT analysis will be at least as effective as the technology that would have been selected if a BACT analysis specific to PM<sub>2.5</sub> emissions had been conducted” through “a PM<sub>2.5</sub>-specific BACT analysis” and comparison of the resulting technology or emission limit to the PM<sub>10</sub> technology or limit.

Instead, IEPA’s BACT “analysis” for PM<sub>2.5</sub> appears (based on the record available to the Petitioner at the time of this petition) to consist entirely of IEPA’s conclusory statements in the Response to Comments that “as a general matter, for the kiln and other process units that are controlled with filters, this is because the PM limits require proper operation of the filters, which are the ‘best devices’ for control of fine particulates” and that “[f]or other operations that are controlled with work practices, this is because requirements reflect

'best practices' for emissions of PM, PM<sub>10</sub> and PM<sub>2.5</sub>." Ex 6 at 37. There is no apparent factual basis in the record for these assertions.

IEPA apparently did not do "a PM<sub>2.5</sub>-specific BACT analysis" as the Administrator's *Trimble County* decision suggests, to support IEPA's assumption that filters and "work practices" are the controls that *would* be selected in a top-down PM<sub>2.5</sub>-specific BACT analysis. Moreover, rather than making a record of a facility-specific "strong statistical relationship" between PM<sub>10</sub> and PM<sub>2.5</sub>, *Trimble County*, Order at 45, IEPA simply concludes that there is a "direct correlation." Response to Comments, Ex 6, at 37. In fact, IEPA appears to assume the correlation one step removed: for PM to PM<sub>10</sub> and then from PM<sub>10</sub> to PM<sub>2.5</sub>. *Id.* at 37 n. 93 ("PM is also used as a surrogate for setting BACT requirements for PM<sub>10</sub>. Similar principle apply for use of PM as a surrogate for PM<sub>10</sub> as for PM<sub>2.5</sub>."). Where the Administrator has stated that use of single tests or general emission factors, such as AP-42, are insufficient to make a correlation, *Trimble County*, Order at 45, IEPA's assumed correlation without any record evidence is certainly insufficient. *See also In re Cash Creek Generation LLC*, Petition Nos. IV-2008-1, IV-2008-2, Order at 14 (Adm'r, Dec. 15, 2009) (objecting to a Title V permit where the permitting agency failed to make a record showing that PM<sub>10</sub> is a lawful surrogate for PM<sub>2.5</sub> based on applicable case law).

Moreover, IEPA's legal argument is backwards. IEPA argues, in effect, that it must use a PM surrogate for PM<sub>2.5</sub> until U.S. EPA promulgates SILs and SMCs for PM<sub>2.5</sub> and until U.S. EPA promulgates a rule withdrawing the grandfathering provision. Response

to Comments, Ex 6, at 38-39. There is no legal support for this theory. First, surrogacy is the exception; a permitting agency must justify its use (if at all) through specific legal and factual showings. *National Lime Assoc. v. EPA*, 233 F.3d 625, 637 (D.C. Cir. 2000); *see also Sierra Club v. EPA*, 353 F.3d 976, 982-984 (D.C. Cir. 2004); *Mossville Env't'l Action Now v. EPA*, 370 F. 3d 1232, 1242-43 (D.C. Cir. 2004) (EPA must explain the correlation between the surrogate and the represented pollutant that provides the basis for the surrogacy); *Trimble County*, Order at 44 (“EPA believes that [federal case law] demonstrate[s] the need for permit applicants and permitting authorities to determine whether PM 10 is a reasonable surrogate for PM2.5 under the facts and circumstances of the specific permit at issue, and not proceed on a general presumption that PM10 is always a reasonable surrogate for PM2.5.”); *In re Cash Creek Generation LLC*, Petition Nos. IV-2008-1, IV-2008-2, Order at 13-14 (Adm’r Dec. 15, 2009) (same).<sup>10</sup> In other words, surrogacy is not an automatic default that applies unless and until EPA promulgates SILs and SMCs – it is the exception that must be justified on a source-specific basis and with a sufficient factual record. Furthermore, EPA has stayed the effectiveness of the rule that would have allowed use of surrogacy, meaning the rule has no legal effect. 42 U.S.C. § 7607(d)(7)(B). If EPA was required to repeal a rule in order to stay its legal effect, as IEPA argues, then § 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B), would have no purpose.

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<sup>10</sup> *See also* 75 Fed. Reg. 6827 (discussing limitations on the surrogacy policy in light of case law and technical justifications).

Because IEPA failed to make the requisite source-specific factual record to support use of PM<sub>10</sub> surrogacy, and because it is unlikely that it could in light of EPA's statements and orders, review and remand are appropriate.

