

December 12, 1996

SUPPORT DOCUMENT FOR WITHDRAWAL OF COPPER PHASE I TOTAL MAXIMUM DAILY LOADS (TMDLS) IN THE NEW JERSEY WATERS OF THE NEW YORK-NEW JERSEY HARBOR

I. Background

On August 11, 1994, the U.S. Environmental Protection Agency (EPA), in cooperation with the New York State Department of Environmental Protection (NYSDEC) and the New Jersey Department of Environmental Protection (NJDEP) public noticed (40 FR 41293) the proposed establishment of phased Total Maximum Daily Loads/Waste Load Allocations/Load Allocations (TMDLs/WLAs/LAs) for copper, mercury, nickel and lead in New York-New Jersey Harbor. The supporting technical bases for these TMDLs/WLAs/LAs are contained in EPA's document entitled, *Total Maximum Daily Loads (TMDLs) for Copper, Mercury, Nickel and Lead in NY-NJ Harbor* (July 26, 1994).

The basis for the proposed TMDLs was the most stringent of the applicable NJ or NY standards for mercury (0.025 ug/L), nickel (7.1 ug/L), and lead (8.5 ug/L), expressed as the total recoverable form of the metal. For copper, the criterion used in developing the TMDLs is 5.6 ug/L, expressed as dissolved metal. Based on these criteria and use of a water quality model employed for the TMDL effort, certain waters were projected to exceed water quality standards. However, because of the limited ambient and loading data, the state of the model calibration was considered uncertain for the Raritan River/Bay, the Hackensack and Passaic Rivers, and Newark Bay. Based on the available ambient data it was determined that existing loads were adequate to meet applicable water quality standards. The proposed phased TMDLs for these Harbor waters (Hackensack River, Passaic River, Newark Bay, and Raritan River/Bay) required that municipal and industrial loads be limited to their existing loads. As part of the phased TMDL, additional data collection and modeling were required for these waters. The New Jersey Harbor Dischargers Group (NJHDG) agreed to undertake the monitoring and modeling effort needed to develop phase II TMDLs for these waters.

Since the time of the public notice, EPA issued an Interim Final Rule (60 FR 22228, May 4, 1995), amending the National Toxics Rule. The Interim Final Rule established dissolved criteria for nickel and lead in New Jersey. It was determined that based on the dissolved nickel and lead criteria, insufficient data were available to develop phase I TMDLs for nickel and lead. The final TMDLs/WLAs/LAs, established on January 24, 1996 (61 FR 1930), were only for copper and mercury and required further data collection and modeling.

II. Monitoring Program for the New Jersey Waters

Subsequent to the establishment of TMDLs/WLAs/LAs for copper and mercury, the NJHDG prepared a monitoring plan designed to enhance the ambient data base for the four metals of concern (copper, mercury, nickel, lead) in the Hackensack River, Passaic River, Newark Bay, and Raritan River/Bay (the NJ Harbor waters). The initial phase of the monitoring effort was designed to determine if the NJ Harbor waters were water quality-limited for any of the metals of concern. Based on the results of this data collection effort, certain metals and/or waters would require additional monitoring and modeling to develop TMDLs. Metals monitoring was conducted under dry-weather and wet-weather conditions and using clean metals techniques. A complete description of the monitoring program is contained in *Work/Quality Assurance Project Plan for the United States Environmental Protection Agency Region II project, Investigation of Trace Metals in the New Jersey Portion of the New York/New Jersey Harbor - Part I* (May 26, 1995) , prepared by the Great Lakes Environmental Center for the NJHDG.

III. Results of Ambient Data Collection

The results of the ambient data collected in the NJ tributaries are contained in *Summary of the Phase I Metals Sampling and Analysis Program for the New Jersey Component of the New York/New Jersey Harbor Estuary Program* (March 5, 1996) and in data evaluation supplement, *Revisions to the Metals Report* (March 26, 1996). Probability distributions were utilized to determine the potential for ambient exceedances of water quality standards in the NJ waters. The distributions are designed to reflect the 4-day duration and once-in-three-year frequency of the ambient standards. The ambient data indicate the following:

- the mercury criterion is exceeded everywhere except in Raritan Bay;
- the copper criterion is not exceeded in the NJ waters;
- the lead criterion is not exceeded in the NJ waters; and
- the nickel criterion is exceeded in the Hackensack and Passaic Rivers.

Probability distributions, for each metal in the New Jersey waters, which support the above conclusions are shown in Figures 1-4.

IV. TMDLs

TMDLs are established for water quality-limited segments, which are defined as “any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of technology-based effluent limitations...” (40 CFR 130.2(i)). Analysis of the new monitoring data indicate that lead and copper concentrations do not exceed criteria. The NJ Harbor waters are, therefore, not water quality-limited and do not require TMDLs . EPA is, therefore, withdrawing the Phase I copper TMDLs established in January 1996.

Monitoring and modeling efforts will continue for nickel in the Hackensack and Passaic Rivers. The NJHDG, EPA and NJDEP are working together to collect additional data and conduct modeling , as necessary, in both Rivers. The additional data collection and modeling for these Rivers will be used to develop Phase II TMDLs, as necessary.

Based on the modeling used to develop the Phase I TMDLs, it is believed that mercury exceedances observed throughout the Harbor waters may in part be due to sources from atmospheric deposition and possibly sediment resuspension. Because mercury criteria continue to be exceeded, EPA maintains the Phase I TMDLs for mercury throughout the Harbor. The Phase I TMDL for mercury requires, in part, that municipal and industrial loads of mercury are maintained at existing loads. EPA, NYSDEC, and NJDEP will be addressing the mercury problem under the NY-NJ Harbor Estuary Program.

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