

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

IN THE MATTER OF: )  
FOOTPRINT POWER SALEM )  
HARBOR DEVELOPMENT, LP ) Appeal No. PSD 14-02  
 ) Massachusetts DEP Application No. NE-12-022  
 ) Massachusetts DEP Transmittal No. X254064

AMENDED PETITION FOR REVIEW

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## Introduction

Pursuant to 40 C.F.R. § 124.19(a) , the undersigned residents of Salem and of other towns nearby petition for review of the Prevention of Significant Deterioration permit (Exh. 1) issued by the Massachusetts Department of Environmental Protection (“MassDEP”) to Footprint Salem Harbor Development LP (“Footprint”) to construct a 692-megawatt combined cycle electric generating facility. The proposed facility is known as the Salem Harbor Redevelopment project (“SHR”).

## Threshold Procedural Requirements

Petitioners satisfy the threshold requirements for filing a petition for review. Petitioners have standing because they participated in the public comment period on the draft permit. 40 C.F.R. § 124.19(a)(2). As described more below, the issues raised in this petition were raised by petitioners with MassDEP during the public comment period, were raised by other commenters, or are directly related to MassDEP’s responses to other comments (*i.e.*, the issues were not reasonably ascertainable during the comment period). On March 3, 2014, petitioners filed a petition for review and a motion for permission to file an amended petition in two weeks’ time.<sup>1</sup> On March 6, 2014, the Board granted the petitioners’ motion, and allowed them until March 17 to file this amended petition.

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<sup>1</sup> In their motion, petitioners stated that they were “represented” by the Conservation Law Foundation up until CLF entered into a settlement agreement with Footprint on February 18, 2014. *See* PFR/Motion at 2. In its opposition, Footprint pointed out that CLF was merely the “authorized representative,” not the attorney, of the petitioners. *Opp.* at 4. Although it is moot at this point, Footprint is correct, and petitioners regret the error, which was inadvertent. It remains the case that petitioners had no lawyer working for them in *any* capacity after CLF settled with Footprint on February 18.

## Argument

### I. BACT analysis.

The BACT analysis attached to the Final PSD Fact Sheet (Exh. 2) and Response to Comments (Exh. 3) is new. It was submitted by Footprint almost two months after the comment period closed, and summarily adopted by MassDEP a few weeks later in the final PSD Fact Sheet. This document admits that similar facilities, including power plants permitted by MassDEP itself, have lower emissions of particulate matter and other criteria pollutants. The permit should be remanded because MassDEP has never adequately explained why these lower emissions cannot be achieved by Footprint, and has also never allowed anyone (EPA Region 1 included) to comment on the explanations it did provide.

#### A. Background.

The original BACT analysis was an anecdotal survey of other facilities, primarily in Massachusetts, that was included in Footprint's 2012 permit application and supplemented several times over the spring and summer of 2013. The original analysis was just over 13 pages long, relied extensively on MassDEP guidance, and did not provide a comprehensive list of emissions limits at the many similar facilities listed in the EPA BACT database. *See* Permit Application, § 5 (Exh. 5). This BACT analysis was never attached to the draft PSD Fact Sheet and appears never to have been formally adopted by MassDEP; it was instead simply summarized by MassDEP in the draft PSD Fact Sheet. *See* Draft PSD Fact Sheet at 8-18 (Exh. 4).

Petitioners submitted a comment to MassDEP urging MassDEP to replace this analysis entirely with a new analysis to conform to the BACT guidance in the *NSR Manual*. Petitioners' Comment Letter, at 1-3 (Exh. 6). For its part, EPA Region 1 commented that that, without the

analysis itself, “it is difficult for the public or EPA to provide informed and effective comments.” EPA Comment Letter, Encl. at 1 (Exh. 7). The Region urged MassDEP to make the BACT analysis “available for the public and EPA to review” – presumably *before* the issuance of the final permit, so that this “review” could produce the “informed and effective comments” that the Region was unable to make on the draft permit. *Id.*<sup>2</sup>

A few months later, after the comment period closed, Footprint submitted a totally new BACT analysis. Footprint went on to supplement this document several times, right up to the week before the final permit was issued. In the Response to Comments and the final PSD Fact Sheet, MassDEP appears to have adopted Footprint’s analysis *in toto*, which it attached to the final PSD Fact Sheet – without explicitly acknowledging that this was a *new* BACT analysis, that had replaced the one on which the draft permit was based.<sup>3</sup> This version is 54 pages long – more than 40 pages longer than the original analysis. See RTC at 42-96 (Exh. 3). Though different in scope and method, the new analysis still produced emissions limits that were essentially identical to the prior analysis.

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<sup>2</sup> EPA’s letter stated: “Without the analysis showing how the MassDEP reached its permit decisions, it is difficult for the public or EPA to provide informed and effective comments regarding the MassDEP’s SHR BACT decisions. We understand the MassDEP is relying on the BACT analysis provided in Footprint’s PSD permit application. EPA recommends the MassDEP attach the applicant’s BACT analysis as an appendix to the Fact Sheet. ... This analysis should be available for the public and EPA to review.” EPA Comment Letter, Encl. at 1 (Exh. 6).