### **3. The Modeling IEPA Apparently Did Does Not Account for Nearby Sources.**

While there is almost no detail or explanation for the table that IEPA offers as its analysis of PM<sub>2.5</sub> ambient air impacts, the table suggests that IEPA only accounted for emission sources on the VCM property and some type of monitored background concentration. *See* Response to Comments, Ex. 6, at p. 40 n.102. Apparently missing from this analysis is any analysis of the contribution to ambient air impacts from nearby emission sources. Such nearby sources' emissions must be included in air impact modeling. *See* 40 C.F.R. part 51, App. W § 8.2.3 and Table 8-2; *NSR Manual* at C.32; Page PM<sub>2.5</sub> Memo at 6 ("a cumulative impact assessment would be necessary to account for the combined impact of facility emissions, emissions from other nearby sources, and representative background levels of PM<sub>2.5</sub> within the modeling domain"), 9 ("Develop an emission inventory of background sources to be included in the modeling analysis using traditional guidance. That would include using the significant impact area established in the initial significant impact analysis, plus a 50-km annular ring to determine the geographic extent of the background emission inventory."). Because the cursory "analysis" done by IEPA of PM<sub>2.5</sub> impact apparently omitted these contributions, review and remand are appropriate.

## II. IEPA'S USE OF REGIONAL MONITORING DATA IS NOT SUPPORTED BY EVIDENCE IN THE RECORD THAT THOSE DATA MEET THE MINIMUM APPLICABLE STANDARDS.

### A. Background on Pre-Construction Monitoring

Before a PSD permit can issue, the source must demonstrate to the permitting agency that it will comply with the applicable NAAQS "based upon the total estimated air quality, which is the sum of the ambient estimates resulting from existing sources of air pollution (modeled source impacts plus measured background concentrations) and the modeled ambient impact caused by the applicant's proposed emissions increase... and associated growth." *NSR Manual* at C.3. Pursuant to the Clean Air Act, an applicant must "agree[] to conduct such monitoring as may be necessary to determine the effect which emissions from any such facility may have, or is having, on air quality in any area which may be affected by emissions from such source." 42 U.S.C. § 7475(a)(7). More specifically, at a minimum, the preconstruction PSD review must "be preceded by an analysis... by the State... or by the major emitting facility applying for such permit, of the ambient air quality at the proposed site and in areas which may be affected..." 42 U.S.C. § 7475(e)(1). This analysis "shall include continuous air quality monitoring data gathered for purposes of determining whether emissions from such facility will exceed the [NAAQS or TSD increment]." 42 U.S.C. § 7475(e)(2) (emphasis added). The Act specifies that this data "shall be gathered over a period of one calendar year preceding the date of application for a permit under this part unless the State... determines that a complete and adequate analysis for such purposes may be accomplished in a shorter period." *Id.* The implementing regulations require the same. 40 C.F.R. § 52.21(m)(f). EPA has provided specific

exceptions where monitoring is not required, indicating that in all other instances such monitoring *is* required. 40 C.F.R. §§ 52.21(i)(8)(i), (m)(1)(v), (vi), (vii).

The *NSR Manual* further provides that:

It is generally preferable to use data collected within the area of concern; however, the possibility of using measured concentrations from representative "regional" sites may be discussed with the permitting agency. The *PSD Monitoring Guideline* provides additional guidance on the use of such regional sites.

Once a determination is made by the permitting agency that ambient monitoring data must be submitted as part of the PSD application, the requirement can be satisfied in one of two ways. First, under certain conditions, the applicant may use existing ambient data. To be acceptable, such data must be judged by the permitting agency to be representative of the air quality for the area in which the proposed project would construct and operate. Although a State or local agency may have monitored air quality for several years, the data collected by such efforts may not necessarily be adequate for the preconstruction analysis required under PSD. In determining the representativeness of any existing data, the applicant and the permitting agency must consider the following critical items (described further in the *PSD Monitoring Guideline*):

! *monitor location;*

! *quality of the data;* and

! *currentness of the data.*

If existing data are not available, or they are judged not to be representative, then the applicant must proceed to establish a site-specific monitoring network.

*NSR Manual* at C.18-.19. The Administrator has previously held that "EPA allows substitution of existing representative data in lieu of having the source generate its own preconstruction monitoring data, *provided* these data meet the criteria in the 'Ambient

Monitoring Guidelines for the Prevention of Significant Deterioration' ...” *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 850 (Adm’r 1989) (emphasis added); *see also In re Northern Michigan University Ripley Heating Plant*, 14 E.A.D. \_\_\_, PSD 08-02, Slip Op. at 62-63 (EAB Feb. 18, 2009) (remanding for a determination of whether the preconstruction monitoring complied with regulations and EPA guidance).

The *PSD Monitoring Guidelines*, referenced in the *NSR Manual* and in the Board’s prior decision, provide that monitoring data from off-site monitors to be used if those data represent the locations of:

- (a) maximum concentration increase from the proposed facility;
- (b) maximum air pollutant concentration from existing sources; and
- (c) maximum combined impact area (existing sources plus proposed facility).

