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

In the Matter of:)	
Upper Blackstone Water Pollution Abatement District)))	NPDES Appeal No. 09-06
NPDES Permit No. MA 0102369)	
).	

RESPONDENT REGION 1'S MEMORANDUM IN OPPOSITION TO PETITION FOR REVIEW

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REGION 1'S MEMORANDUM IN OPPOSITION TO PETITION FOR REVIEW

The Upper Blackstone Water Pollution Abatement District ("the District") challenges a modification made by the New England Region of the U.S. Environmental Protection Agency ("EPA" or "the Region") to the District's National Pollutant Discharge Elimination System ("NPDES") permit imposing a numeric aluminum effluent limitation and associated monitoring requirements. The District contests the need for these permit conditions, arguing that the aluminum concentrations in its discharge do not have a reasonable potential to cause or contribute to a violation of state water quality standards. In its challenge to the permit modification, the District falls short of the threshold required for review and is unable to demonstrate clear error or abuse of discretion by the Region. Because the Region's determination was reasonable and necessary to ensure compliance with applicable water quality standards, review of the permit should be denied.

I. STATEMENT OF THE CASE

A. The Applicable Legal Standards

The issue on appeal is whether the Region established the appropriate numeric aluminum effluent limitation based on the applicable Massachusetts water quality criteria. The Clean Water Act ("CWA") provides for two types of effluent limitations to be included in NPDES permits: "technology-based" limitations and, if necessary, "water quality-based" limitations. *See* CWA §§ 301, 303, 304(b), 33 U.S.C. § 1311, 1313, 1314(b); 40 CFR Parts 122, 125, 131. Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant-reducing technology available and economically achievable for the type of facility being permitted.

See CWA §§ 301(b)(1)(A)-(B) and 304(b). Water quality-based effluent limits are designed to ensure that limitations as stringent as necessary to meet state water quality standards are included in permits, regardless of the technological and economic factors that inform the derivation of technology-based limitations. In particular, section 301(b)(1)(C) of the CWA requires achievement of "any more stringent limitation [than the technology-based requirements set forth in Section 301(b)(1)(A) and (B)], including those necessary to meet water quality standards...established pursuant to any State law or regulation...." Thus, NPDES permits must contain effluent limitations necessary to attain and maintain water quality standards, without consideration of the cost, availability or effectiveness of treatment technologies. See U.S. Steel Corp. v. Train, 556 F.2d 822, 838 (7th Cir. 1977); In re Westborough and Westborough Treatment Plant Board, 10 E.A.D. 297, 312 (EAB 2002); In re City of Moscow, Idaho 10 E.A.D. 135, 168 (EAB 2001); In re New England Plating Co., 9 E.A.D. 726, 738 (EAB 2001); In re City of Fayetteville, Ark., 2 E.A.D. 594, 600-601 (CJO 1988).

Water quality standards under the CWA consist of three elements, two of which are relevant here: (1) designated "uses" of the water, such as for public water supply, aesthetics, recreation, propagation of fish, or agriculture; and (2) "criteria," which specify the amounts of various pollutants that may be present in those waters without impairing the designated uses, expressed either in numeric form for specific pollutants or in narrative form. See CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); see 40 CFR §§ 131.10 and 131.11.

¹ The third component of the overall water quality standards program is the antidegradation policy, which is not at issue here.

Under the federal regulations implementing the NPDES program, permit issuers are required to determine whether a given point source discharge "causes, has the reasonable potential to cause, or contributes to" an exceedance of the narrative or numeric criteria set forth in state water quality standards. See 40 CFR § 122.44(d)(1)(i). If a proposed discharge is found to cause, have the reasonable potential to cause, or contribute to an exceedance of a numeric or narrative state water quality criterion, the permit must contain effluent limits as necessary to achieve state water quality standards. See 40 CFR §§ 122.44(d)(1), 122.44(d)(5) (providing in part that a permit must incorporate any more stringent limits required by CWA § 301(b)(1)(C)).

Section 401(a)(1) of the CWA precludes issuance of a federal permit unless the state where the discharge originates, in this case Massachusetts, certifies that the discharge will comply with state water quality standards, or waives certification. Section 401(a)(2) of the CWA directs EPA to consider the views of a downstream state concerning whether a discharge would result in violations of that state's water quality standards. When a point source discharge affects a downstream state, in this case Rhode Island, EPA must also condition the NPDES permit to ensure compliance with the water quality standards of the downstream state. See CWA § 401(a)(2), 40 CFR § 122.44(d)(4). See also CWA § 301(b)(1)(C); 40 CFR § 122.4(d) (prohibiting issuance of a NPDES permit "[w]hen the imposition of conditions cannot ensure compliance with applicable water quality requirements of all affected States."); 40 CFR § 122.44(d)(5).

B. Factual Background

1. The District and its Discharge

The District owns and operates a wastewater treatment plant in Millbury, Massachusetts, which is engaged in the collection and treatment of domestic, commercial, and industrial wastewater from the City of Worcester, as well as several other communities in central Massachusetts. *See Statement of Basis ("SOB")* at 3; Ex. 1 (AR 7). This large facility has a permitted average discharge flow of 56 million gallons per day (mgd) and discharges near the headwaters of the Blackstone River. *Id.* Because of the large volume of its discharge and location near the headwaters of the River, the District's effluent dominates the river flow during low flow conditions. The 7Q10 flow of the River (the lowest mean flow for seven consecutive days to be expected once in ten years) is only 4.4 mgd where the discharge occurs. *See Id.* at 6. Therefore, under 7Q10 receiving water conditions and permitted flow conditions, the authorized discharge is thirteen times greater than the receiving water flow.

The District is nearing completion of a major upgrade to its facility. *Id.* The upgrade will enable the District to handle a higher peak flow volume, thereby allowing it to provide primary treatment for peak flows that would otherwise be discharged from the nearby Worcester combined sewer system. *Id.* Advanced treatment will have capacity to handle an hourly peak flow up to 120 mgd, while primary treatment will have an hourly peak flow capacity up to 160 mgd. *Id.*

The Blackstone River is an interstate water with its headwaters located in Worcester, Massachusetts. *Id.* at 5. It flows south into Rhode Island where it discharges

into the Seekonk River, which, in turn, flows into the Providence River. *Id.* The Providence River flows into Narragansett Bay. *Id.*

The discharge of aluminum into surface water can be toxic to aquatic life. *Id.*The Region determined that the District's discharge of aluminum into the Blackstone

River has the potential to cause or contribute to a violation of Massachusetts' water

quality standards, specifically the Commonwealth's criterion for aluminum, necessitating

a numeric effluent limitation and associated monitoring requirements for aluminum in the

District's NPDES permit.