<sup>3</sup> Here is MassDEP’s response to EPA’s comment: “The applicant’s top down-BACT analysis is appended to the final PSD Fact Sheet as Appendix 1. Based on MassDEP review, the analysis conforms to USEPA Guidance and results in BACT determinations and emissions limitations consistent with the Draft PSD Fact Sheet and Draft PSD Permit.” RTC at 8. The appended BACT analysis is undated. At one point MassDEP did refer to the “updated PSD BACT analysis for GHG emissions (Section 4.1.5 of the Applicant’s December 11, 2013 submittal [sic]).” RTC at 10. But the December 2013 submittal was not just an update about GHG emissions, it was a completely new BACT analysis of all pollutants.

**B. The BACT analysis does not adequately explain why lower emission limits at similar facilities were not adopted.**

The new BACT analysis came to the same conclusion as before – that the draft permit emission limits were BACT – but now cited conflicting evidence in support. Specifically, the new BACT analysis identified numerous similar facilities with significantly lower emissions limits for particulate matter (PM), greenhouse gases (GHG), and nitrous oxides (NO<sub>x</sub>). But MassDEP’s reasons for rejecting these limits were conclusory and contradictory, for the reasons described below.

**1. The applicable law: MassDEP was obligated to investigate lower emissions limits, and explain in detail its decision not to accept them.**

In a traditional BACT top-down analysis, permit writers are supposed to undertake a 5-step process that culminates in selecting “a pollutant emission limit achievable by the most effective control option not eliminated” in the preceding four steps. *NSR Manual* at B-59.<sup>4</sup> “In the absence of a showing of differences between the proposed source and previously permitted sources achieving lower emissions limits, the permit agency should conclude that the lower emissions limit is representative for that control alternative.” *Id.* at B.24. But permit writers retain discretion to set BACT levels that do not necessarily “reflect the highest possible control efficiencies,” for example where the agency can show that the most stringent limit would not allow “permittees to achieve compliance on a consistent basis.” *In re Pio Pico Energy Center*, PSD Appeal No. 12-04, 2013 EPA App. LEXIS 30, at \*138 (EAB) (citation and internal quotation marks omitted).

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<sup>4</sup> “Although it is not a binding U.S. EPA regulation, the Board has looked to the NSR Manual as a statement of U.S. EPA’s thinking on certain PSD issues.” *In re Mississippi Lime Company*, PSD Appeal No. 11-01, 2011 EPA App. LEXIS 24, at \*12 n.4 (EAB 2011).



But when it exercises this discretion, the agency has a significant burden. As the Board has previously explained, the agency must analyze the issue in detail, consider all the information in the record, and investigate the lower emissions limits approved in other permits but rejected in the permit under consideration:

[T]he permit issuer has an obligation to adequately explain its rationale for selecting a less stringent emission limit, and that rationale must be appropriate in light of all the evidence in the record. . . . This is because BACT determinations are one of the most critical elements in the PSD permitting process. As such, the determination of what represents BACT for a specific facility must reflect the considered judgment on the part of the permit issuer, and must be well documented in the administrative record.

*In re Pio Pico Energy Center*, PSD Appeals No. 12-04, 2013 EPA App. LEXIS 30, at \*163-64 (citations and internal quotation marks omitted). For example, decisions to adopt less stringent controls have been remanded where “it appears that the [agency] dismissed or overlooked highly relevant information without adequate explanation,” *id.* at \*164, where the agency’s rationale “fails to reflect all of the information in the record,” *id.* at \*165, where the agency “does not analyze [conflicting] data in detail,” *id.* at \*167, or where the agency simply failed to investigate recent regulatory determinations accepting more stringent emissions limits. As the Board has explained, the permit issuer “fundamentally misunderstands” its role if it does not “investigate and examine recent regulatory determinations” setting lower emissions limits. *In re Mississippi Lime Co.*, PSD Appeal No. 11-091, 2011 EPA App. LEXIS 24, at \*42-43. “The existence of a similar facility with a lower emissions limit creates an obligation [for the agency] to consider and document whether that same emissions level be achieved at the proposed facility.” *Id.* at \*43 (brackets and internal quotation marks omitted).

As described in the sections that follow, MassDEP's rejection of lower emissions limits for PM, GHG and NOx were based on just the sort of hazy assumptions condemned in *Pio Pico* and *Mississippi Lime*.

