

**Comment Response Document  
Regarding the Water Quality Analysis of Cadmium and Lead for the Middle River  
Baltimore County, MD**

**Introduction**

The Maryland Department of the Environment (MDE) has conducted a public review of the proposed Water Quality Analysis (WQA) of cadmium and lead for the Middle River. The public comment period was open from August 1, 2003 through August 30, 2003. MDE received one set of written comments.

Below is a list of commentors, their affiliation, the date comments were submitted, and the numbered references to the comments submitted. In the pages that follow, comments are summarized and listed with MDE's response.

**List of Commentors**

Author	Affiliation	Date	Comment Number
Robert Koroncai	Office of Watersheds, U.S. Environmental Protection Agency	August 13, 2003	1 through 3

**Comments and Responses**

1. The commentor requested that the document include a clarification regarding whether or not the sediment samples that were tested for sediment toxicity were also chemically analyzed, or if chemical analyses were not performed because the samples did not exhibit toxicity to the test species (or another reason).

**Response:** Maryland conducted toxicity tests of the bottom sediments, which involves exposing test organisms to the sediments. The results of the toxicity tests indicated no toxicity. Consequently, it was not necessary to conduct sediment chemistry analyses. The following statement has been included in the second paragraph of Section 3.0 (Water Quality Characterization): "Sediment chemistry analysis was not conducted because toxicity was not observed in the ambient sediment bioassay."

2. The commentor requested that the document include a discussion regarding the marked increase of lead and cadmium water column concentrations in July 2001 versus the rest of the sampling period, and explain if a plausible reason exists for this increase.

**Response:** An investigation of climatic and point source data was conducted and revealed no significant change in precipitation or industrial discharge for July 2001 which may have explained elevated levels of cadmium and lead. The total concentrations for lead in July 2001 are within the same range as the remaining sampling dates though the partitioning in the dissolved phase has significantly increased. This phenomenon did not apply for cadmium. The laboratory which performed the chemical analysis believed there was no

source of error in their analytical procedure. Although the Department is unable to provide a plausible explanation as to why the cadmium and lead levels are elevated in July 2001, the concentrations are still very significantly below the water quality criteria and significantly decreased the following year in April 2002.

3. The commentor requested that the document include a clarification regarding whether any relevant fish and benthic indices of biological integrity (IBI) data exist, as well as an evaluation of such data, as applicable.

**Response:** Such data does not exist because samples for fish and benthic IBIs developed by the Maryland Biological Stream Survey are not applicable for estuaries, such Middle River (which experiences tidal water interaction).