2. Procedural History

On August 22, 2008, EPA reissued a NPDES permit authorizing the discharge of treated effluent from the District's wastewater treatment plant to the Blackstone River ("Permit"). The Permit included monthly aluminum monitoring and reporting requirements, but did not contain a numeric effluent limitation for aluminum. The District and several other parties filed petitions for review of various conditions of the Permit.² With regard to appeals related to aluminum, the Northern Rhode Island Chapter 737 of Trout Unlimited ("Trout Unlimited") argued that EPA should have established an effluent limitation for aluminum in the final Permit based on data suggesting that the aluminum concentrations in the District's effluent were at levels believed to be harmful to the fish populations in the Blackstone River. See TU Pet. at 2 (AR 23). In its appeal of the original Permit, the District challenged the conditions requiring monitoring and reporting of aluminum in its effluent. See District's Supplemental Petition, dated September 15, 2008, at 55-56 (AR 26). After reevaluating the District's aluminum

² These petitions for review have been docketed as EAB NPDES appeal numbers 08-11 (the District), 08-12 (MA DEP), 08-13 (Conservation Law Foundation), 08-14 (Trout Unlimited), 08-15 (Town of Holden), 08-16 (Town of Millbury), 08-17 (Cherry Valley Sewer District), and 08-18 (City of Worcester).

effluent data and other relevant information as a result of the petitions, the Region concluded that the District had reasonable potential to cause or contribute to a violation of state water quality standards, requiring the imposition of an aluminum effluent limitation in the Permit. *See SOB* at 4, Ex. 1 (AR 7).

On January 30, 2009, the Region issued a draft permit modification of the District's Permit ("Draft Permit Modification"), which proposed to add a numeric effluent limitation and associated monitoring requirements for aluminum. See Draft Permit Modification at 2 (AR 6). Comments were received from the District and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration. After evaluating the comments, the Region issued a final permit modification ("Permit Modification") including a numeric chronic aluminum effluent limitation of 87 ug/l and weekly monitoring requirements. See Response to Comments ("RTC") at 1, Ex. 2 (AR 16). The Massachusetts Department of Environmental Protection ("MassDEP") waived state certification of the Permit Modification pursuant to Section 401(a) of the CWA and 40 CFR § 124.53(a). See MassDEP Waiver Letter, April 13, 2009 (AR 4). The Region signed the Permit Modification on April 15, 2009 and sent it to the District on April 16, 2009. See Final Permit Modification, Ex. 3, (AR 1); Letter from EPA to District Transmitting the Final Permit Modification (AR 2). The Permit Modification became effective on June 1, 2009. The District timely filed a petition for review of the Permit Modification with the Board. As a result of the District's appeal, the contested conditions of the modification are stayed pursuant to 40 CFR § 124.60.

Given that the Permit Modification included a numeric aluminum effluent limitation and weekly monitoring requirements, the Region withdrew the monthly monitoring and reporting requirements in the Permit and moved the Board to dismiss as moot the District's and Trout Unlimited's petitions for review related to the aluminum requirements in the Permit. See Notice of Withdrawal of Contested Condition (May 11, 2009); Region 1's Motion to Dismiss as Moot Petitions for Review of Permit Requirements Related to Total Aluminum (May 11, 2009).

3. Applicable Massachusetts and Rhode Island Water Quality Standards

Because the Blackstone River constitutes an interstate water, EPA considered the water quality standards of both Massachusetts and Rhode Island in determining the potential for the District's discharge of aluminum to cause or contribute to a violation of state water quality standards in the receiving water. See SOB at 5-6. The Massachusetts Surface Water Quality Standards require all surface waters to be free from pollutants in concentrations that are toxic to humans or aquatic life. 314 CMR § 4.05(5)(e), Ex. 4 (AR 36). Specifically, under the Massachusetts standards, "for pollutants not otherwise listed in 314 CMR 4.00, the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 published by EPA pursuant to Section 304(a) of the [CWA], are the allowable receiving water concentrations for the affected waters, unless [MassDEP] either establishes a site specific criterion or determines that naturally occurring background concentrations are higher." Id. Aluminum is not otherwise listed in 314 CMR 4.00, and Massachusetts has neither adopted site-specific criteria for aluminum, nor made a determination that the naturally occurring background concentrations for aluminum are higher than the national recommended criteria in the Blackstone River. Accordingly, EPA's National Recommended Water Quality Criteria, with a freshwater chronic criterion of 87 ug/l for aluminum, apply in Massachusetts. Similarly, the Rhode

Island Water Quality Regulations set forth a freshwater chronic criterion of 87 ug/l for aluminum. *Rhode Island Water Quality Regulations*, Rule 8, Appendix B (AR 37).

Both Massachusetts and Rhode Island water quality standards require water quality criteria to be met even during severe hydrological conditions, *i.e.*, periods of critical low flow when the volume of the receiving water is able to provide relatively little dilution. In Massachusetts, NPDES permit limits for discharges to rivers and streams must be calculated based on the "7Q10," or "the lowest mean flow for seven consecutive days to be expected once in ten years." *See* 314 CMR § 4.03(3). Similarly, in Rhode Island, "water quality standards apply under the most adverse conditions," meaning "the acute and chronic aquatic life criteria for freshwaters shall not be exceeded at or above the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years (7Q10)." *See Rhode Island Water Quality Regulations*, Rule 8.E.

4. Reasonable Potential Analysis and Establishment of Effluent Limit

In determining whether a discharger has the reasonable potential to cause or contribute to a violation of state water quality standards, EPA considers existing controls on point and nonpoint sources of pollution, pollutant concentrations and variability in the effluent and receiving water as determined from a permittee's reissuance application, discharge monitoring reports, state and federal water quality reports, and, where appropriate, the dilution of the effluent in the receiving water, in accordance with 40 CFR § 122.44(d)(1)(ii). If EPA concludes, after using the procedures in 40 CFR § 122.44(d)(1)(ii) and evaluating a permittee's toxicity testing data and any other relevant and available information, that a discharge causes or has the reasonable potential to cause

or contribute to an instream excursion above numeric criteria in applicable state water quality standards, EPA must include effluent limitations in the NPDES discharge permit in order to ensure that the water quality standards in the receiving water are met. 40 CFR § 122.44(d)(1)(v).