## **2. The PM limit is not supported by the record.**

Particulate matter is a deadly substance even in small quantities, and petitioners are faced with the prospect of living next to a power plant that is now authorized to emit over 160,000 pounds of it every year. Yet MassDEP's BACT analysis acknowledges that many facilities have lower PM emissions levels than SHR, including the Pioneer Valley Energy Center (PVEC), which was permitted in 2012 by MassDEP at .004 lb/MMBtu.<sup>5</sup> RTC at 51 (Exh. 3). This is significantly less than the .0062 (duct firing) / .0071 (no duct firing) lb/MMBtu limits that the final permit imposes on SHR. Final Permit at 5 (Exh. 1).

MassDEP's rejection of the more stringent limits is cavalier. First, MassDEP says its own emission limit for PVEC is not achievable, because PVEC uses a Mitsubishi turbine for which there is no direct "empirical" data. RTC at 11 (Exh. 3). But, says MassDEP, this PVEC turbine is "based on" an older Mitsubishi turbine used at the Mystic facility, and recent test results of the four turbines at Mystic show PM emissions of .005 to .010 lb/MMBtu, most of which was apparently "condensable" PM. Final PSD Fact Sheet at 12 (Exh. 2). Yet MassDEP never provides all the data associated with the Mystic turbines – *e.g.*, precisely what the emissions were for each of the four turbines, and how many of them had emissions lower than the 0.0062/0.0071 lb/MMBtu authorized for SHR. Moreover, Mitsubishi itself commented on MassDEP's analysis, but MassDEP never came to grips with the substance of the comment. *See*

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<sup>5</sup> MassDEP issued a Comprehensive Plan Application approval to PVEC containing this emission limit; EPA Region 1 issued the PSD permit.

Mitsubishi Comment Letter (Oct. 1, 2013), at 1-2 (Exh. 8). According to Mitsubishi, (1) the Mystic turbine is an older model that is *not* comparable to the PVEC turbine, and (2) the Mystic turbine has not exceeded the Mystic emissions limit or underperformed against the guarantees associated *with that turbine*; that is, the Mystic results give no reason to doubt Mitsubishi's guarantees generally. *Id.* According to Mitsubishi, the new Mitsubishi turbine planned for PVEC generates less condensable PM in particular – the very component of the Mystic emissions that MassDEP objected to – and the new turbine's performance data was calculated based on standard industry practices.<sup>6</sup> Yet MassDEP never explains its reasons for concluding (or rather for accepting Footprint's conclusion) that this guarantee is not achievable.<sup>7</sup> Indeed, the whole SHR application is based on exactly the same sort of vendor calculations from SHR's own turbine supplier, General Electric. For example, MassDEP acknowledges that SHR's PM limits are “based on guarantees supplied by the vendor (GE)” (Fact Sheet p.12), and it even relied on a letter from Footprint's attorneys summarily changing this guarantee after the comment period closed.<sup>8</sup> Moreover, Footprint's own BACT analysis identifies *numerous* permits that rely on

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<sup>6</sup> As the Mitsubishi representative put it: “The older combustor type used at the Mystic facility should not be directly compared to the new combustor type which is going to be used at the PVEC facility because the condensable particulates generated with the older style combustor used at Mystic will be higher. The calculated particulate matter emissions for the PVEC facility (0.004 lb/MMBtu) is based on standard industry practice methodology for determining PM. [Mitsubishi] has re-reviewed the PM calculations for the equipment supplied for the PVEC project and confirms that the value of 0.004 lb/MMBtu for the PM emissions of the equipment is correct.” *Id.*

<sup>7</sup> The BACT analysis appended to the RTC concludes: “Footprint remains convinced that the Mitsubishi's recent ... limits ... present undue project risks.” RTC at 51 (Exh. 3).

<sup>8</sup> The Final PSD Fact Sheet (Exh. 2) says on page 3: “The Applicant submitted a comment to MassDEP indicating that it had obtained an additional guarantee from its equipment vendor, General Electric (GE), and that, as a result, the emission limits for Particulate Matter (PM<sub>10</sub>/PM<sub>2.5</sub>) set forth in the Proposed Plan Approval and the Draft PSD Permit could be reduced by approximately twenty five percent (25%).” *See also* Footprint comment letter at 1 (Exh. 9): “The Applicant can now report that it has obtained revised, lower particulate matter guarantees from its turbine vendor. .... Specifically, GE will now guarantee filterable plus condensable particulate stack emissions for operating loads greater than MECL.”

Mitsubishi turbines to set *significantly* lower PM limits, *see* RTC at 48-50 (Exh. 3), yet it contends that in *each case* the permitting agency has erroneously set an emissions limit that cannot actually be achieved.