*Ambient Monitoring Guidelines* § 2.4.1, at 6-8; *Hibbing Taconite*, 2 E.A.D. at 850-51. Where the monitors are not located within the area modeled for the permit decision, regional monitoring data can only be used in certain limited situations. *Id.* The *Monitoring Guidelines* provide three types of situations and the respective limitations on use of regional monitors in each such situation. *Id.* These are generally as follows:

Situation	Conditions and Limits on use of Regional Monitoring Data
<p><b>Case I:</b> proposed source will be constructed “in an area that is generally free from the impact of other point sources and area sources associated with human activity”</p>	<p>Regional monitoring data may be used but the site of the monitor must be “similar in nature to the impact area... [and] characteristic of air quality across a broad region.” Additionally, the use of these regional monitors are intended to be limited to “relatively remote areas” and not in “areas of multisource emission or areas of complex terrain.”</p>
<p><b>Case II:</b> proposed source will be constructed in a multisource area and “basically flat terrain”</p>	<p>Regional monitoring data may be used only if either of the following is met:</p> <ol style="list-style-type: none"> <li>1) “The existing monitor is within 10 km of the proposed emissions; or</li> <li>2) The existing monitor is within or not farther than 1 km away from either the area(s) of the maximum air pollutant concentration from existing sources or the area(s) of the combined maximum impact from existing and proposed sources.”</li> </ol>
<p><b>Case III:</b> if the proposed construction will be in an area of multisource emissions and in areas of complex terrain, aerodynamic downwash complications, or land/water interface situations</p>	<p>Regional (existing) data can only be used if collected:</p> <ol style="list-style-type: none"> <li>1) “at the modeled location(s) of the maximum air pollution concentration from existing sources;</li> <li>2) At the location(s) of the maximum concentration increase from the proposed construction, and</li> <li>3) At the location(s) of the maximum impact area.</li> </ol>

Additionally, the data used from regional monitors must be of sufficient quality. The *Monitoring Guidelines* provide some minimum requirements in section 2.4.2. Additional quality requirements are set forth in 40 C.F.R. part 58, Appendix A (formerly Appendix



B).<sup>11</sup> Among the minimum data requirements are minimum data recovery, continuous monitoring, and minimum quality control practices and documentation. *Monitoring Guidelines* § 2.4.2; 40 C.F.R. part 58, App. A.

Lastly, the data used for PSD permitting must be current, which generally means that it must have been collected in a 3-year period preceding the application, provided that they are still representative of current conditions. *Monitoring Guidelines* § 2.4.3.

### **B. Sierra Club's Comments and IEPA's Response.**

Sierra Club's comments on the draft permit summarized the requirement for site-specific monitoring and the conditions in EPA's guidance for using monitoring located outside of the modeled impact area. Comments, Ex. 2, at 41-44. The comments then pointed out that the location of the monitors from which IEPA collected preconstruction data were "nowhere near the location of the maximum increase in ambient PM, NO<sub>x</sub>, SO<sub>2</sub> or CO concentrations from the proposed kiln, the maximum impact from existing sources nearby... or the location of the maximum impact from existing and proposed sources, much less the location of *all three* as required..." *Id.* at 44. Additionally, Sierra Club's comments pointed out that the record did not support a finding that the monitoring data used by IEPA met the minimum data quality requirements, or that they were sufficiently current. *Id.* at 44-45.

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<sup>11</sup> The applicable regulations require compliance with 40 C.F.R. part 58, Appendix B (now Appendix A) for all monitoring conducted for PSD permitting. See 40 C.F.R. § 52.21(m)(3).

In response to comments, IEPA asserts that there are no requirements for using substituted regional monitoring data for site-specific data as long as the monitoring data is “representative.” Response to Comments, Ex. 6, at 70-72. As to the specific criteria in the NSR Manual and Monitoring Guidelines, IEPA states:

USEPA’s guidance on this subject, as summarized in the NSR Manual, only requires that the regional monitoring stations must provide data that is representative, of appropriate quality and current. These criteria are readily satisfied for the proposed project, as well as for most proposed PSD projects in Illinois. This is because of the nature of Illinois’ ambient monitoring network. Ambient monitoring stations are sited to provide representative data for air quality in Illinois, as needed to support air quality planning and management in Illinois. These stations are also operated in accordance with quality assurance procedures so as so collect accurate data that can properly be relied upon for these purposes.

...

The ambient monitoring stations used to provide background levels of air quality meet these criteria. The monitors are sited to provide data that is representative of the project site. The monitoring was conducted to satisfy USEPA’s requirements for quality of data. Lastly, the data is representative of current air quality at the project site.

Response to Comments, Ex. 6, at 72-73. IEPA’s basis for its argument that the ambient monitoring stations used for background concentrations were “representative” appears to be “Illinois EPA’s knowledge of air quality in Northeastern Illinois and the character of the particular areas surrounding each monitoring station,” such as similarity between Manteno and Braidwood since both are “agricultural” and receive “urban transport, when the wind is coming from the Chicago Area.” Response to Comments, Ex. 6, at 75. IEPA

speculates that background air quality in Manteno “is likely significantly lower” than data from the monitors in Joliet and Midlothian. *Id.*

Specific to the criteria for monitor location in *Monitoring Guidelines* § 2.4.1<sup>12</sup>, IEPA claims that its regional monitors, located 20-25 miles away, meet the criteria:

The ambient monitoring stations used to provide background levels of air quality meet this criterion. For the proposed project, a single value for ambient background can be considered representative for all three locations. These criteria do not require the use of different values for background air quality at these locations.

