

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION
REGIONAL EMAP DATABASE
1998 NEW YORK/NEW JERSEY HARBOR SYSTEM
SEDIMENT COMPOSITION DATA BY SITE

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1. DATA SET IDENTIFICATION

- 1.1 Title of Catalog document
Regional EMAP Database
1998 New York/New Jersey Harbor System
Sediment Composition Data by Site
- 1.2 Author of the Catalog entry
Melissa Hughes, Computer Sciences Corporation
- 1.3 Catalog revision date
18 May 2004
- 1.4 Data set name
Sediment Composition Data (sed_grn.txt)
- 1.5 Task Group
Regional Environmental Monitoring and Assessment Program
- 1.6 Data set identification code
235
- 1.7 Version
001

1.8 Requested Acknowledgment

If you plan to publish these data in any way, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U. S. Environmental Protection Agency through its EMAP-Estuaries Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

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U.S. Environmental Protection Agency - Region II

2.2. Investigation Participant

Ms. Sandi Benyi
U.S. Environmental Protection Agency - ORD/NHEERL/AED

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The SEDIMENT COMPOSITION data set reports the per cent silt/clay and total organic carbon (TOC) measured in a sample. These samples were taken in the New York/New Jersey Harbor region. The samples were taken from a homogenate from several grabs.

3.2 Keywords for the Data Set

sediment composition, silt/clay, TOC, total organic carbon

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The project was designed to support resource management decisions related to pollution control and remediation throughout the New York/New Jersey (NY/NJ) Harbor and to assist the New York-New Jersey Harbor Estuary Program (HEP) in developing a contaminant monitoring strategy to be included in the Comprehensive Conservation and Management Plan (CCMP) for the NY/NJ Harbor system.

4.2 Data Set Objective

To provide an overview of the silt/clay and TOC content of the NY/NJ harbor region.

4.3 Data Set Background Discussion

The New York/New Jersey Harbor System has been susceptible to toxic contamination due to surrounding land uses. Harbor sediments are contaminant reservoirs which can function as a secondary source of these land use contaminants. Contaminated sediments pose a substantial threat to Harbor resources and are a management challenge. Characterizing sediment condition and composition is a logical way to describe toxic contamination in an estuarine system because the sediment can be a sink for contaminants that adsorb to fine particles.

4.4 Summary of Data Set Parameters

SEDIMENT COMPOSITION data set values were based on the results of individual silt, clay and total organic carbon (TOC) analyses.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

Collect sediment grab samples suitable for the analysis of silt, clay and TOC content.

5.1.2 Sample Collection Methods Summary

The grab sampler was lowered through the water column; the grab penetrated the sediment by gravity releasing a trigger allowing the jaws to close. When the grab was pulled from the sediment using the winch, the jaws closed, encapsulating the sediment sample.

Multiple grabs were required to collect enough volume for analysis. Overlying water was carefully drained. The remaining top 2 cm of sediment from each grab was removed using stainless steel spoons. A composite of all grabs was homogenized in a glass bowl for 10 minutes. A subsample was removed for silt/clay content analysis and transferred to a sample container that was stored on ice.

5.1.3 Sampling Start Date

June 1998

5.1.4 Sampling End Date

August 1998

5.1.5 Platform

Sampling was conducted from the U.S.EPA research vessel, the R/V CLEAN WATERS.

5.1.6 Sampling Gear

A 0.04-m² or 0.1-m², stainless steel, Young-modified Van Veen Grab sampler was used to collect sediment grabs. This grab sampled an area of 440 cm² and a maximum depth of penetration in the sediment of 10 cm.

5.1.7 Manufacturer of Sampling Equipment
Young's Welding, Sandwich, MA

5.1.8 Key Variables

No data were recorded at the time of sample collection.

5.1.9 Collection Method Calibration

The sampling gear did not require any calibration. It required inspection for deformities incurred due to mishandling or impact on rocky substrates.

5.1.10 Sample Collection Quality Control

A successful grab had relatively level, intact sediment over the entire area of the grab and a sediment depth at the center of at least 5 centimeters. Unacceptable grabs included those with grossly slumped surfaces and those completely filled to the top, where the sediment was in direct contact with the hinged top.

Care was taken to avoid sediment that had touched the surface of the grab and to use only samples with undisturbed surfaces. Clean stainless steel spoons and glass mixing bowls were used to prevent accidental contamination. The van Veen Grab was rinsed with ambient seawater between grabs at a station and thoroughly cleaned with detergent and water between stations.

5.1.11 Sample Collection Method Reference

Reifsteck, D.M., C.J. Strobel and D.J. Keith. 1993. Environmental Monitoring and Assessment Program - Near Coastal Component: 1993 Virginian Province Field Operations and Safety Manual. U.S. EPA NHEERL-AED. Narragansett, RI.