Second, even if it were right that the new Mitsubishi values are not “achievable,” there is no reasoned basis for MassDEP’s rejection of more stringent limits at other facilities that *do not use Mitsubishi turbines*. MassDEP’s analysis here is again vague. It says that “a number” of the limits from other facilities – it does not say how many or which – reflect full loads, rather than the minimum emission compliance loads associated with higher PM emissions. RTC at 51 (Exh. 3). MassDEP also says that the limits “*appear* to be approved as constant across the operating load range,” and “Footprint [sic] *believes* this is a guarantee philosophy difference and does not reflect actual differences” – yet there is no further examination of whether this “appearance” is actually so, just bald reliance on Footprint’s *ipse dixit*. *Id.* (emphasis added). Moreover, many of the limits shown in Footprint’s BACT table *do* permit apples-to-apples comparison – *e.g.*, Renaissance Power is limited to 0.0042 lb/MMBtu even with duct firing, as compared to 0.0062 for Footprint; the Siemens unit at Oregon Clean Energy is lower as well (0.0047 with duct firing). *See id.* at 48-50. And at least one facility is limited to lower emissions than Footprint can achieve under any scenario, Russell City Energy Center, at 0.0036 lb/MMBtu. *See id.* at 50. MassDEP was obligated to “investigate and examine recent regulatory determinations” setting these lower emissions limits in detail, *Mississippi Lime*, 2011 EPA App. LEXIS 24, at \*42-43, yet it relied instead on bland generalities about its “belief” (or rather, Footprint’s belief) that the differences are attributable to “a guarantee philosophy difference.” Moreover, MassDEP undertook no real “investigat[ion] and examin[ation]” of these facilities’ emissions limits, as

*Mississippi Lime* requires; there is no in-depth analysis by MassDEP in the record that the Board could review, let alone defer to.

In sum, MassDEP brushed aside the Mitsubishi emissions limits based on comparisons that were not fair, based on a refusal to accept the same vendor guarantees that underlie SHR's entire permit application, and without responding to Mitsubishi's comment on the record pointing out the differences. It then brushed aside data about *numerous* other turbines based on broad generalities – “beliefs” and “appearances” – that do not hold up when specific comparisons are made between a particular facility and the SHR proposal, and that cannot be meaningfully analyzed on appeal. This is a classic case where the agency has “dismissed or overlooked highly relevant information without adequate explanation,” *Pio Pico*, 2013 EPA App. LEXIS 30, at \*164, where the agency's rationale “fails to reflect all of the information in the record,” *id.* at \*165, and where the agency has failed to “analyze [conflicting] data in detail,” *id.* at \*167. The permit should be remanded for MassDEP to reconsider its rejection of lower PM limits.

### **3. The GHG limit is not supported by the record.**

MassDEP leans on the same generalities in its BACT analysis for GHGs. MassDEP admits that the proposed Brockton, Massachusetts power plant – which, like PVEC, recently received an air permit from MassDEP – has significantly more stringent GHG limits.<sup>9</sup> This discrepancy is supposedly irrelevant because Brockton uses wet cooling (not dry) and because of Brockton's alleged failure to account for degradation over the life of the facility. Yet this

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<sup>9</sup> The Brockton facility has 12-month rolling average emissions limit of 856 lbs/MW-hr, versus 895 for SHR. RTC at 65 (Exh. 3). This constitutes a superior efficiency of 4.6%. As Footprint's opposition to the petitioners' motion noted (p.2), “the proposed Facility will be *one of* the most efficient fossil-fueled electric generators in the NEMA/Boston zone” (emphasis added).

analysis contradicts MassDEP’s primary rationale for rejecting wet cooling in the first place – that it is not significantly more efficient than the dry cooling system proposed by SHR.<sup>10</sup> The alleged failure to account for degradation at Brockton is pure speculation – the only evidence in the record is Footprint’s assertion that there is “no mention” in the Brockton permit of any consideration of this factor, without any finding by MassDEP (which issued the Brockton permit) that this was or was not part of Brockton’s analysis. If this assertion were true it would be surprising, because it would be a finding that Brockton is going to be unable to meet the emissions limit that MassDEP just recently set for it. The Brockton example may also suggest that SHR’s margin for degradation in GHG emissions is simply overstated.

Second, the BACT analysis gives the back of the hand to more stringent GHG limits at other facilities, in terms that are conclusory or incomprehensible. RTC at 62. For example, Footprint rejects a comparison to a Brunswick County facility because the emissions limit expressed in that permit “does not *directly* correspond” to the limits used by Footprint, without further investigation or analysis of whether a comparison is possible. *Id.* (emphasis added). Similarly, Footprint rejects a comparison to Oregon Clean Energy, because “the context of this actual permit *suggests* these limits are intended for ISO conditions without duct firing,” which supposedly makes the limit less stringent than the SHR limit. *Id.* (emphasis added). On their face these shrugs and suppositions are not the “investigat[ion],” “examin[ation]” and “document[ation]” that are required to establish that an apparently lower limit is in fact

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<sup>10</sup> From the BACT analysis: “The bottom line is that a wet, evaporative mechanical draft cooling tower with plume abatement features has a doubled capital cost, higher fan power consumption and higher pumping head than a standard cooling tower. These latter two factors greatly reduce any potential benefit from reduced parasitic load from the wet cooling system.” RTC at 61 (Exh. 3). Footprint also argued against wet cooling on the ground that obtaining adequate water for the wet cooling tower, though technically feasible, would place an unspecified “burden” on the project, and because it would produce a visible plume of steam. RTC at 60 (Exh. 3).

inapplicable. *Mississippi Lime*, 2011 EPA App. LEXIS 24, at \*42-43 ( duty to investigate and examine); *Pio Pico*, 2013 EPA App. LEXIS 30, at \*163-64 (duty to “document[ ]”).