*Id.* at 73-74. IEPA further argues that the *Monitoring Guidelines*’ “Case I” -- for areas free of impact from other point and area sources, rather than “Case II” -- for areas that have multiple sources and flat terrain – should apply to VCM. *Id.* at 74. Thus, IEPA argues, it can rely on monitors located outside of the area modeled for VCM (and outside of the 10 km maximum range for “Case II” sources). *Id.*

As to the data quality criterion, IEPA asserts without citing data or analysis in the record, that “Illinois’ ambient monitoring network is operated to meet the applicable ‘quality requirements’” because the data are “relied upon for designations for attainment and nonattainment, development of attainment strategies, and general air quality planning” and because U.S. EPA conducts “periodic audits.” *Id.* at 76.

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<sup>12</sup> That the monitor(s) be located three specific areas: (1) the location(s) of maximum concentration increase from the proposed project; (2) the location(s) of the maximum air concentration from existing sources; and (3) the location(s) of the maximum impact area, i.e., where the maximum pollutant concentration would hypothetically occur based on the combined effect of existing sources and the proposed project.

**C. IEPA Failed to Demonstrate Through Evidence In the Record That The Regional Monitors Located 20-25 Miles from VCM Satisfy The Criteria for Non-Site-Specific Monitoring.**

**1. IEPA Failed To Make A Record That Supports Its Decision.**

IEPA's Response to Comments is inadequate. IEPA makes assertions that its regional monitors are sufficient to meet the criteria for non-site-specific preconstruction monitoring but fails to make a record to support those assertions. In *In re Hawaii Electric Light Company, Inc*, the Board rejected similar attempts by a permitting agency to rely on conclusions that were not supported by sufficient explanation demonstrating that the agency's use of regional monitoring data fell within the limits of the agency's discretion as defined by the *Monitoring Guidelines*. 8 E.A.D. 66, 103-05 (EAB 1998). In that case, the Board rejected the permitting agency's response to comment that, like IEPA's response here, "simply asserted that use of a regional site is appropriate without explaining why." *Id.* at 104; *see also In re Indeck-Elwood LLC*, 13 E.A.D. \_\_, PSD 03-04, Slip. Op. at 47-48 (EAB Sept. 27, 2006) (reversing IEPA's PSD permitting decision where IEPA provided "only conclusory responses to the comments" that failed "to connect such responses to supporting documents in the record" especially where comments questioned the adequacy of the agency's basis) (citing *In re Haw. Elec. Light*, 8 E.A.D. at 99-105); *In re Government of D.C. Municipal Separate Sewer System*, 10 E.A.D. 323, 342 (EAB 2002) ("[w]ithout an articulation by the permit writer of his analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirement of rationality."); *Knauf I*, 8 E.A.D. at 175 (remanding permit because "there [we]re no details regarding [the permitting authority's] determination in

the administrative record” with which to “judge the adequacy of the response”); *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417 (EAB 1997) (explaining that the permit issuer ““must articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions”” (quoting *In re Carolina Power & Light Co.*, 1 E.A.D. 448, 451 (Acting Adm’r 1978)); *In re McGowan*, 2 E.A.D. 604, 606-07 (Adm’r 1988) (finding fault in a response that provides merely conclusions “without supportive reasoning”). Without an explanation by IEPA, backed up with evidence and analysis in the record, IEPA cannot show that the record reflects its “considered judgment” necessary to support the permit determination. *In re Austin Powder Co.*, 6 E.A.D. 713, 720 (EAB 1997) (remand due to lack of clarity in permitting authority’s explanation); *Ash Grove Cement*, 7 E.A.D. at 417-18 (remanding RCRA permit because permitting authority’s rationale for certain permit limits was not clear and therefore did not reflect considered judgment required by regulations).

Here, review and remand is appropriate because IEPA has not made a record for *why*-- beyond IEPA’s speculation and conclusory statements – non-site-specific monitors located 20-25 miles away from the VCM facility and outside of the area modeled for compliance with NAAQS and increment satisfy the three location criteria of: (1) location of maximum concentration increase from VCM; (2) location of maximum concentration from existing sources; and (3) location of maximum concentration from combination of both VCM and existing sources. *Monitoring Guidelines* § 2.4.1.

Review and remand is also appropriate because IEPA has not made a record for why the regional air quality planning monitors meet the data quality criteria in the *Monitoring Guidelines* and 40 C.F.R. part 58 Appendix A. Despite to IEPA's assertions that its regional monitors have been audited by U.S. EPA and meet the data quality criteria for air quality planning monitors, part 58 Appendix A sets different minimum data quality requirements for SLAMS (state or local air monitoring stations, *see* 40 C.F.R. § 58.1) than for PSD permitting monitors. 40 C.F.R. pt. 85, Appx. A § 1.1.2 (PSD monitor annual performance checks "must be conducted by personnel different from those who performed routine span checks and calibrations, whereas for SLAMS, it is the preferred but not the required condition."), *id.* §§ 1.1.2, 5.2. (100% of PSD monitors must be checked each calendar quarter, whereas only 25% of SLAMs are checked each quarter), *id.* §§ 3.2.5.7, 3.3.1.3 (PSD monitoring site must be sampled every 6 days, or every three days for daily monitors, whereas the SLAMS site can be sampled every 12 days). Therefore, the fact that non-site-specific regional monitors meet the minimum data quality requirements for SLAMS does not mean that they meet the more stringent minimum data quality requirements for PSD preconstruction monitoring. IEPA does not show that its monitors meet the requirements for SLAMS, much less meet the more stringent data quality requirements for PSD monitors.