In determining whether the District's discharges of aluminum have the reasonable potential to cause or contribute to a violation of the Massachusetts water quality chronic criterion for aluminum, the Region projected the concentration of the pollutant in the receiving water downstream from the District under critical (7Q10 flow) stream conditions. *SOB* at 6. As mentioned above, during low flow periods, the District's effluent dominates the flow in the Blackstone River near the facility. *Id.* The dilution factor applied to the District's discharge is 1.1, which accounts for the 7Q10 flow in the receiving water at the point of discharge (4.4 MGD = 6.8 cfs) and the District's annual average design flow (56 MGD = 86.7 cfs). *Id.* at 6, Appendix B. Given that the receiving water provides minimal dilution to the District's effluent under critical low flow conditions, the Region's use of data collected during typical low flow periods constitutes the most appropriate approach for assessing the downstream effects of the District's aluminum discharges. *Id.* at 6, 8.

As part of its reasonable potential analysis, the Region considered both the ambient aluminum concentrations in the Blackstone River directly upstream from the District, as well as the average aluminum concentrations in the District's discharge. In establishing the ambient aluminum concentrations, the Region used the results of analyses conducted on samples of the receiving water collected upstream, but in close proximity to the discharge. The District collects these ambient samples for use as

dilution water in its whole effluent toxicity ("WET") tests. The Region reviewed the available ambient data collected during typical low flow periods (i.e., June through October) from 2005 through 2008 and averaged the results collected during the two months during which the River had the lowest monthly average flows (July 2007 and October 2007) *Id.* at 6, Appendix A. The average of these ambient data points was 109 ug/l, which the Region used as the background aluminum concentration. *Id.* at 6.

In order to project the instream concentration of aluminum downstream from the discharge, the Region used the District's aluminum effluent data, which were the results of aluminum analyses performed on samples of the District's effluent in conjunction with its WET tests, conducted during typical low flow months (again, June through October) for the years 2005 through 2008. *Id.* at 6, Appendix A. Specifically, the Region averaged the aluminum effluent values from the District's WET test data for June 2005, July 2005, October 2005, October 2006, July 2007, October 2007, and July 2008. *Id.* The July 2006 WET data were not available to the Region when it developed the aluminum effluent limitation in the Draft Permit Modification. *Id.* For the aluminum effluent data points presented in the District's WET reports during these months as non-detect, the Region assigned them a value of 100 ug/l. *See RTC* at 2. The Region calculated the average concentration of aluminum in the District's discharge to be 127 ug/l during the typical low flow months noted above.^{3, 4} *Id.* at 7.

³ The U.S. EPA NPDES Permit Writers' Manual recommends that EPA determine a discharger's reasonable potential to cause or contribute to a violation of state water quality standards by using the maximum concentration of a pollutant in the discharger's effluent or a statistically projected worse-case value. See U.S. EPA NPDES Permit Writers' Manual, Chapter 6.3.2 (U.S. EPA, December 1996) (EPA-833-b-96-003). As explained in the Statement of Basis, the Region did use the maximum concentration of aluminum detected in the District's WET tests to project the concentration of aluminum in the receiving water immediately downstream from the District's discharge. SOB at 7. The maximum aluminum concentration in the District's discharge was well in excess of the Massachusetts chronic aluminum criterion of 87 ug/l, demonstrating that the District has a reasonable potential to cause or contribute to an

The elevated concentration of aluminum in the receiving water upstream of the District's discharge exceeds the Massachusetts chronic instream aluminum criterion of 87 ug/l even before any additional inputs of aluminum from the District. Id. at 7. Moreover, the District's aluminum effluent data demonstrated that the average concentration of aluminum in the District's discharge during typical low flow months exceeds the Massachusetts chronic criterion. Under these circumstances, and based on the minimal dilution afforded to the District's effluent by the receiving water under critical low flow conditions, the District's discharge clearly has a reasonable potential to cause or contribute to a violation of state water quality standards. Id. This warranted the imposition of a monthly average aluminum effluent limitation equal to the Massachusetts chronic criterion of 87 ug/l for aluminum, in accordance with the requirements of 40 CFR §§ 122.44(d)(i), (iii). Id. at 8. The average monthly aluminum limit of 87 ug/l also ensures adequate protection of the Rhode Island water quality standards further downstream from the District's discharge, as the Rhode Island standards also contain a chronic aluminum criterion of 87 ug/l. See Id.

Finally, EPA included weekly monitoring and reporting requirements in the Permit Modification to provide frequent information about the aluminum concentrations in the District's discharge and in order to adequately assess compliance with the limitation. See Id.

excursion of state water quality standards downstream. Id. Nevertheless, consistent with common Region 1 practice, the Region decided to focus on the average aluminum concentration in the District's effluent in its analyses of the District's reasonable potential to cause or contribute to a violation of state water quality standards. See SOB at 7; RTC at 2. The Region's approach provided the District with the benefit of incorporating its lower aluminum effluent levels in the Region's analysis.

⁴ In the Statement of Basis, the Region indicated that the average aluminum concentration in the District's effluent was 127 ug/l, when in fact the average aluminum concentration during the typical low flow months noted above is 117 ug/l. The Region's error is harmless since the District's average aluminum effluent concentration is still well above the Massachusetts chronic criterion of 87 ug/l for aluminum.

II. ARGUMENT

A. The Region Established the Appropriate Chronic Aluminum Effluent Limitation in the Permit Modification Necessary to Achieve State Water Quality Standards

The District argues that the Region erred in concluding any limit was needed for aluminum because it selectively used incomplete and incorrect data from the District's WET reports. See Dist. Pet. at 4-9. Specifically, the District claims that the Region used selective data with regard to flow conditions, erred in assigning values to non-detect data points equal to 100 ug/l, and should have excluded a high aluminum effluent data point from its analysis because the data were collected during an alleged "plant upset." See Id. The District's arguments are unpersuasive. Not only was the Region's approach to establishing the monthly average aluminum effluent limitation in the Permit Modification reasonable, but even if the Region evaluated the data in the manner proposed by the District with regard to flow conditions and detection limit values, the Region would have reached the same conclusion, namely that it must impose an aluminum effluent limit of 87 ug/l in the Permit Modification to ensure that the District does not cause or contribute to a violation of state water quality standards. The District failed to raise during the comment period its argument that data from a sample collected during an alleged "plant upset" should be excluded from the Region's analysis. Further, the District did not provide adequate support for excluding the data in its Petition. Accordingly, the Region did not err or abuse its discretion in establishing an average chronic aluminum effluent limitation of 87 ug/l in the Permit Modification.