Finally, the BACT analysis does not mention at all a number of comparable power plants with combined cycle generating turbines that appear to have significantly lower GHG emissions. For example, the Sierra Club has recently cited data from EPA’s Clean Air Markets database showing plants in Tennessee, Long Island, Nevada and Georgia with gross rolling average emissions between 731 lb/MWh and 802 lb/MWh – well below SHR’s gross rolling average emissions of 862 lb/MWh. *See* Sierra Club Letter at 7 (Exh. 10) (listing facilities), RTC at 61 (Exh. 3) (gross emissions), 63-64 (tabulation of comparable facilities). The Board need not accept these emission rates at face value,<sup>11</sup> because these data show at a minimum that the BACT evaluation for GHG was incomplete at its inception, and that there should be a remand for additional comment and analysis, as described in section I.C below.

The bottom line is that no reasonable person could read this record, as incomplete and full of equivocation as it is, and have any confidence that MassDEP properly determined that BACT for GHG is SHR’s emission limit, rather than the lower limits that have been approved or even demonstrated at other facilities. The permit should be remanded.

#### **4. The NOx emission limit at SUSD is not supported.**

As petitioners pointed out in their comments, RTC at 13, two permits (for power plants in Brockton, MA, and El Segundo, California) use Siemens “SGT6-PAC-5000F” and “SGT6-5000F” turbines that have been permitted at much lower NOx emissions at startup/shutdown (SUSD). But in its new BACT analysis, Footprint claims that that a “very similar” Siemens turbine actually has emissions that are almost three times the emissions permitted at Brockton

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<sup>11</sup> *See In re Cape Wind Associates, LLC*, OCS Appeal No. 11-01, 2011 EPA App. LEXIS 19, at \*32 (EAB) (appropriate to consider new evidence in response to new materials).

and El Segundo. RTC p.67; 13 (Exh. 3) (“Based on MassDEP’s review of the information submitted in Footprint’s application, the Siemens 5000F turbine cannot achieve the 36.4 lb/hr of NOx for any startup condition.”). This is apparently based on performance data from Siemens on its “1x1 SCC6-5000F” turbine – not the SGT6 used at Brockton and El Segundo. The Siemens data on the SCC6 was included in Footprint’s original PSD application and does indeed appear to show the higher emissions. Permit Application, App. C (Exh. 5). But there is no attempt to explain how the Brockton and El Segundo facilities could be held to such radically lower emissions limits, and whether and why the two models are really so “very similar” as to justify assuming that they have *identical* NOx emissions limits at SUSD.<sup>12</sup> MassDEP has not provided a reasoned explanation of how it and the South Coast Air Quality Management District could have imposed limits so much lower than the limits that Footprint says are possible.

**C. In the alternative, the permit should be remanded so that the comment period can be re-opened on the new BACT analysis.**

If the permit is not remanded to require MassDEP to revisit its BACT determinations, it should be remanded for MassDEP to take additional comment on its new BACT analysis. This is just what EPA appeared to recommend in its comment, when it pointed out that the absence of the BACT analysis made it “difficult for the public or EPA to provide informed and effective comments.” EPA Comment Letter, Encl. at 1 (Exh. 7). This recommendation became more a

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<sup>12</sup> The BACT analysis appended to the RTC admits that the Siemens turbine Footprint evaluated is supposedly “very similar” but not the same as the one used at El Segundo and Brockton. RTC at 67. However, the text of the RTC says nothing to indicate that the turbine evaluated in the BACT analysis does not have the same model number as the one permitted at Brockton and El Segundo. See RTC at 13(Exh. 3) (“The comment states that the Siemens SGT6-5000F turbine emits ... 36.4 lb/hr of NOx during an hour that includes a startup. ... Based on MassDEP’s review of the information submitted in Footprint’s application, the Siemens 5000F turbine cannot achieve the 36.4 lb/hr of NOx for any startup condition.”).



propos than EPA could have realized once MassDEP decided to replace the absent analysis with an entirely new analysis after the comment period closed.

