CATALOG DOCUMENTATION
NATIONAL COASTAL ASSESSMENT- NORTHEAST DATABASE
YEAR 2001 STATIONS
SEDIMENT CHEMISTRY DATA: "SEDCHEM"

TABLE OF CONTENTS

1. DATASET IDENTIFICATION

1.1 Title of Catalog document

National Coastal Assessment-Northeast Region Database
Year 2001 Stations
SEDIMENT CHEMISTRY DATA

1.2 Authors of the Catalog entry

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1.3 Catalog revision date

April 2008

1.4 Dataset name

SEDCHEM

1.5 Task Group

National Coastal Assessment-Northeast

1.6 Dataset identification code

007

1.7 Version

001

1.8 Requested Acknowledgment

EMAP requests that all individuals who download EMAP data acknowledge the source of these data in any reports, papers, or presentations. If you publish these data, please include a statement similar to: "Some or all of the data described in this article were produced by the U. S. Environmental Protection Agency through its Environmental Monitoring and Assessment Program (EMAP)".

2. INVESTIGATOR INFORMATION (for full addresses see Section 13)

2.1 Principal Investigators

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Donald Cobb, U.S. EPA NHEERL-AED

2.2 Sample Collection Investigators

Donald Cobb, U.S. EPA NHEERL-AED

2.3 Sample Processing Investigators

Not applicable

3. DATASET ABSTRACT

3.1 Abstract of the Dataset

The SEDCHEM data file reports the concentrations of chemical contaminants in sediment samples collected in Northeast estuaries sampled during the summer of 2001. Sediment samples were analyzed for 86 chemical constituents, including metals, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and pesticides. One record is presented per analyte. For concentration values smaller than the MDL (non-detects), the result is reported as zero, the method detection limit (MDL) is listed, and the record is flagged; thereby giving the data user options for alternative treatment of non-detects (see Section 4.3). Note that consistent methods were not followed by all analytical laboratories in two respects: (1) in the digestion method used to analyze metals, and (2) in the MDL values used for most chemical analyses (see Section 5.2.6).

3.2 Keywords for the Dataset

Sediment contaminants, metals, polynuclear aromatic hydrocarbons, PAH, polychlorinated biphenyls, PCB, pesticides, DDT.

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The National Coastal Assessment (NCA) is a national monitoring and assessment program with the primary goal of providing a consistent evaluation of the estuarine condition in U.S. estuaries. It is an initiative of the Environmental Monitoring and Assessment Program (EMAP), and is a partnership of several federal and state environmental agencies, including: EPA’s Regions, Office of Research and Development, and Office of Water; state environmental protection agencies in the 24 marine coastal states and Puerto Rico; and the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Agency (NOAA). The NCA program was initiated in 2000, and was initially also known as the Coastal 2000 Program.

Stations were randomly selected using EMAP’s probabilistic sampling framework and were sampled once during a summer index period (June to October). A consistent suite of indicators was used to measure conditions in the water, sediment, and in benthic and fish communities. The measured data may be used by the states to meet their reporting requirements under the Clean Water Act, Section 305(b). The data will also be used to generate a series of national reports characterizing the condition of the Nation’s estuaries.

4.2 Dataset Objective

The objective of the sediment chemistry data file is to report the concentrations of chemical contaminants in estuarine sediment samples collected in the northeast NCA program in 2001.

4.3 Dataset Background Discussion

Parameters contained in SEDCHEM data file are listed in Section 4.4. This section provides background information on several of these parameters. The information here pertains to data collected in 2001 in northeastern coastal region, Maine through Delaware.

A two-year sampling design was employed for 2000-2001 NCA program in the Northeast. Analysts may therefore wish to consider the two years of data together.

The NCA suite of analytes measured are the same contaminants measured by EPA’s Environmental Monitoring and Assessment Program (EMAP) and NOAA’s National Status and Trends program. Four classes of analytes are measured: polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organo-chlorine pesticides, and metals. The twenty-two measured PAHs compounds include the 16 priority pollutants defined by the Superfund program and several alkylated derivatives which are useful in identifying sources of these compounds. The concentrations of 20 PCBs and 20 pesticides, all Superfund priority pollutants, are also measured. Sediment grain-size and Total Organic Carbon (TOC) measurements made on the same sediments are reported in the SEDGRAIN file.