1. <u>The Chronic Aluminum Effluent Limitation is Appropriate Based on the District's Whole Effluent Toxicity Data under Various Flow Conditions</u>

The District argues that the Region erred in setting the limit because it used selective data with regard to ambient river flow conditions from the District's WET reports in establishing the limit. See Dist. Pet. at 4-6. The District specifically challenges the Region's assertion in its Response to Comments that it evaluated only WET data taken during actual low flow conditions in setting the aluminum limit. See Id. at 5. The Region appropriately set the aluminum effluent limit of 87 ug/l in the Permit Modification based on its analysis of the District's WET test data taken during typical low flow months (i.e., June through October), a process that the Region accurately described in the Statement of Basis accompanying the Draft Permit Modification. See SOB at 6, Ex. 1. The Region acknowledges that, due to an internal miscommunication among the permit team, it mischaracterized this aspect of its analysis in the Response to Comments by stating that it checked the actual flow for the dates on which the WET test samples were collected during typical low flow months and used only data collected during actual low flow conditions in establishing the aluminum limit. See RTC at 2, Ex. 2. This error in the Response to Comments forms the basis for the Petitioner's argument that the Region selectively used the District's WET data in its development of the aluminum effluent limit. See Dist. Pet. at 5. The Region's actual approach, described in the Statement of Basis, supports the conclusion that the District needs an aluminum limit of 87 ug/l to ensure its discharge does not cause or contribute to a violation of state water quality standards. Furthermore, as is detailed below, even had the Region undertaken to. further screen data based on an evaluation of actual river flows, the resultant calculations lead to the same conclusion.

As explained in the Statement of Basis, in developing the District's aluminum limitation, the Region used the District's WET data from samples collected during the typical low flow months of June through October for the years 2005 through 2008. *See SOB* at 6, Appendix B. Specifically, the Region evaluated the District's WET data from June 2005, July 2005, October 2005, October 2006, July 2007, October 2007, and July 2008 in determining whether the District's discharge has the reasonable potential to cause or contribute to an excursion above the state water quality criterion for aluminum in the downstream receiving water. *See SOB* at 6, 7, 10. Based on the ambient aluminum concentrations directly upstream from the District (calculated by the Region to be 109 ug/l), the minimal dilution afforded to the District's effluent by the receiving water under critical low flow conditions, and the average concentration of aluminum in the District's effluent (calculated by the Region to be 127 ug/l, *see* footnote 4, *supra*), the Region concluded that reasonable potential exists for the discharge to cause or contribute to excursions above the Massachusetts chronic aluminum criterion of 87 ug/l in the

⁵ In conducting this analysis, the Region did not include three data points taken from WET tests conducted during typical low flow periods. The Region inadvertently omitted the WET data for samples taken on October 10, 2005 because this WET test was one of two conducted in October 2005 (the Region only used the October 31, 2005 data), and because there are rarely two WET tests conducted in the same month, the Region did not look beyond the October 31, 2005 data point. The Region also did not include the October 24, 2008 WET data because, while the Region received the WET report containing these data on November 26, 2008, the report was being processed in a different office than the permitting office, so the permit writer was unaware of these data at the time she was evaluating the appropriate aluminum effluent limit for the District's discharge and preparing the Draft Permit Modification. (The Region inaccurately explained in the Response to Comments it excluded these data because they were not collected during actual low flow conditions.) In addition, the Region did not use the WET data collected in July 2006 because, as the Region explained in the Statement of Basis, these data were unavailable to the Region at the time it issued the Draft Permit Modification since the District did not submit metals data to the Region with its July 2006 WET Report. See SOB at 6. However, even if the Region had included these additional three data points in its analysis, the Region still would have concluded that the Permit Modification must include an aluminum effluent limit of 87 ug/l to ensure that the District does not cause or contribute to violations of state water quality standards, as is demonstrated by the calculations set forth in Scenario B of Table 1, attached hereto as Exhibit 6. Thus, the exclusion of these data points amounts to harmless error.

downstream receiving water. See SOB at 7, Appendix A; Table 1, Ex. 6, Scenario A. Accordingly, the Region set the average monthly aluminum effluent limit in the Permit Modification at the chronic criterion of 87 ug/l, as required by the Massachusetts water quality standards, to ensure that the District's discharge will not cause or contribute to excursions above the criterion in the downstream receiving waters. See 314 CMR § 4.05(5)(e).

In its Petition, the District seizes on the Region's mischaracterization in the Response to Comments of its approach in selecting data points (i.e., the Region's misstatement that it cross-checked WET data from the typical flow period with actual flows in the receiving water on the dates the tests were conducted). See Dist. Pet. at 5. According to the District, this misstatement supports that the Region was "selective" in its evaluation of data. Id. While the Region regrets this mischaracterization, it amounts to harmless error because the actual approach undertaken by the Region (use of data from all typical low flow months, except as explained in footnote 4, supra) supports the conclusion that the Permit must include an effluent limit of 87 ug/l to ensure water quality standards are met.

Even if the Region had undertaken the analysis erroneously described in the Response to Comments, the Region would have reached the same conclusion.