Where additions to the record are “substantial,” the permitting authority “may” reopen the record, 40 C.F.R. § 124.14(b), which is a decision that the Board reviews for abuse of discretion. *In re Dominion Energy Brayton Point, LLC*, 13 E.A.D. 407, 416 (EAB 2007). Here the change was clearly substantial, not only because the BACT analysis was changed and expanded so drastically, but because the new BACT analysis identified so many lower emission limits set by or on behalf of EPA. All of these lower emission limits were rejected by MassDEP, without opportunity for comment by the public or the Region on MassDEP’s reasons. Moreover, any meaningful appellate review of MassDEP’s decisions is essentially impossible, because so many of the judgments it belatedly adopted are (as described above) vague and difficult to understand. These pronouncements are inevitably going to be subject to “post-hoc analysis” and tea-leave reading in this proceeding, an exercise the EAB has traditionally rejected. *See Pio Pico*, 2013 EPA App. LEXIS at \*166-67 (“The Region’s post-hoc analysis comes too late; the analysis should have been part of the record available for public comments before the Region determined the final PM BACT limits.”). Under these circumstances, the permit should be remanded to MassDEP so that it may re-open the record.<sup>13</sup>

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<sup>13</sup> *See also In re Eldeck-Elwood*, 13 E.A.D. 126, 146-48 (2006) (permit condition allowing a different boiler size was “a significant addition to the permit and at a minimum the public should have been afforded the opportunity to comment”); *id.* at 161 n.72 (reliance by permitting authority on EPA materials not in record “will not save IEPA from the public notice and comment problem referenced below, as these materials have not yet been subjected to public scrutiny under the PSD permitting process.”); *In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 102 (1998) (remanding where public was not given an opportunity to comment on air quality analysis data).

## **II. Air monitoring analysis.**

### **A. The use of regional air monitoring data is not supported by record evidence.**

Over the petitioners' objection, see Petitioners' Comment Letter, at 8 (Exh. 6), and over the objection of others who requested preconstruction monitoring, RTC at 17 (Exh. 3), MassDEP relied on existing monitoring data from a station in the Lynn Woods Reservation, which is a nature preserve 5.9 miles to the south-southwest of the proposed site in downtown Salem. This decision was not supported by the evidence in the record.

Under 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 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 the areas which may be affected,” typically to be gathered over one calendar year preceding the application. 42 U.S.C. § 7475(e)(1).

The *NSR Manual* states that “existing ambient data” may be used instead, if it is “representative of the air quality” at the facility site. *NSR Manual* at C.18-19. In determining the “representativeness” of existing data, the permitting agency must consider the monitor location, the quality of the data, and whether the data is current, as described further in the *Ambient Monitoring Guidelines for PSD*. *Id*; see also *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 850 (Adm'r 1989) (adhering to this guidance); *In re Northern Michigan University Ripley Heating Plant*, PSD 08-02, 2009 EPA App. LEXIS 5, at 115-17 (EAB) (same, remanding for determination of compliance with guidance). In turn, section 2.4.1 of the *Ambient Monitoring*

*Guidelines* authorizes use of existing monitoring data if those data are representative of each of three areas:

- (a) The location of the “maximum concentration increase from the proposed source”;
- (b) The location of the “maximum air pollutant concentration from existing sources”; *and*
- (c) The location of the “maximum impact area” (existing sources plus proposed facility).

There are also exceptions for two other situations that appear to be clearly inapplicable here – *i.e.*, where the source is in a “remote” area, or is in an area of “basically flat terrain.” *Id.*

MassDEP’s decision to rely on data from Lynn Woods contradicts these criteria and the statute itself. First, MassDEP claimed – in an analysis that was added to the permit documents after the comment period closed – that “PSD regulations allow proposed sources to use existing monitoring data in lieu of PSD preconstruction monitoring requirements for a pollutant if the source can demonstrate that its modeled ambient air impact is less than a *de minimis* amount (also called a significant monitoring concentration or SMC).” RTC at 18 (Exh. 3). But this is wrong. In *Sierra Club v. EPA*, 705 F.3d 458 (D.C. Cir. 2013), the D.C. Circuit recently found that, under the “extraordinarily rigid” language of the Clean Air Act, emissions levels below SMCs may *not* be used as a justification to avoid preconstruction monitoring. *Id.* at 467. Since then, EPA has issued a preliminary “Q&A” on this decision that confirms that preconstruction monitoring can be avoided only where there is existing alternative monitoring data that is “representative” of site conditions – which in turn brings us back to the “representativeness” requirements described above from the *NSR Manual* and the *Ambient Monitoring Guidelines*. MassDEP was wrong to assume that SMCs could justify its decision “to use existing monitoring data in lieu of PSD preconstruction monitoring requirements.”

