ILLINOIS POLLUTION CONTROL BOARD
June 10, 1982

IN THE MATTER OF:	)	
	)	
AMENDMENTS TO CHAPTER 2: AIR POLLUTION; PART III: AIR QUALITY STANDARDS; RULE 313 (Lead)	)	R82-12

Proposed Rule. Submitted by the Board.

OPINION AND ORDER OF THE BOARD (by J.D. Dumelle):

The 1970 Clean Air Act Amendments required the Administrator of the United States Environmental Protection Agency to promulgate National Ambient Air Quality Standards (NAAQS) for five criteria pollutants (TSP, SO_2, NO_x, O_3 and CO) under Section 108 of that Act. These standards were promulgated under Section 109 of that Act in 1971, and were set at levels necessary to protect the public health and welfare.

In 1976 the court in NRDC, Inc., et al. v. Train, 411 F. Supp. 864 (S.D.N.Y., 1976) aff'd 545 F. 2d 320 (2d Cir. 1976) ordered USEPA to list lead as a criteria pollutant and to develop an ambient air quality standard. USEPA so listed lead on March 31, 1976, proposed an ambient air quality standard on December 14, 1977 (42 Fed. Reg. 63092) and published the final rule on October 5, 1978 (43 Fed. Reg. 46258). The Federal reference method for collecting and measuring lead and its compounds in the ambient air was also published in appendix G to that promulgation, as were final rules for the development of state implementation plans under 40 CFR 51. Appendix G was amended on June 29, 1979 (44 Fed. Reg. 37915).

The Board has existing rules in conformity with federal regulations which set standards and measurement methods for each of the original five criteria pollutants (Rules 307-312 of Chapter 2: Air Pollution). However, despite the passage of over three years since the federal lead regulations have been in effect, no one has proposed similar regulations before the Board concerning lead.

The Board therefore proposes the following new rule for lead as an amendment to Chapter 2:

Rule 313: Lead.

(a) Standard. The ambient air quality standards for lead and its compounds are 1.5 micrograms per cubic meter, maximum arithmetic mean averaged

over a calendar quarter.

(b) Measurement Method. For determining conformance with the ambient air quality standards for lead and its compounds, lead and its compounds shall be measured by the atomic absorbtion spectrometry method as described in 43 Federal Register 46258-46261, October 5, 1978 as amended by 44 Federal Register 37915-3718, June 29, 1979.

Statement of Reasons

Lead is a stable compound, ubiquitously distributed, which persists and accumulates both in the environment and the human body. Lead is emitted into the atmosphere by vehicles burning leaded fuel and by certain stationary sources. It enters the body through ingestion and inhalation with consequent absorbtion into the bloodstream and distribution to all body tissues.

Three body systems appear to be most sensitive to the effects of lead - the hematopoietic system, the nervous system, and the renal system. It has also been shown to affect normal functioning of the reproductive, endocrine, hepatic, cardiovascular, immunologic, and gastrointestinal systems.

Clearly, high air lead concentrations can cause significant health risks. In developing its proposed standard USEPA determined that the maximum safe blood level (geometric mean) for young children was 15 ug Pb/dl (deciliter). This was based on blood lead level thresholds for various biologic effects ranging from the risk of permanent, severe neurological damage or death at levels over 80 ug Pb/dl in children to enzyme system inhibition at levels as low as 10 ug Pb/dl. Since children appear to be at greatest risk, that group was used to establish safe levels.

12 ug Pb/dl of the 15 ug Pb/dl safe level was found to be attributable to nonair sources. The 3 ug Pb/dl difference was, therefore, estimated to be the allowable safe contribution to mean population blood level from lead in the air. Since epidemiological data indicates a general relationship of 1:2 between air lead (ug Pb/m^3) and blood lead (ug Pb/dl), USEPA determined that the air standard should be set at 1.5 ug Pb/m^3.

The Board proposes to adopt the federal standard of 1.5 ug Pb/m^3 as well as the federal reference method. In so doing the Board will have treated lead consistently with the other criteria pollutants: all will be subject to enforceable State standards and may be enforced through the Board and the State courts.

While the Illinois Environmental Protection Agency (Agency) has determined that the only non-attainment area in the State for lead is the Granite City area (see Ill. SIP, Volume 9: Lead, pp. 2-3), the potential for violation of the proposed standard is

sufficient to justify a State standard to protect the health and welfare of the People of the State. Further, such a rulemaking may be required for approval of the Illinois State Implementation Plan.

Although the Agency has apparently taken the position that the reduction of lead in mobile sources under the Federal Motor Vehicle Control Program and the federal lead-in-gasoline phase-down regulations along with particulate standards will allow the State to demonstrate attainment of NAAQS, that position may not be an accurate one, especially in light of possible amendments to the Clean Air Act. Promulgation and enforcement of a State standard should aid in attainment of the NAAQS.

ORDER

The Board hereby authorizes this regulatory proposal for hearings.

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order were adopte on the 10th day of June, 1982 by a vote of 5-0.

Christan L. Moffett, Clerk
Illinois Pollution Control Board