Considering only the data from effluent samples collected under "actual low flow

⁶ In the Region's analysis for determining the average aluminum effluent concentration in the District's discharge, the Region assigned a value of 100 ug/l to non-detect readings in the District's WET reports. As is discussed in more detail *infra* at Section II.A.2, the District requested in its comments that the Region either exclude the non-detect data points from its analysis or assign a value equal to 50 ug/l to these data points. As the Region explained in its response to comments, even when the non-detect data points are excluded or assigned a value of 50 ug/l, the District's aluminum effluent concentration equals or exceeds 87 ug/l.

conditions" during the typical low flow months from 2005 through 2008, as the Region stated it had done in the Response to Comments, the District's average aluminum effluent value would range between 90 ug/l and 120 ug/l (depending on the values assigned to non-detect data). See Table 1, Ex. 6, Scenario C. Moreover, looking at the data collected during "actual low flow conditions" during any months from 2004 through 2008, as the District proposes in its Petition (Dist. Pet. at 8), the District's average aluminum effluent value would range between 87 ug/l and 106 ug/l (depending on the values assigned to non-detect data). See Table 1, Ex. 6, Scenario D. Accordingly, the District's average aluminum effluent concentrations are consistently at or exceeding the chronic criterion of 87 ug/l under any of the aforementioned scenarios, regardless of whether data are screened based on actual instream flows. See Table 1, Ex. 6.

The District's WET data clearly support the Region's determination that the aluminum concentration in the District's discharge has a reasonable potential to cause or contribute to a violation of the Massachusetts chronic criterion of 87 ug/l for aluminum. Accordingly, the Region appropriately set the aluminum effluent limit at 87 ug/l in the District's Permit Modification, and its mischaracterization in the Response to Comments amounts to harmless error under the circumstances. *See In Re Dominion Energy Brayton Point, LLC*, 13 E.A.D. at 49-50 (September 27, 2007) (finding that errors having no

⁷ The Region never established a flow threshold that constitutes "actual low flow conditions." For purposes of demonstrating the results of screening data points based on actual instream flow conditions, however, the Region used 508 cfs in the calculations presented in Table 1. This value represents the flow the District incorrectly understood the Region to have accepted as representing low flow conditions. *See Dist. Pet.* at 8.

⁸ In comments submitted on the Draft Permit Modification, the District argued that the Region should have used WET data collected under all flow conditions from 2004 through 2008, not simply data collected during typical low flow periods. *See District's Comments* at 3 and Exhibit B, Ex. 5 (AR 18) (arguing that the "complete data set" results in an average aluminum effluent concentration of 92 ug/l). In response, the Region pointed out that the District's own calculations supported the conclusion that use of all data (including data collected during typical high flow months of the year) results in an average effluent concentration that exceeds the chronic criterion. *See RTC* at 2; Table 1, Ex. 6, Scenario E; *Dist. Comments* at 2-3.

bearing on the ultimate decision by the permit issuer are harmless and not typically subject to Board review); *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 780-82 (Adm'r 1992) (holding that reliance on invalid reasoning is harmless error where permit issuer also relied on other reasonable grounds for decision). Thus, the Region did not err or abuse its discretion in establishing the aluminum effluent limit of 87 ug/l in the Permit Modification.

2. Assignment of Values of 50 ug/l or 100 ug/l to Non-Detect Data Points, or Excluding These Data Points Altogether, Supports the Chronic Aluminum Effluent Limitation in the District's Permit Modification

The District argues that the Region erred in assigning values of 100 ug/l to non-detect data points in the District's WET reports. See Dist. Pet. at 7. In the District's WET test results for the period from 2004 through 2008, three aluminum effluent data points were presented as non-detect. See Upper Blackstone Water Pollution Abatement District WET Test Reports (AR 28). Rather than assigning 100 ug/l to the non-detect data, the District claims that it would have been more appropriate for the Region either to exclude the non-detect data points from its calculations or to assign these data values equal to one-half the detection limit (50 ug/l). See Id. The Board should reject the District's argument because either excluding the non-detect data or assigning them values equal to 50 ug/l reveals that the District's discharge still has reasonable potential to cause or contribute to a violation of state water quality standards.

In response to the District's comments on the Draft Permit Modification that the Region's use of the 100 ug/l value was overly conservative, the Region reexamined its calculations of the average aluminum concentration in the District's discharge by

⁹ In these WET reports, the District also reported specific aluminum values below 100 ug/l for numerous samples. *See District WET Test Reports* (AR 28).

excluding non-detect samples and by assigning them a value of 50 ug/l. See RTC at 2. In both cases, the results demonstrate that the average aluminum concentration in the District's discharge equals or exceeds the Massachusetts chronic criterion of 87 ug/l for aluminum, making the aluminum effluent limit of 87 ug/l the appropriate limitation to ensure that the District's discharge does not cause or contribute to a violation of water quality standards. See RTC at 2. See also Table 1, Ex. 6, Scenarios A-E. The District's WET data, irrespective of the detection limit values employed, clearly support the Region's determination that the aluminum concentration in the District's discharge has a reasonable potential to cause or contribute to violations of the Massachusetts chronic criterion of 87 ug/l for aluminum. The Board should deny review of the Region's conclusions regarding data reported as "non-detect."

3. The Region Appropriately Included the July 2007 WET Data in its Analysis of the District's Reasonable Potential to Cause or Contribute to Violations of the Chronic Criterion for Aluminum in the Massachusetts Water Quality Standards

The District argues, for the first time on appeal, that the Region should have excluded the July 2007 WET data (with an aluminum effluent value of 344 ug/l) from its analysis in setting the aluminum effluent limit because, according to the District, the data were from a sample collected during a "plant upset." *See Dist. Pet.* at 6, Ex. C. The Board should reject the District's argument that the Region needed to exclude the July 2007 data from its analysis in setting the aluminum effluent limitation because the District failed to raise this argument during the comment period. On the merits, the District provides no basis for its claim of a plant upset and offers no explanation of how the upset resulted in increased aluminum concentrations in its effluent.

The District failed to raise the argument that the Region should have excluded the July 2007 aluminum effluent data from its analysis in its comments on the Draft Permit Modification. In fact, not only did the District fail to make this argument during the comment period, but the District in fact commented that the Region erred by not using all data (including the July 2007 data point). See Dist. Comments at 3 and Ex. B, Ex. 5. The District cannot raise brand new arguments on appeal that did not appear in any comments on the Draft Permit Modification. See In re Desert Power Electric Cooperative (Bonanza), 14 E.A.D. ___, 7 n. 3 (EAB 2008) (holding that reasonably available issues and arguments must be presented with specificity during the comment period in order to be preserved for the Board's review); In re Kendall New Century Dev., 11 E.A.D. 40, 55 (EAB 2003); In re Steel Dynamics, Inc., 9 E.A.D. 169, 230 (EAB 2000); In re Maui Elec. Co., 8 E.A.D. 1, 9 (EAB 1998). Accordingly, the District's argument for exclusion of the July 2007 data in setting the aluminum effluent limitation was not preserved for Board review.