Next, MassDEP contended that the Lynn Woods monitoring station, though located 5.9 miles from the site and situated in a nature preserve, was “representative” of the project site “due to its proximity.” RTC at 19 (Exh. 3). It also argued that the ambient concentrations at the Lynn Woods were “conservative.” *Id.* Yet MassDEP never even attempted to show that Lynn Woods was “representative” under the explicit and detailed criteria of the *Ambient Monitoring Guidelines*. In fact, its two primary arguments show the opposite. First, MassDEP claimed that Lynn is more “industrialized and densely populated” than Salem. *Id.* at 19. Yet there was no evidence cited to quantify this statement, and the claim elides the awkward fact that that the monitoring location is located *in a 2,200 acre park*, which is manifestly different from the SHR location in the heart of a densely settled Boston suburb.<sup>14</sup>

Second, MassDEP argued that the Lynn Woods data are conservative because Lynn Woods is closer to the General Electric Lynn and Wheelabrator Saugus facilities, two large sources that are some seven miles from the SHR site – an argument that sits uneasily beside MassDEP’s initial claim that Lynn Woods is representative “due to its proximity to the site.”<sup>15</sup> Yet even if one concedes that Lynn Woods stands in the shadow of GE and Wheelabrator, that Lynn Woods is much closer to these facilities than Salem Harbor is, and that *other* sources of criteria pollutants near the SHR site are insignificant,<sup>16</sup> these very facts turn out to be a double-edged sword. MassDEP’s argument suggests, at the very most, that Lynn Woods might be “the

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<sup>14</sup> Details about the Lynn Woods can be found at [www.flw.org](http://www.flw.org).

<sup>15</sup> According to MassDEP, these facilities “are located slightly less than 2 miles from the Lynn monitoring site but are located about 7 miles from the proposed SHR Project site. ... This is particularly significant given that these two major sources are located to the south-southwest of the monitoring site, which means that they could potentially influence the monitoring site concentrations during winds coming from the south or southwest, the predominant wind directions in this area.” RTC at 20 (Exh. 3).

<sup>16</sup> *Cf.* Final PSD Fact Sheet at 21 (listing smaller sources to the east, northeast, and southeast of Salem Harbor, which would make most of them closer to Salem Harbor than Lynn Woods).

location of the maximum air pollutant concentration from existing sources”<sup>17</sup> – but it actually *disproves* that this same location is either the “location of the maximum concentration increase from the proposed facility,” or the location of the “maximum combined impact area.” Both of these criteria must be met as well, presumably with data from multiple locations rather than the just single location MassDEP has proposed here.

The bottom line is that MassDEP cannot use SMCs to waive the pre-construction monitoring requirements, and it cannot simultaneously claim that Lynn Woods shows worst-case conditions at the site and worst-case conditions for emissions from sources located many miles from the site. In fact, MassDEP has not even attempted to make these findings, or to support them with analysis and evidence in the record. The matter should be remanded to MassDEP so that it can reconsider the issue, and so that it can make a record to support whatever decision the agency eventually comes to.

**B. MassDEP analyzed only SHR’s “significant” emissions, not *all* of its emissions – a clear error.**

MassDEP also clearly erred in failing to consider whether SHR’s “insignificant” emissions could contribute to a violation of a National Ambient Air Quality Standard (NAAQS). In its comment, EPA Region 1 said: “The use of Significant Impact Levels (SILs) alone as a screening tool may not be adequate. As was noted by EPA in a recent rulemaking and in a recent court decision considering that rule, there may be locations where the background concentration is close to the NAAQS. .... In these locations, a showing that the impacts of the proposed facility are below the relevant SIL may not be sufficient by itself to demonstrate that the proposed

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<sup>17</sup> Lynn Woods is of course miles away from *any* source. There is also no evidence in the record about “the predominant wind direction” being from the south-southwest. The Board need not make a finding on this point, but in fact the Logan airport windrose shows that the wind is typically out of the west-northwest in the winter months and from the southwest in the summer. *See* [www.windfinder.com/windstats/windstatistic\\_boston\\_logan\\_airport.htm](http://www.windfinder.com/windstats/windstatistic_boston_logan_airport.htm).

construction will not cause or contribute to a violation of NAAQS.” EPA Comment Letter, Encl. at 2 (Exh. 7). MassDEP responded by pointing out that the background concentrations were sufficiently low that an “insignificant” emission (below the SIL) from SHR would not a cause NAAQS violation even in combination with contributions from background and existing sources. RTC at 18 (Exh. 3). The actual facts, however, suggest that a NAAQS violation caused by “insignificant” SHR emissions *is* possible – and the statute is clear that MassDEP should have ruled out this possibility before issuing the permit.

Under Section 165(a)(3) of the Act, a proponent of a new facility must demonstrate that emissions from the facility will not “cause ... or contribute” to any NAAQS violations. 42 U.S.C. § 7475(a)(3); *see also* 40 C.F.R. § 51.166(k). Over the years EPA has proposed or promulgated significant impact levels (SILs) for each criteria pollutant, and has stated that a cumulative analysis of a source’s contribution to a possible NAAQS violation was unnecessary where the source’s emissions of the pollutant in question were below the SIL. *See, e.g., NSR Manual* at C.24. Moreover, even where the cumulative analysis was required, a source was not considered “culpable” for emissions below the SIL, where the facility emissions that actually caused a violation of a NAAQS were insignificant. *In re Prairie State Generating Co.*, 13 E.A.D. 1, 103-09 (EAB 2006). Yet this is no longer the law. In the same case that condemned the use of SMCs, the D.C. Circuit held that even insignificant emissions that cause or contribute to a NAAQS violation are prohibited by the Act, and it vacated and remanded an EPA rule on PM<sub>2.5</sub> that was to the contrary. *See Sierra Club*, 705 F.3d at 463-64 (authorizing use of SILs only to the extent they “do not allow the construction ... of a source to evade the requirements of

the Act,” but not where emissions below SILs “could cumulatively cause a violation of the NAAQS”).<sup>18</sup>