The analytes in this file are identified with an abbreviated code name (listed in Section 7.1.3). Full chemical names are listed in the ANALYTES data table.

Routinely, the concentration values from clean sites were reported as smaller than the method detection limit (MDL). In this file, these ‘non-detects’ are reported as zero and the QACODE is set to “CHM-A” to indicate the assignment. While the concentration of the analyte is clearly small, it is not strictly zero. The MDL is therefore listed as a guideline to users who wish to substitute values other than zero, i.e., setting the non-detect value to the MDL value, half the MDL value, etc. Furthermore, results of organic analytes may routinely show non-zero values that are less than the MDL. This apparent inconsistency is possible because, by convention, the MDLs for organic analyses are calculated to indicate the threshold of reliable measurements, rather than the stricter limit of instrumental detection. In these cases, the best estimate of the concentration is reported (i.e., the value reported by the analytical laboratory), the QACODE is set to “CHM-B”, and the MDL is listed. The user can be confident that the analyte is present, but there is a high degree of uncertainty in the reported concentration. Note that the value of the MDL depends on the dilution history of the sample; therefore, its magnitude can differ widely among samples. Most results in this file are larger than the MDL and are reported directly without MDL values or QACODEs. Finally, records flagged with "CHM-C" indicate that the concentration value is uncertain because an interference was noted in the blank analysis performed with the sample; caution is advised in interpreting these results. To summarize:

QACODE	INTERPRETATION	CONC reported	MDL reported
<none>	result is detectable and > MDL	as measured	<none>
CHM-A	result is ≤ MDL and undetectable	zero	MDL is listed
CHM-B	result is ≤ MDL but detectable	best estimate	MDL is listed
CHM-C	result may be affected by interference	best estimate	<none>

Samples collected in 2001 were analyzed by one of several analytical labs, identified by the parameter LABCODE in Section 4.4. Participating labs in 2001 were:

LABCODE = NAT_ADL: Arthur D Little, 125 High St, Boston, MA 02210

LABCODE =NY: (NY analyses only) New York Dept of Health Services, Wadsworth Center, Empire State Plaza, Albany, NY 12201

LABCODE = CT(ERI): (Connecticut analyses only) Environmental Research Institute, University of Connecticut, Storrs, CT 06269-5210.

In two respects, there are noticeable differences in results attributable to different methods used by the three labs: (1) there is a distinction in the number of "non-detects" (concentrations less than the method detection limit or MDL) evident among labs, probably arising from different MDL values used by the labs during analysis; and (2) the labs used different procedures to digest sediment samples prior to metal analysis, affecting results for several metals. Refer to Section 5.2.6 for discussion of the nature and implications of the discrepancies.

NCA planners provide two alternate locations for a station location in the event that the original location cannot be sampled. The parameter STA_ALT indicates whether the station location was the original site, first alternate, or second alternate—STA_ALT = "A", "B", or "C", respectively. Also refer to discussion in the STATIONS metadata file regarding use of this parameter during analysis of the data.

4.4 Summary of Dataset Parameters

* denotes parameters that should be used as key fields when merging data files

*STATION	Station name
*STAT_ALT	Alternate Site Code (A, B, C)
*EVNTDATE	Event date
*ANALYTE	Name of analyte measured. A list of the ANALYTE codes and their full chemical names is presented in the file ANALYTES; also see Section 7.1.3.
CONC	Concentration of analyte. Results fall into one of three categories: 1) the analyte concentration was large and reliably reported; 2) the analyte concentration was less than the method detection limit, but the best estimate of the concentration is reported; and 3) and the analyte was not detected and is reported as zero. See Section 4.3 for

	further discussion.
CHMUNITS	Concentration units used to report results, reported as the mass of analyte per dry mass of sediment: Metals ug/g (ppm) PAHs, PCBs, Pesticides ng/g (ppb)
MDL	Method Detection Limit; reported only when measured concentration is < MDL (see Section 4.3)
QACODE	QA/QC codes: <blank> CONC > MDL; concentration value is reliable CHM-A CONC is undetectable; value set to zero (user may wish to substitute another value) CHM-B CONC ≤ MDL, but is detectable; best estimate reported CHM-C failed QA criteria: an interference was noted in the blank analysis performed with the sample; caution is advised in interpreting the result See Section 4.3 for further discussion.
LABCODE	Code identifying laboratory responsible for performing chemical analyses CT(ERI) State laboratory for CT samples only NY State laboratory for NY samples only NAT_ADL National contract lab for other Northeast states
ANALTYPE	Code identifying type of analysis PEST Pesticides PAHs Polynuclear aromatic hydrocarbons PCBs Polychlorinated biphenyls METALS Metals

5.0 DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition / Field Sampling

The sample collection methods used by USEPA trained field crews will be described here. Any significant variations by NCA partners are noted in Section 5.1.12. Details regarding NCA partners are reported in the STATIONS data file.