If the Board reaches this argument, however, it should uphold the Region's use of the July 2007 data in developing the District's aluminum effluent limit. In its petition, the District makes no effort to demonstrate how the circumstances surrounding its claimed "upset" qualify as an "exceptional incident" under the definition of an upset in 40 CFR § 122.41(n). The District's only apparent support for its claim is a copy of the cover letter transmitting its July 2007 discharge monitoring report (DMR), as well as excerpts from the DMR. *See Dist. Pet.* at Ex. C. The letter simply offers the conclusory and vague statement that "changing weather conditions" caused a "plant upset" on July 9, 2007, the date on which the District collected its effluent for WET testing from which the

aluminum value of 344 ug/l was obtained. See Dist. Pet. at 6, Ex. C. The excerpts from the July 2007 DMR reveal that there were only .21 inches of rain on July 9, 2007 and similar (.22, .37 in.) and substantially higher (.43, .48, .63, .93 in.) levels of rain on other days with no reported upsets. See Dist. Pet. at Ex. C. Furthermore, the DMR excerpts do not show an unusually high effluent flow on July 9, 2007 to indicate that a short period of heightened rainfall caused a surge in the District's discharge. See Id. Even if the District experienced a plant upset on July 9, 2007, it has utterly failed to provide any explanation in its Petition for why the upset resulted in increased aluminum levels in the District's discharge. Given the District's vague and terse explanation for its plant upset, the lack of any clear and exceptional aberrations in weather conditions that likely would have resulted in a plant upset, and the absence of any explanation why such an upset would have led to the high aluminum concentration, the District has failed to meet its burden of demonstrating that the Region erred or abused its discretion by using the July 2007 data in establishing the aluminum effluent limit in the Permit Modification. Review should be denied.

B. The Region Appropriately Set the Aluminum Effluent Limit Equal to the Massachusetts Chronic Aluminum Criterion, Given that the District Failed to Demonstrate that the Background Concentrations of Aluminum in the Blackstone River are Naturally Occurring

In its comments on the Draft Permit Modification, the District argued that the ambient levels of aluminum in the Blackstone River directly upstream from the District are naturally occurring based on comparison of WET test data from an ambient sample collected directly upstream from the District with WET test data from a sample of the District's effluent. Based on these assertions, the District contended that the alleged naturally occurring background concentration of aluminum should be considered the

allowable receiving water concentration. Rather than confront the Region's responses on these points, the District now inappropriately seeks to supplement its Petition with data collected by the Worcester Water Department at the Kendall Transfer Station and select tributary sampling points located seven miles upstream from the District. See Dist. Pet. at 9-13. On the merits, the District utterly fails to demonstrate that the ambient levels of aluminum in the receiving water are naturally occurring. Accordingly, the Board should reject the District's arguments.

The District claimed in its comments, and reasserts in its Petition, that the ambient aluminum concentrations directly upstream from the District's discharge are naturally occurring because the District's WET test data show that ambient aluminum concentrations often exceed the aluminum effluent concentration in the District's discharge and its aluminum effluent values show a correlation with ambient conditions. *See Dist. Comments* at 3; *Dist. Pet.* at 9-10. However, as the Region pointed out in its Response to Comments, the District failed to offer any explanation as to why these assertions demonstrate that the ambient aluminum concentrations in the Blackstone River directly upstream from the District are naturally occurring. *See RTC* at 2-3.

The District's argument has several fatal flaws. First, under the Massachusetts water quality standards, EPA's *National Recommended Water Quality Criteria* are the allowable receiving water concentrations for affected waters unless MassDEP determines that naturally occurring background concentrations are higher than the national recommended criteria. *See* 314 CMR § 4.05(5)(e). MassDEP has not done so here. Therefore, irrespective of the merits of the District's contentions, EPA's national

¹⁰ As noted *supra* at Section I.B.3, the Massachusetts Water Quality Standards incorporate EPA's national recommended criteria except where the state determines that higher instream concentrations are "naturally occurring."

recommended chronic aluminum criterion of 87 ug/l remains the applicable receiving water concentration. Second, since acid rain is caused almost entirely by human activity, the District cannot avail itself of the argument that all aluminum entering the Blackstone River as a result of acid rain coming into contact with soils or rock is "naturally occurring." Furthermore, the District failed to present any site-specific data or analysis indicating that its claimed theory (i.e., acidification and the consequent release of aluminum to surface waters) is in fact occurring in this watershed. Third, a "correlation" between aluminum levels in the District's effluent and the sampling location immediately upstream from the District, even if one exists, does not demonstrate that the instream aluminum levels are "naturally occurring." Indeed, the comparison seems irrelevant since the District does not draw water into its facility from this upstream location.

Finally, the District fails to address the Region's point that there are numerous potential anthropogenic sources of aluminum upstream of the ambient sampling location in the Blackstone River. See RTC at 3.

The District cannot prevail with its new argument that data from samples collected in the upper watershed by the Worcester Water Department (seven miles upstream of the District) demonstrate that the aluminum concentrations collected in the River immediately upstream of its discharge are naturally occurring. As a preliminary matter, the District has not properly preserved arguments related to these data. In its Petition, the District offered data from samples collected at the Kendall Transfer Station (appended to the District's Petition as Ex. K), as well as data from samples collected

¹¹ In support of its arguments, the District in its Petition references a study by Shacklette, Hansford T. and Joshepine G. Boerngen, *Element Concentrations in Soils and Other Surficial Materials of the Coterminus United States*, USGS Professional Paper 1270 (2007). Not only did the District fail to provide a copy of the study, it also did not reference the study in its comments on the Draft Permit Modification. The paper, therefore, is not appropriately part of the record for this proceeding.

farther upstream at select tributaries (appended to the District's Petition as Ex. J). The data from samples collected at the Kendall Transfer Station were clearly available to the District during the public comment period, as they were collected from 2004 through 2008. 12 In addition, the samples were collected by the City of Worcester, which is the District's largest member community. Accordingly, the Board should reject the District's belated attempt to supplement its arguments with the Kendall Transfer Station data. See Desert Power, 14 E.A.D. at 7 n. 3 (finding that information reasonably ascertainable prior to the end of the comment period must be submitted below in order to be preserved for Board review); Kendall New Century, 11 E.A.D. at 55; Steel Dynamics, 9 E.A.D. at 230; Maui Elec. Co., 8 E.A.D. at 9-10. The data from samples collected in the tributaries should also be excluded from consideration, since they were not even generated until after the Region issued the permit modification. 13 See In re Dominion Energy Brayton Point, LLC, 12 E.A.D. 490, 519-529 (EAB 2006) (holding that documents created after the Region issued the final permit should not be part of the administrative record). The District has no basis for introducing this post-decisional information now.