## **2. The Record that IEPA Did Make Contradicts Its Arguments and Conclusions.**

To the extent that IEPA did make a record relevant to the criteria for using ambient air data from regional non-site-specific monitors to satisfy the preconstruction monitoring

requirement, that record contradicts IEPA's conclusions. For example, to avoid the fact that the monitors from which it derived background ambient air data were not located within 10 kilometers of VCM or within 1 kilometer from the point of maximum concentration from existing sources or existing plus proposed sources, *Monitoring Guidelines* § 2.4.1 (Case II), IEPA argues that VCM "is more appropriately addressed... by Case I in the *Ambient Monitoring Guidelines*, not Case II" because VCM is "located in an area that is generally free from the impact of other point sources and area sources associated with human activities." Response to Comments, Ex. 6, at 74. However, the record contains the NAAQS modeling inventory with point sources located within the Significant Impact Area from VCM. Those sources include two sources within a kilometer, another three within two kilometers, and 23 within five kilometers. See IEPA NAAQS Modeling Inventory (sorted by distance), attached hereto as **Exhibit 7**. Additionally, VCM's spokesperson at the public hearing also confirmed that that "[t]here's another quarry in the area" and pointed it out on a map during the hearing. Hr'g Tr., Ex. 3, at p.15 ln. 18 to p. 16 ln. 4.<sup>13</sup> Moreover, in its Statement of Basis for the permit, IEPA notes that modeling the sources in the NAAQS modeling inventory resulted in SO<sub>2</sub> NAAQS violations due to other sources in the area. Statement of Basis, Ex. 5, at 9. That there are other sources in the modeling inventory that are potentially affecting the NAAQS modeling to the point that NAAQS violations are detected belies IEPA's

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<sup>13</sup> The Hearing Officer states that he marked the map showing the other quarry (and other items of the VCM slideshow) as Exhibit 4 to the Public Hearing. See Hr'g Tr., Ex. 3, at p. 22 ln. 13-15.

contention that the area fits in “Case I” of section 2.4.1 of the *Monitoring Guidelines*, which is limited to “relatively remote areas” and not “areas of multisource emissions.”<sup>14</sup>

**III. THE 240% “MARGIN” IEPA INCLUDED IN THE CO BACT LIMIT AND THE 30% “MARGIN” INCLUDED IN THE NO<sub>x</sub> LIMIT ARE NOT BASED ON SUFFICIENT FINDINGS TO MEET LEGAL STANDARDS.**

**A. Background on Establishing BACT Limits.**

The Act and U.S. EPA PSD regulations make major new stationary sources and major modifications subject to BACT for emissions of certain pollutants. 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2). BACT requirement is defined as:

an emissions limitation based on the maximum degree of reduction of each pollutant subject to regulation under [the Act] emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.

42 U.S.C. § 7479(3); *see also* 40 C.F.R. § 52.21(b)(12) (providing similar regulatory definition of BACT). This definition requires limits to be set based on the maximum achievable emission reduction with the best pollution control option and “tailor-made” for that facility and that pollutant. *In re CertainTeed Corp.*, 1 E.A.D. 743, 747 (Adm’r 1982); *NSR*

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<sup>14</sup> IEPA’s Statement of Basis also purported to show the impact of VCM through an unusual method: IEPA modeled only VCM emissions and then added them to a “background” concentration of **double** the concentration derived from the regional monitors. Statement of Basis, Ex. 5, at 9. IEPA contends that this is “more realistic” than the actual NAAQS modeling, which IEPA contends is unrepresentative because emission rate or stack parameter inputs for the other sources in the area were incorrect. IEPA Response to Comments, Ex. 6, at 78-79. However, by doubling the data from the regional monitors to represent a “more realistic” background concentration undermines IEPA’s contention that those data were, in fact, representative of background concentrations at VCM.



*Manual* at B.2 (“The reviewing authority then specifies an emissions limitation for the source that reflects the maximum degree of reduction achievable for each pollutant regulated under the Act.”). The words “maximum” and “achievable” constrain IEPA’s discretion. *Alaska Dept. of Env’tl. Conservation v. EPA*, 540 U.S. 461, 485-89 (2004). The plain meaning of “maximum” is “the greatest quantity, number, or degree possible or permissible; the highest degree or point (of a varying quantity...) reached or recorded; upper limit of variation.” WEBSTERS NEW WORLD COLLEGE DICTIONARY 837 (3<sup>rd</sup> Ed. 1997). The statutory language does not provide an exception or qualification for “margin of compliance.”

