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October 15, 2009

Mr. Ira W. Leighton
Acting Regional Administrator
U.S. Environmental Protection Agency, Region I
One Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Designation of Attainment Area Status under the Revised Lead Standard

Dear Mr. Leighton:

As required by the Clean Air Act and the Transportation Equity Act for the 21st Century, I hereby request that New Hampshire be designated as in attainment for the 24-hour and annual National Ambient Air Quality Standard (NAAQS) for ground-level lead. All areas of New Hampshire currently attain the standard and there are no areas of the state that exacerbate lead violations in downwind nonattainment areas.

The U.S. Environmental Protection Agency (EPA) issued designation guidance in its memorandum from William Harnett to EPA Regional Administrators, dated August 21, 2009. Accordingly, my recommendation considers measurements of lead air pollution collected between 2006 and 2008. To ensure the appropriateness of proposed designations, we also considered the more recent 2009 data (see Table 1 below), measurements collected in the 2002 to 2003, and emissions of potentially large sources that could develop local high lead air concentrations. No portions of New Hampshire were found to be at risk for exceeding the new lead NAAQS.

In summary, I propose that the entire State of New Hampshire be designated as attainment for the quarterly lead NAAQS. I believe there is sufficient data to support a full designation of attainment throughout the state and that a designation of unclassified is unnecessary. New Hampshire is committed to protecting the health of its citizens by reducing air pollution emissions in efficient and cost-effective ways.

I ask that EPA also continue to seek ways to further protect the nation's population by requiring implementation of new and existing air pollution reducing technology as it is developed on a national basis for all source sectors. Nationwide controls will not only benefit those areas where the controls are implemented, but will also provide critical background air pollution reductions in states further downwind, such as New Hampshire. Long-term protection of our citizens and environmental resources will require a collective solution.

Thank you for your consideration of my recommendations. If you have any questions regarding this determination, please contact Thomas Burack, Commissioner of the Department of Environmental Services at (603) 271-3449.

Sincerely,

John H. Lynch

cc: Thomas S. Burack, Commissioner DES
Robert R. Scott, Air Resources Director DES
Jeffrey T. Underhill, DES

TABLE 1. Estimated 2006 – 2008 Quarterly Lead Design Values by Monitor, in micrograms per cubic meter ($\mu g/m^3$)

Location	Monitor ID	2006 Max Quarterly Avg	2007 Max Quarterly Avg	2008 Max Quarterly Avg	2009 Max Quarterly Avg [1]	2006-2008 Design Value	2007-2009 Design Value[2]	Lead NAAQS ($\mu g/m^3$)
New Hampshire	None	--	--	--	--	--	--	0.15
Massachusetts								0.15
Boston Kenmore Square	250250002	0.01	0.01	0.02	0.01[1]	0.01	0.01[2]	0.15
Maine	None	--	--	--	--	--	--	0.15
Vermont	None	--	--	--	--	--	--	0.15

TABLE 2. Proposed Designation of Areas of Quarterly Lead NAAQS Nonattainment in New Hampshire

NEW HAMPSHIRE – Lead (QUARTERLY STANDARD)

Designated Area	Designation Type	Classification Type
New Hampshire: None	Nonattainment	--
All portions of all counties	Attainment	Attainment

[1] Data for 2009 is presented for illustrative purposes due to being based on preliminary data for the year through September. Final data has not yet been delivered in full from the testing laboratory.

[2] Estimated 2007-2009 design value provided for illustrative purposes only.

TECHNICAL ATTACHMENT

The recommendations contained in this letter are fully compliant with Section 107(d)(1)(A) of the Clean Air Act ("CAA") which defines a nonattainment area as any area that (1) does not meet the lead National Ambient Air Quality Standard ("NAAQS"), or (2) contributes to ambient lead violations in a nearby area. This analysis evaluates the most recent 4-years of quality assured monitoring data for lead pertinent to New Hampshire, recent data collected near the state's largest coal-fired power plant, and emissions data for potential major sources, including airports.