If the Board reaches this argument, however, it should reject the District's contention that the Worcester Water Department data demonstrate that ambient levels of aluminum directly upstream from the District are naturally occurring. Even if acid rain were the cause of the aluminum levels in the upper watershed and could be considered naturally occurring, the data presented by the District fail to show that the ambient aluminum concentrations in the upper watershed are the only source of aluminum in the

¹² The comment period on the Draft Permit Modification extended from January 30, 2009 through February 28, 2009.

¹³ The data presented in Exhibit J were from samples collected on April 17, 2009. The Region signed the Permit Modification on April 15, 2009.

Blackstone River directly upstream of the District's discharge. Further, in the District's efforts to compare the ambient aluminum concentrations in the upper watershed to those in the River directly upstream of the District's discharge, it has utterly failed to show a relationship between the data sets that supports its theory that the ambient aluminum levels immediately upstream of the District's facility are naturally occurring.

First, the District's argument that aluminum levels directly upstream of the District's facility are naturally occurring based on the upper watershed data completely ignores the many potential sources of aluminum that exist in the seven miles between the Kendall Transfer Station sampling location and the ambient WET sampling location immediately upstream of the District's facility. Indeed, the City of Worcester is located along the Blackstone River between these two sampling locations. See EPA GIS Map, Ex. 7 (depicting locations where the upper watershed data were collected in relation to the District's WET sampling locations). Worcester is a highly urbanized area with numerous industrial and commercial sites that have stormwater runoff to the Blackstone River. See RTC at 3. Aluminum has been observed in investigations of stormwater runoff from urban areas. See, e.g., Stormwater Characterization Study, NHDES-WD-97-12, State of New Hampshire Department of Environmental Services (November 1997) at Sections 4.5 - 4.6 and Tables 4-1 & 4-2, Ex. 8. Additionally, the City of Worcester uses an aluminum-based coagulant as part of its drinking water treatment process, and discharges backwash water from that process, into surface waters below the Kendall

¹⁴ The Region does not seek to supplement the administrative record with this GIS map (or with subsequent references in this paragraph to a stormwater characterization study and DMR data from the Worcester Water Filtration Plant). As noted *supra*, the Region's position is that the Board should not consider any arguments on the merits related to these data, as they were not submitted during the comment period (the Kendall data) or not even created until after permit issuance (the tributary data). Given that the Region did not have the opportunity to analyze and respond to arguments based on the upper watershed data during the public comment period, however, the Region offers these materials to provide an indication of the defects in the District's arguments based on these data.

Transfer Station sampling point. See RTC at 3; EPA GIS Map. DMRs submitted to the Region by the Worcester Water Filtration Plant show aluminum concentrations in its effluent. See Worcester Water Filtration Plant DMRs, NPDES Permit #MAG640052 (Jan, April, July 2007), Ex. 9. In short, numerous potential anthropogenic sources of aluminum exist along the Blackstone River between the Kendall Transfer Station sampling point and the District's discharge. The District has failed to show that data collected seven miles upstream of the District (above the City of Worcester) demonstrate that the aluminum concentrations directly upstream of the District's discharge (below Worcester) are naturally occurring.

In addition, the District has failed to show a relationship between the ambient levels of aluminum in the upper watershed and the ambient levels immediately upstream from its facility during typical low flow periods. *See Dist. Pet.* at 11-13. During the months of June through October for the years 2004 through 2008, the average ambient aluminum concentration at the Kendall Transfer Station was 56 ug/l (assigning values of 50 ug/l for non-detect data points, as the District used in its analysis), based on the data presented by the District in Exhibit K. During these same months, the District's WET test data demonstrate that the average ambient aluminum concentration directly upstream of the District's discharge was 99 ug/l (with non-detect data assigned values of 50 ug/l). Thus, the average ambient aluminum concentrations directly upstream from the District (i.e., 99 ug/l) were substantially higher than the average ambient aluminum levels seven miles upstream from the District's discharge (i.e., 56 ug/l) during the typical low flow months. ¹⁵

¹⁵ The District also suggests there is a relationship between aluminum concentrations in the upper watershed and the aluminum levels in its own effluent. See Dist. Pet. at 9. The District fails to explain the

Even if the ambient aluminum concentrations at the Kendall Transfer Station were naturally occurring, the ambient aluminum data from samples collected directly upstream of the District's discharge during typical low flow months indicate that aluminum enters the Blackstone River from additional sources between the Kendall Transfer Station and the District's discharge. Thus, the Worcester Water Department data fail to demonstrate that the ambient aluminum concentrations directly upstream from the District are naturally occurring.

Since the District failed to demonstrate that the background concentrations of aluminum are naturally occurring, and given that MassDEP has not made such a determination, the Region did not err or abuse its discretion by setting the aluminum effluent limit in the Permit Modification based on the EPA *National Recommended Water Quality Criteria*.

C. The EPA National Recommended Water Quality Criteria for Aluminum Apply to the District's Discharge in the Absence of a Site-Specific Aluminum Limit for the Blackstone River Based on the Massachusetts Water Quality Standards

The District argues that it may not be appropriate for the Region to apply the EPA National Recommended Water Quality Criteria for aluminum to the District's discharge because the criterion may be significantly overprotective. See Dist. Pet. at 13. In support of its argument, the District simply repeats arguments made in its comments on the Draft Permit Modification, referencing approaches such as the development of site-specific limits or the adoption of alternative state standards for aluminum. While the materials

relevance of a comparison of data collected at these two locations for purposes of determining whether background concentrations of aluminum in the Blackstone River are naturally occurring at the location immediately upstream of its facility. See Id. Nonetheless, the comparison of these data similarly does not support a relationship between the ambient aluminum concentrations at the Kendall Transfer Station and the aluminum levels in the District's discharge during low flow conditions. Using the same time period detailed above (i.e., June – October, 2004-2008) the District's average aluminum effluent concentration was 88 ug/l (with non-detect data assigned values of 50 ug/l) compared to the average ambient aluminum concentration at the Kendall Transfer Station of 56 ug/l.

referenced by the District might support the development of site-specific aluminum criteria by MassDEP for the Blackstone River, until such time as MassDEP establishes such site-specific criteria and they are approved by the Region, the Region is required to apply the EPA *National Recommended Water Quality Criteria* in developing aluminum effluent limits. Accordingly, the Board should deny review.