To the extent that the Clean Air Act’s plain language does not preclude an agency from establishing limits higher than the lowest emission rates achievable with the best control technology, the Board’s prior decisions hold that any operating margin above that demonstrated maximum emission reduction (lowest emission rate) must be based on specific findings. In *In re Newmont Nev. Energy Inv., LLC*, the Board accepted a limit that was higher than the lowest pollution rate potentially achievable through the best pollution controls because there was no evidence in the record that such limit was, in fact, achievable. 12 E.A.D. 429, 440 (EAB 2005). Under those circumstances, where *no* data existed, the Board nevertheless instructed the permitting agency that it must “adequately explain its rationale for selecting a less stringent emissions limit, and that rationale must be appropriate in light of all evidence in the record.” *Id.* In other words, even where the Board has previously allowed a margin between the maximum achievable pollution

reduction and the BACT limit, it has done so only where: (1) there was no evidence showing that a lower rate was achievable; and (2) the permitting agency made a full explanation in the record for selecting the specific BACT limit. *Id.* That is not the case here.

### **B. Sierra Club's Comments and IEPA's Response.**

Sierra Club's comments noted that there is no basis in the record for the Draft Permit's proposed 11.48 lb/ton of limestone feed BACT limit for Carbon Monoxide (CO). Sierra Club Comments, Ex. 2, at 41. Additionally, Sierra Club noted that IEPA's permit record contained evidence that lower emission rates had been established and demonstrated by other lime kilns. *Id.* As to the NO<sub>x</sub> BACT limits in the Draft Permit, Sierra Club noted that U.S. EPA's RACT/BACT/LAER Clearinghouse and in a memo written by IEPA in 2000, lower emission limits have been set and are achievable. *Id.* at 40-41.

In response, IEPA contends that the VCM kiln is different than other kilns. Response to Comments, Ex. 6, at 65-67. Therefore, IEPA argues, limits and test data from other kilns are not relevant to the VCM kiln. IEPA insists that:

The test that is relevant to establishing NO<sub>x</sub> BACT limits for the proposed kiln is the one that was performed on the kiln itself, when it historically operated. The NO<sub>x</sub> emissions of the kiln measured by this test were 3.45 pounds per ton of stone feed. The various limits for NO<sub>x</sub> set as BACT all relate to this solid reference point for the NO<sub>x</sub> emissions of the proposed kiln.

*Id.* at 67. However, IEPA admits that despite site-specific test data showing compliance with a 3.45 pound per ton of stone feed NO<sub>x</sub> rate, IEPA set the BACT limit higher than the

demonstrated performance of the VCM kiln “to provide an operating margin to address normal variation in the operation of the kiln.” *Id.*

As to the CO BACT limit, IEPA asserts that it did make a record and that the basis for the proposed BACT limit for CO (which was not explained in the Statement of Basis document) is that the kiln has already demonstrated a CO emission rate of 4.76 lbs per ton of stone feed on a three hour average. Response to Comments, Ex. 6, at 69, n.191. IEPA explains the large disparity between the demonstrated 4.76 lb/ton rate and the proposed BACT limit of 11.48 lb/ton as follows:

As CO is controlled by good combustion practices, it is appropriate for the CO BACT limit to be set with a significant margin of compliance to address normal variability in operation. Accordingly, the BACT limit is set at 11.48 pounds per ton... The BACT limit was also set also [sic] considering the conflicting relationship between NO<sub>x</sub> and CO emissions during combustion processes and the BACT determination for NO<sub>x</sub>. In order to set a low BACT limit for NO<sub>x</sub>, it is necessary for the kiln to be able to operate at low levels of excess air, which may be accompanied by higher levels of CO than if NO<sub>x</sub> was not being minimized.

Response to Comments, Ex. 6, at 69. However, IEPA also notes that NO<sub>x</sub> had been tested previously, in 1999, and when the CO emission rates were 4.76 lb/ton the NO<sub>x</sub> emissions were still lower than the proposed NO<sub>x</sub> BACT limits by 30%. *Id.*

**C. Review Is Appropriate Because IEPA Failed To Justify Its 240% and 30% “Margin of Compliance” on The Applicable Standards.**

Here, IEPA identifies testing data from the VCM kiln (which is being permitted after it has already been constructed and operated) that are well below the proposed BACT limits for NO<sub>x</sub> and CO. Despite IEPA’s reliance on those test data, IEPA sets

emission limits that are much less stringent to provide a “compliance margin.” This is in error for two reasons.

First, it is clear that the maximum degree of reduction achievable with the selected pollution controls for NO<sub>x</sub> and CO (good combustion practices) results in lower emission rates than the permit establishes as BACT. In fact the specific kiln at issue had previously demonstrated lower emissions. This is not a case like *Newmont*, in which the Board upheld the permitting agency’s “rejection of a more stringent emission limit based on the absence of data showing that the more stringent emissions limit has been consistent achieved over time...” 12 E.A.D. at 440.