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

Process sediment samples to accurately measure silt and clay content.

5.2.2 Sample Processing Methods Summary

The samples were treated with sodium hexametaphosphate as a dispersant. Percent silt and percent clay were determined using pipette analysis of the filtrate that passed through a 63-u sieve.

5.2.3 Sample Processing Method Calibration

NA

5.2.4 Sample Processing Quality Control

All analyses employed appropriate quality assurance samples.

5.2.5 Sample Processing Method Reference

U.S. EPA. 1993. EMAP Laboratory Methods Manual: Estuaries.
 U.S. Environmental Protection Agency, Office of Research and
 Development, Environmental Monitoring Systems Laboratory,
 Cincinnati, OH.

5.2.6 Sample Processing Method Deviations

Samples were not digested with hydrogen peroxide.

6. DATA MANIPULATIONS

6.1 Name of new or modified values

NA

6.2 Data Manipulation Description

NA

6.3 Data Manipulation Examples

NA

7. DATA DESCRIPTION

7.1 Description of Parameters

#	Parameter Name	Data Type	Len	Format	Parameter Label
1	STATION	Char	10	\$10.	Station identifier
2	EVNTDATE	Num	8	DATE7.	Date
3	SILTCLAY	Num	8	5.1	Silt/clay content (%)
4	TOC	Num	8	5.1	Total organic carbon
5	UNITS	Char	10	\$10.	TOC units

7.1.6 Precision to which values are reported

The precision is indicated by the attribute format reported under 7.1

7.1.7 Minimum value in data set

Silt/clay (%) 0.0
 TOC 0.054

7.1.8 Maximum value in Data Set

Silt/clay (%) 98.3
 TOC 10.32

7.2 Data Record Example

7.2.1 Column Names for Example Records

STATION,DATE,SICL,TOC,UNITS

7.2.2 Example Data Records

STATION,DATE,SICL,TOC,UNITS
 JB008,8/4/98,95.2,6.35,%
 JB018,8/5/98,46.9,5.1,%
 JB026,8/7/98,65.9,5.04,%

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-74 Degrees 17.4 Minutes 48.00 Decimal Seconds

8.2 Maximum Longitude

-73 Degrees 45 Minutes 0.54 Decimal Seconds

8.3 Minimum Latitude

40 Degrees 25.2 Minutes 36.00 Decimal Seconds

8.4 Maximum Latitude

40 Degrees 51.6 Minutes 42.00 Decimal Seconds

8.5 Name of area or region

New York/New Jersey Harbor System:

Six sub-basins were sampled in the New York/New Jersey Harbor, including: Upper Harbor, Newark Bay, Lower Harbor (includes Raritan and Sandy Hook Bays), and Jamaica Bay. For purposes of this study, the region includes the lower portions of the Hudson, Passaic, Harlem, Hackensack and Raritan Rivers, upstream to a near-bottom salinity of 15 ppt, the East River to Long Island Sound and Lower Harbor to the Atlantic Ocean.

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Data Quality Objectives

Quality assurance goals were developed and followed for each QA sample type and for each analysis.

9.2 Quality Assurance/Quality Control Procedures

NA

9.3 Quality Assessment Results

These in-house QC measures met the requirements established in the QA Plan.

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the WWW server.

10.2 Data Access Restrictions

Data can only be accessed from the WWW server.

10.3 Data Access Contact Persons

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10.4 Data Set Format

Comma delimited

10.5 Information Concerning Anonymous FTP

Data cannot be accessed via ftp.

10.6 Information Concerning WWW

Data can be downloaded from the WWW servers.

10.7 EMAP CD-ROM Containing the Data Set

Data are not available on CD-ROM

11. REFERENCES

Adams, D. 1998. Quality Assurance Project Plan for Environmental Monitoring, "A 5-year Revisit of Sediment Quality in the NY/NJ Harbor." U.S. Environmental Protection Agency, Region 2, Edison, NJ.

Adams, Darvene and Sandra Benyi. 2003. Final Report: Sediment Quality of the NY/NJ Harbor System - A 5-Year Revisit. EPA/902-R-03-002. USEPA-Region 2, Division of Science and Assessment. Edison, NJ. December, 2003.

Reifsteck, D.M., C.J. Strobel and D.J. Keith. 1993. Environmental Monitoring and Assessment Program - Near Coastal Component: 1993 Virginian Province Field Operations and Safety Manual. U.S. EPA NHEERL-AED. Narragansett, RI.

U.S. EPA. 1993. EMAP Laboratory Methods Manual: Estuaries. U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring Systems Laboratory, Cincinnati, OH.

12. TABLE OF ACRONYMS

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