MassDEP’s SHR analysis is contrary to *Sierra Club*. Consider MassDEP’s cumulative analysis of SHR’s NO<sub>2</sub> emissions. The cumulative analysis was limited to whether there was a NAAQS violation at the receptor points where SHR’s contribution was “significant,” *i.e.*, above the NO<sub>2</sub> SIL of 7.5 µg/m<sup>3</sup> at that receptor point. RTC at 23 (Exh. 3). Looking *only* at the receptors where SHR’s contribution was significant, MassDEP found that the maximum NO<sub>2</sub> concentration from SHR and other sources was 166 µg/m<sup>3</sup>, which is only 22 µg/m<sup>3</sup> less than the 1-hour NAAQS for NO<sub>2</sub>. *Id.* at 23, 22. But what about receptors where SHR’s contribution was just below the SIL of 7.5 µg/m<sup>3</sup> – was there a NAAQS violation in these cases? The air modeling analysis approved by MassDEP does not say. Put differently, finding that SHR does not contribute “significantly” to any NAAQS violation is not the same thing as finding that SHR is not causing or contributing to a NAAQS violation at any receptor – which is the inquiry section 165 requires, and one that SHR’s data does not appear to answer.

The permit should be remanded to MassDEP so that it can determine whether SHR’s “insignificant” emissions may be causing a NAAQS violation at any receptor.

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<sup>18</sup> EPA has issued a “preliminary” Q&A which suggests that an applicant may show, as SHR has tried to do here, that “the proposed source’s ... impact does not *significantly* contribute to an existing violation of ... NAAQS” EPA, *Circuit Court Decisions on PM<sub>2.5</sub> SILs and SMCs: Questions and Answers*, at 3 (March 4, 2013) (emphasis in original). However, that approach contradicts *Sierra Club*, which left open the possibility that SILs could be used where it is clear that even the “insignificant” emission will not cause a NAAQS violation, but plainly condemned any use of SILs to preclude an analysis of whether an insignificant emission might nonetheless cause a NAAQS violation. The same Q&A states that cumulative impacts need not be analyzed at all where (a) the new source’s maximum emissions are below the SIL, and (b) ambient concentrations from other sources are far enough below the NAAQS that the “insignificant” emissions from the new source cannot possibly produce other NAAQS violations. *Id.* In this appeal Petitioners are contesting only the use of SILs to avoid culpability for a violation once the cumulative analysis has been undertaken, as described in the text. The Q&A is available at [www.epa.gov/nsr/documents/20130304qa.pdf](http://www.epa.gov/nsr/documents/20130304qa.pdf).

### **III. MassDEP improperly failed to limit VOC emissions.**

Apparently in response to comments on whether volatile organic compound (VOC) emissions limits reflected BACT, the final permit abruptly eliminated VOC emission limits altogether, on the ground that these emissions are below the significance level for emissions subject to BACT. RTC at 8 (Exh. 3). But this was incorrect: sources are required to apply BACT to all ozone precursors (including VOCs) where, as here, the sum total of these precursors exceeds 40 tons per year.

Specifically, 40 C.F.R. § 52.21(j)(2) provides: “A new major stationary source shall apply best available control technology for each regulated NSR pollutant that it would have the potential to emit in significant amounts.” And 40 CFR § 52.21(b)(23)(i) states that “[s]ignificant means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates: ... Ozone: 40 tpy of volatile organic compounds or nitrogen oxides.” Here VOC emissions are above 28 tpy, and nitrogen oxide emissions are 144 tpy. *See* Final Permit at 7 (Exh. 1) (NO<sub>x</sub>); Draft PSD Fact at 6 (Exh. 6) (VOCs). The plain language regulation requires control of ozone precursors of *whatever* type, provided these precursor emissions exceed 40 tpy, which is the case here. The failure to require application of BACT to VOCs was clear error.



## Conclusion

The petitioners respectfully request that the permit be remanded to MassDEP.

March 17, 2014

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STATEMENT OF COMPLIANCE WITH WORD LIMITATION

Pursuant to 40 C.F.R. § 124.19(d)(iv), this Amended Petition for Review complies with the word limit set by the Board. According to the word count function in Microsoft Word, this Amended Petition contains 7,337 words.

/s/ Wesley Kelman  
Wesley Kelman

CERTIFICATE OF SERVICE

I certify that on March 17, 2014 I have sent a copy of this amended petition for review, together with all attachments, by email to the counsel listed below, with hard copies to follow on March 18, 2014 by first-class mail.

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