Second, even if there were no data showing that lower emission rates are achievable, IEPA failed to make any record or provide any explanation for the degree of “compliance margin” it granted. In other words, even assuming all of IEPA’s assertions as true – that achieving the NO<sub>x</sub> BACT limit would result in higher CO emissions than tested in 1999 and that there is “natural variability” in NO<sub>x</sub> and CO limits – IEPA does not connect those presumptions to the specific numbers it established as BACT limits. Why do these assumptions require a BACT limit that is 240% of the previously demonstrated achievable emission rate of 4.76 pounds of CO per ton of stone feed and 30% higher than the previously demonstrated achievable emission rate of 3.45 pounds of NO<sub>x</sub> per ton of stone feed?

Remand is appropriate because IEPA failed to make a record and adequately explain the basis for its “compliance margins,” even assuming that compliance margins

above achievable emission rates could be allowed in a BACT analysis. *Newmont*, 12 E.A.D. at 440 (holding that when establishing a limit to contain a compliance margin, a permitting agency must “adequately explain its rationale for selecting a less stringent emissions limit, and that rationale must be appropriate in light of all evidence in the record.”), 442-43 (holding that even where a safety factor is allowed in setting a BACT limit to account for natural variation over time, “the basis for choosing the alternative level (or range) of control in the BACT analysis must be documented” (quoting *NSR Manual* at B.24)); *Steel Dynamics*, 9 E.A.D. at 191, n.31 (requiring the agency to adequately document its decision making process when establishing BACT limits); *Knauf Fiber Glass*, 8 E.A.D. at 134-42 (remanding a permit to the agency because the agency failed to provide its underlying analysis in reaching a BACT conclusion); *Ash Grove Cement*, 7 E.A.D. at 417 (requiring the agency to “articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions.” (quoting *In re Carolina Power & Light Co.*, 1 E.A.D. 448, 451 (Act’g Adm’r 1978); *In re GSX Servs. Of S.C., Inc.*, 4 E.A.D. 451, 453-54 (EAB 1992)); Richard J. Pierce, *Administrative Law Treatise* (4th ed.) § 11.4, p. 808 (“an agency must engage in ‘reasoned decision making,’ defined to include an explanation of how the agency proceeded from its findings to the action it has taken.”).

#### **IV. IEPA FAILED TO ENSURE COMPLIANCE WITH 1-HOUR NO<sub>x</sub>.**

As noted above, since the close of comment, U.S. EPA finalized a new NAAQS for NO<sub>x</sub> based on a 1-hour averaging period. 75 Fed. Reg. 6474 (Feb. 9, 2010). That new standard became effective the first business day after IEPA proposed the permit decision at issue in this appeal. *Compare* Permit, Ex. 1, at 1 (permit issued April 9, 2010) *with* 75

Fed. Reg. at 6474 (rule became effective on April 12, 2010). However, the permit decision was not *final* on April 9<sup>th</sup>. Instead, pursuant to 40 C.F.R. § 124.15(b), the permit does not become final until “30 days after the service of notice of notice of the decision” unless an appeal is filed with the Board, in which case the final permit is issued when the Board denies review, decides the case on the merits without a remand, or upon completion of remand proceedings after the Board’s review (unless the Board notifies the parties that appeal after the remand is required to exhaust remedies). 40 C.F.R. § 124.19(f)(2). Here, there is no question that the permit decision could not have become final, even absent this appeal, until at least May 9, 2010. There is also no question that the effective date for the 1-hour NO<sub>2</sub> NAAQS occurred before the final permit was issued. Therefore, IEPA had a clear obligation to ensure that the VCM plant would not cause or contribute to a violation of the 1-hour NO<sub>2</sub> NAAQS. 42 U.S.C. § 7475(a)(3), (e)(1); 40 C.F.R. § 52.21(k)(1), (m).

Sierra Club’s comments generally discussed the requirement to ensure compliance with the NAAQS in effect at the time of the comments. *See e.g.*, Comments, Ex. 2 at 30 (“Before IEPA can issue a permit for the VCM facility, it must ensure that... The plant will not cause or contribute to any violation of a national ambient air quality standard (NAAQS)...”). Sierra Club was not required to raise this issue specific to the new 1-Hour NO<sub>2</sub> NAAQS in comments. Pursuant to 40 C.F.R. §§ 124.13 and 124.19(a) and the Board’s prior decisions, Sierra Club is not required to comment on an issue that was not reasonably ascertainable during the comment period. The final 1-hour NO<sub>2</sub> standard was not reasonably ascertainable as it applies to VCM. The final standard was not