Since the late 1970s and early 1980s, the lead monitoring network was significantly reduced due to rapidly declining lead air pollution levels. Of our three neighboring states (Maine, Massachusetts, and Vermont) previous lead concentrations dropped so significantly when leaded gasoline was phased-out that all but the single highest recording lead monitor were discontinued. The remaining lead monitor is located at Kenmore Square in Boston Massachusetts. According to Massachusetts Department of Environmental Protection, this monitor was retained because it represented the highest monitored lead levels in Massachusetts as well as the northern New England region. Current design values at this monitor are less than ten percent of the new lead NAAQS as indicated in Table A1 below. Since New Hampshire is a much more rural state with fewer sources as compared to the Kenmore Square area, previously measured lead concentrations in New Hampshire were below levels measured at Kenmore Square and are expected to still be lower today.

TABLE A1. Estimated 2006 – 2009 Quarterly Lead Design Values by Monitor, in micrograms per cubic meter ($\mu g/m^3$)

Location	Monitor ID	2006 Max Quarterly Avg	2007 Max Quarterly Avg	2008 Max Quarterly Avg	2009 Max Quarterly Avg [1]	2006-2008 Design Value	2007-2009 Design Value[2]	Lead NAAQS ($\mu g/m^3$)
New Hampshire	None	--	--	--	--	--	--	0.15
Massachusetts								0.15
Boston Kenmore Square	250250002	0.01	0.01	0.02	0.01[1]	0.01	0.01[2]	0.15
% of NAAQS		6.7%	6.7%	13.3%		6.7%	6.7%	
Maine	None	--	--	--	--	--	--	0.15
Vermont	None	--	--	--	--	--	--	0.15

In a review of historical lead monitored concentrations in New Hampshire, there was a time prior to the phase-out of leaded gasoline where some locations exceeded the level of the new 2008 0.15 $\mu g/m^3$ lead NAAQS. At the time, the prevailing lead NAAQS was 1.5 $\mu g/m^3$. Lead monitors were located in Berlin, Concord, Hollis, and Portsmouth New Hampshire. Exceedances of the level of the new 2008 lead NAAQS ended around April of 1980 and concentrations continued to decline to below 10 percent of the new lead NAAQS where it stabilized and is estimated to remain today. Lead monitoring was

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discontinued in New Hampshire because measured levels were less than 1% of the former lead NAAQS. Table A2 below summarizes the most recent year's measured lead data in the state before monitoring was discontinued. Please note, the monitored values are presented as maximum 24-hour concentrations, not quarterly averages. Quarterly average data would normally be significantly lower.

TABLE A2. Estimated 2006 – 2009 Quarterly Lead Design Values by Monitor, in micrograms per cubic meter ($\mu g/m^3$)

Monitor	Most Recent Year	24-hour Concentration $\mu g/m^3$	New Quarterly (3-month avg) Lead NAAQS
Berlin	1978	0.086	0.15
Concord	1988	0.038	0.15
Hollis	1988	0.010	0.15
Portsmouth	1988	0.019	0.15

To ensure that isolated "hotspots" were not overlooked in the New Hampshire designation review, areas in near proximity to potentially sizable lead sources such as airports, incinerators, and power plants were considered in this designation. Emission rates, stack tests, and in some cases dispersion modeling were used in this assessment. This work found that there is no single source within New Hampshire that is a large enough to cause ambient air lead concentrations to approach the NAAQS. Emissions from large facilities were found to be either well controlled or were low enough to not create notable lead hotspots. Modeling of the state's largest source predicted ambient concentrations of less than ten percent of the NAAQS and average concentrations of one-third of that. Specifics of this analysis are as follows:

> In the 2002 to 2003 timeframe, concentrations of various toxic pollutants were measured near the single largest remaining source of lead emissions in the state, Merrimack Station. Merrimack station is the only source in the state that reports emissions of lead greater than 0.05 tons per year. Lead data was collected at two sites near the power plant, Brickett Hill and Exchange Street. Dispersion modeling of the facility assisted when determining the location for these monitors by identifying worst-case locations. In addition to power plant emissions, the monitoring stations in Pembroke are also near the Concord Airport, the second largest airport source of lead emissions in the state (leaded piston aircraft fuel), likely making these sites worst-case locations in New Hampshire. The Exchange Street site is aligned with the power plant and the Concord Airport, enabling it to capture combined impacts from the two facilities.
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> In nearly two years of data collection, the highest 24-hour lead concentration measured was 0.0100 $\mu g/m^3$ (see Table A3). The lead NAAQS is defined as a quarterly average, which is almost always lower than a 24-hour average, or estimated to be less than 0.005 $\mu g/m^3$ or about 3 percent of the NAAQS. Assuming that this maximum value somehow persisted for three continuous months (even though measurements prove this not to be the case), the maximum quarterly value would still be below 10 percent of the lead NAAQS (6.7%). Based on this data, it is safe to conclude that New Hampshire's worst case location is well below the level of the 2008 lead NAAQS and consequently other locations in the state that previously met the new standard and did not see any notable emission increases are also attaining the standard.

In summary, historical and more recent lead monitoring data demonstrates New Hampshire is currently meeting the revised quarterly lead NAAQS on a state-wide basis. Historical data geographically spans the state and the most recent measurements, even though 20 to 30 years old, were already safely below the levels of the new 2008 lead NAAQS. Since then large sources have either been controlled, shut down, or not reporting any notable increases in lead emissions anywhere in the state. Recent 2002 to 2003 data collected in Pembroke supports that lead emissions are lower than data reported in the late 1980s. Further, if recent worst-case (Pembroke 24-hour maximum) measurements of lead emissions is less than 10 percent of the new NAAQS, then there is little risk that any location in the state exceeds the 2008 lead NAAQS. As a result, New Hampshire concludes that a state-wide designation of attainment for the 2008 lead NAAQS is justified.

TABLE A3. Measured Lead Concentrations Near Major Source (2002 – 2003 – Pembroke, New Hampshire)

Date	24-Hr µg/m^3 Brickett Hill	24-Hr µg/m^3 Exchange Str
09/11/02	0.0035	0.0046
09/23/02	0.0013	0.0020
10/05/02	0.0013	0.0014
10/17/02	0.0007	0.0017
10/29/02	0.0012	0.0011
11/10/02	0.0035	0.0020
11/22/02	0.0051	0.0055
12/04/02	0.0059	--
12/16/02	0.0025	0.0021
12/28/02	0.0044	0.0029
01/09/03	0.0017	0.0023
01/21/03	0.0079	0.0020
02/02/03	0.0013	0.0027
02/14/03	0.0042	0.0034
02/26/03	0.0073	0.0059
03/10/03	0.0034	0.0031
03/22/03	0.0100	0.0082
04/03/03	0.0042	0.0037
04/15/03	0.0070	0.0079
04/27/03	0.0019	0.0017
05/09/03	0.0020	0.0036
05/21/03	0.0035	0.0031
06/02/03	0.0015	0.0023
06/14/03	0.0045	0.0035
06/26/03	0.0041	0.0047
07/08/03	0.0030	0.0037
07/20/03	0.0024	0.0024
08/01/03	0.0007	0.0012
08/13/03	0.0023	0.0016
08/25/03	0.0032	0.0026
09/06/03	0.0034	0.0024
09/18/03	0.0009	0.0021
09/30/03	0.0011	0.0045
10/12/03	0.0037	0.0016
10/24/03	0.0008	0.0011
11/05/03	0.0014	0.0062
11/17/03	0.0058	0.0014
12/11/03	0.0004	0.0012
12/23/03	0.0054	0.0087
2002 Avg	0.0029	0.0026
2003 Avg	0.0034	0.0034
NAAQS	0.1500	0.1500
2 year Avg	0.0033	0.0032
2 year Max	0.0100	0.0087
Max % NAAQS	6.7%	5.8%