In support of its argument that the national criterion for aluminum is overprotective, the District referenced in its comments (and repeats virtually verbatim in its Petition) EPA's discussion of the development of site-specific limits in the National Recommended Water Quality Criteria at footnote L; an EPA Region III approval of West Virginia's development of site-specific aluminum criteria; and a study published in the Canada Gazette, as well as a Canadian Priority Substances List Assessment Report, proposing that aluminum salts used in Canada are not entering the environment in harmful concentrations. See Dist. Comments at 4. See also Dist. Pet. at 13-14; Exs. M, N, O, P. Yet the District nowhere confronts the Region's explanation in its Response to Comments that, in the absence of state adoption and EPA approval of site-specific aluminum criteria for the Blackstone River, or the adoption and approval of statewide aluminum criteria that are different from the national criteria, the Region was compelled to establish limits to ensure compliance with existing criteria. See RTC at 3-4. See also In re Phelps Dodge Corp., 10 E.A.D. 460, 496, 520 (EAB 2002) (mere repetition of objections made during the comment period or the "mere allegation of error" without specific supporting information are insufficient to warrant review).

If a discharge is found to have a reasonable potential to cause or contribute to an exceedance of a water quality criterion, its permit *must* contain effluent limits necessary

to achieve the state water quality standards. See 40 CFR §§ 122.44(d)(1), 122.44(d)(5). According to the Massachusetts water quality standards, "for pollutants not otherwise listed in 314 CMR 4.00, the National Recommended Water Quality Criteria... are the allowable receiving water concentrations for the affected waters, unless [MassDEP] ... establishes a site specific criterion..." See 314 CMR § 4.05(5)(e). MassDEP has not otherwise listed aluminum in 314 CMR 4.00, nor has it established site specific criteria for aluminum in the Blackstone River. Thus, the Region appropriately based the monthly average aluminum effluent limit in the Permit Modification on the chronic aluminum criterion of 87 ug/l in the National Recommended Water Quality Criteria. See RTC at 4. Because the District has not demonstrated clear error or abuse of discretion by the Region in establishing the aluminum effluent limit, review of this issue should be denied.

D. The Region Appropriately Established the Aluminum Effluent Limitation in the Permit Modification Without Regard to Cost or Technological Availability

The District argues, for the first time on appeal, that the aluminum effluent limit in the Permit Modification violates public policy because it renders the District's capital planning impossible and constrains the options available to the District for phosphorous control. The District not only failed to make these arguments in the comments on the Draft Permit Modification, but they are also irrelevant to the *establishment* of an aluminum effluent limit. Accordingly, the Board should reject the District's argument that the imposition of an aluminum effluent limit in the Permit Modification violates public policy.

As a preliminary matter, by virtue of its failure to raise this issue during the public comment period, the District failed to properly preserve its argument for Board review.

See Desert Power, 14 E.A.D. at 7 n. 3; Kendall New Century, 11 E.A.D. at 55; Steel

Dynamics, 9 E.A.D. at 230; Maui Elec. Co., 8 E.A.D. at 9. Even if the Board reaches this argument, however, it should uphold the aluminum effluent limit in the Permit Modification because concerns related to cost or availability of treatment technologies, which underlie the District's argument, are irrelevant to the establishment of water quality-based effluent limitations.

The Region appreciates the District's concern with the issuance of a modification to its Permit only six months after the permit issuance. The District complains that the Region initially determined that only monitoring for aluminum was required, but after Trout Unlimited filed a petition for review, decided a limit was needed based on review of the same data. *See Dist. Pet.* at 14-16. While this process is understandably frustrating to the District, the fact remains that, upon further evaluation and consideration, the Region determined that the data did in fact support the need for a limit. The issue before the Board is whether the imposition of a limit was reasonable in light of the facts and law.

The CWA and its implementing regulations require that NPDES permits contain effluent limitations necessary to achieve water quality standards based on a determination of whether the discharge has a reasonable potential to cause or contribute to an excursion above the water quality standards. 40 CFR § 122.44(d)(1)(ii); *EPA Permit Writer's Manual* at 100-102 (AR 32). The Region is not free to consider issues such as logistical constraints or the cost, availability, or effectiveness of treatment technologies in developing water quality-based effluent limitations. *See U.S. Steel Corp.*, 556 F.2d at 838; *Westborough*, 10 E.A.D. at 312; *City of Moscow*, 10 E.A.D. at 168; *New England Plating*, 9 E.A.D. at 738; *City of Fayetteville*, 2 E.A.D. at 600-601. Accordingly, the

Region appropriately developed the aluminum effluent limit in the Permit Modification without consideration of the planning constraints, costs, or availability of technology required for the District to comply with the limit.

If a permittee needs time to come into compliance with a limit, the Region can consider costs or technological availability in the establishment of a compliance schedule for meeting such limit either in the permit or in an administrative order. ¹⁶ See In re Scituate Wastewater Treatment Plant, 12 E.A.D. 708, 734 (EAB 2006) (noting that, while cost and technological considerations are not appropriate factors to consider in the establishment of water quality-based effluent limits, the Region may issue a compliance order where strict and immediate compliance with permit terms dictated by the CWA may be particularly challenging). Thus, there is a mechanism to address any legitimate concerns the District has about the cost or availability of technology for complying with the aluminum effluent limit in the Permit Modification.

Since the "public policy" issues raised by the District are not appropriately considered in the establishment of water-quality based effluent limitations, the District has not demonstrated any error or abuse of discretion by the Region in its establishment of the aluminum effluent limit in the Permit Modification.

III. CONCLUSION

For the foregoing reasons, the Board should deny review of the District's Petition.

¹⁶ In its comments on the Draft Permit Modification, the District did not propose a compliance schedule.

Respectfully submitted,

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