promulgated until February, 2010 – five months after the comment period closed for the VCM permit. Moreover, while the proposed standard was noticed in the Federal Register until July 15, 2009 – just days before Sierra Club’s comments were submitted-- it was not reasonably ascertainable that: (1) EPA would adopt a 1-hour standard; (2) it would take IEPA nearly a year after the comment period closed to propose to issue the final VCM permit; and (3) that U.S. EPA would not adopt a “grandfathering” provision for the NO<sub>2</sub> standard as it initially did for PM<sub>2.5</sub> standards in 2008. *See e.g.*, 73 Fed. Reg. at 28,340-28,341 (purporting to grandfather complete applications from direct PM<sub>2.5</sub> regulation under PSD). This is not a case like *In re Christian County Generation, LLC*, where Sierra Club specifically foresaw the outcome of a case in which Sierra Club was a part and which, when decided in Sierra Club’s favor, gave rise to the issue on appeal. 13 E.A.D. \_\_\_, PSD 07-01, Slip Op. at 13 (EAB, Jan. 21, 2008). Here, Sierra Club would have had to predict *all three* facts (final adoption, long delay by IEPA, and no grandfathering). Moreover, because 42 U.S.C. § 7409(d)(1) requires the Administrator to periodically review NAAQS, a requirement that the public comment on specific NAAQS almost a year before they are finalized would serve no reasonable basis. The public would either be barred from ensuring compliance with one of the most important provision of the Act, or would be required (to the extent the Board would even find such comments sufficient) to include “catch-all” comments that the permitting agency must “ensure compliance with any NAAQS that may be finalized prior to the final permit decision”: a comment that

adds nothing to the clear legal requirement to do so anyway. 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k).

Furthermore, in light of the central importance of NAAQS compliance to the PSD program, 42 U.S.C. § 7475(a)(3), and the health threats posed by violations of the 1-hour NO<sub>2</sub> NAAQS, *e.g.*, 75 Fed. Reg. at 6478-83, the Board should exercise its discretion to review this issue even if it was reasonably ascertainable during the comment period. *See e.g., In re Campo Landfill Project*, 6 E.A.D. 505, 519 n.19 (EAB 1996) (noting that although the Board found the issue not “reasonably ascertainable,” it could have exercise its discretion to review the issue of emission offsets anyway because of the issue’s importance). Review and remand is appropriate.

**V. EPA’S RECENT FINAL ACTION REGARDING THE AGENCY’S INTERPRETATION OF “SUBJECT TO REGULATION.”**

Sierra Club’s comments raised the issue of BACT limits for carbon dioxide (CO<sub>2</sub>) and discussed the so-called “Johnson Memo” purporting to set forth the EPA’s interpretation of the phrase “subject to regulation” in 40 C.F.R. § 52.21(b)(50)(iv) and in 42 U.S.C. § 7475(a)(4). Comments, Ex. 2, at 2-30. As noted, the Johnson Memo suffered from substantive and procedural flaws and is likely to be challenged in an appellate court. *Id.* at 13.

Following the public comment process for the VCM permit, EPA underwent a process of seeking public comment on its reconsideration of the Johnson Memo. *See* 74 Fed. Reg. 51,535 (Oct. 7, 2009). On March 30, 2010, well after the comment period was closed but before IEPA proposed to issue this permit to VCM, EPA finalized its



interpretation of “subject to regulation” through a final action following its notice and comment process. *See* 75 Fed. Reg. 17,004 (April 2, 2010). In that final decision, EPA concludes that “subject to regulation” means “actual control” as of the date of that a regulatory requirement “is operative on the activity regulated.” Therefore, according to EPA's recent final Federal Register notice, BACT limits for greenhouse gases are not subject to BACT limits until January 2, 2011. Thus, for purposes of this case before the Board<sup>15</sup>, the Reconsideration Final Decision<sup>15</sup> would appear to resolve some of the Greenhouse Gas BACT issues in Sierra Club’s comments and represent EPA’s final position on the matter.

Sierra Club’s immediate petition does not raise the issue of CO<sub>2</sub> BACT before the Board. However, if the Administrator’s Reconsideration and Final Decision is overturned or vacated by the Circuit Court of Appeals for the District of Columbia, 42 U.S.C. § 7607(b)(1), the VCM permit must contain a BACT limit for CO<sub>2</sub>. Similarly, if the Permit is not final prior to January 2, 2011, it will require BACT limits for these pollutants. *See* 75 Fed. Reg. at 17,021 (stating that no grandfathering is allowed and that permits that are not final prior to January 2, 2011 will need a BACT limit for GHGs); *see also* 40 C.F.R. §§ 124.15(b) (a final decision becomes effective after review under § 124.19, if such review is requested), 124.19(f)(1) (final agency actions occurs when the PSD permit is issued after completion of review and remand, if any); *Ziffrin v. United States*, 318 U.S. 73, 78 (1943) (“*A fortiori*, a change of law pending an administrative hearing must be followed in relation to

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<sup>15</sup> Sierra Club does not agree that the Reconsideration Final Decision is a correct interpretation of law, nor that a state should follow it when interpreting the state’s implementation plan. Those issues will be addressed in the appropriate forum.

permits for future acts.”); cf. *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 614-15 (EAB 2006) (distinguishing applicability of rules that are expressly prospective to new *applications* and not pending permits, as in that case, from rules that do not contain such express limitation). Therefore, if remand is granted on any other issue, or if this permit does not become final prior to January 2, 2010, IEPA must be required to include a BACT limit for CO<sub>2</sub> emissions.

### CONCLUSION

For these reasons we respectfully urge the Board to review and remand the Vulcan Materials PSD permit.

Respectfully submitted, this 9th day of May, 2010.

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