5.1.1 Sampling Objective

Sediment sub-samples were collected for the analysis of metallic and organic chemical constituents. Separate sub-samples from the same grab were used for sediment grain-size analyses and toxicity testing. Additional sediment grabs were taken for benthic macrofaunal analysis.

5.1.2 Sample Collection: Methods Summary

Sediment was collected with a 0.04-m^2 Young-modified Van-Veen grab or similar sampler. Only the top two centimeters of a grab were retained for physical, chemical, and toxicological analyses. A sufficient number of grabs were processed to provide three liters of the 2-cm composite material. The composite was homogenized and separated into two fractions for storage until analysis. One fraction was frozen and used in the measurement of total organic carbon (TOC) and concentrations of chemical contaminants. The second fraction was chilled but not frozen during storage, and was used for grain-size and toxicity analyses. Separate sediment grabs were taken for benthic macrofaunal analysis.

5.1.3 Beginning Sampling Dates

25 June 2001

5.1.4 Ending Sampling Dates

31 October 2001

5.1.5 Sampling Platform

Samples were collected from gasoline or diesel powered boats, 18 to 133 feet in length.

5.1.6 Sampling Equipment

A 1/25 m2, stainless steel (coated with Kynar), Young-modified Van Veen grab sampler was used to collect sediments.

5.1.7 Manufacturer of Sampling Equipment

Young’s Welding, Sandwich, MA

5.1.8 Key Variables

Not applicable

5.1.9 Sample Collection: Methods Calibration

The sampling gear does not require calibration, although it was inspected regularly for damage by mishandling or impact on rocky substrates.

5.1.10 Sample Collection: Quality Control

Care was taken to minimize disturbance to the sediment grabs. Grabs that were incomplete, slumped, less than 7 cm in depth, or comprised chiefly of shelly substrates were discarded. The chance of sampling the same location was minimized by repositioning the boat five meters downstream after three sampling attempts.

5.1.11 Sample Collection: References

Strobel, C.J. 2000. Environmental Monitoring and Assessment Program: Coastal 2000 - Northeast component: field operations manual. Narragansett (RI): U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division. Report nr EPA/620/R-00/002. 68 p.

5.1.12 Sample Collection: Alternate Methods

Different grab samplers used by NCA partners include the Smith-MacIntyre and Ponar grab samplers.

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

Sediment samples were analyzed for total metals, PAHs, PCBs and pesticides.

5.2.2 Sample Processing: Methods Summary

All analyses were performed on samples that were stored frozen. Sediments analyzed for total metals were dried and completely digested in nitric/hydrofluoric acids (acid persulfate for mercury). The analytical methods used to measure analyte concentrations were: cold vapor atomic analysis (AA) for mercury; graphite furnace AA for silver, arsenic, cadmium, lead, antimony, tin and thallium; hydride generation atomic fluorescence for selenium; and optical-emission ionically coupled plasma (ICP) for the remaining metals. For the organic analyses, sediments were extracted using the procedures of NOAA National Status and Trends Program (Lauenstein and Cantillo, 1993). The PAHs were analyzed by gas-chromatography / mass-spectrometry (GC/MS); pesticides and PCBs were analyzed by GC/ECD (electron capture detector).

5.2.3 Sample Processing: Calibration

The analytical instruments were calibrated by standard laboratory procedures including: constructing calibration curves, running blank and spiked quality control samples, and analyzing standard reference materials.

5.2.4 Sample Processing: Quality Control (QC)

Each batch of samples was accompanied by QC analyses consisting of method blanks, matrix spikes, matrix spike duplicates, and standard reference materials (SRMs). In total, approximately 5% of all analyses were QC analyses. Processing quality was considered acceptable if the following criteria were met: blanks were less than three times the minimum detection limit; accuracy, as determined by analysis of certified reference materials, was within 30% for organic analytes and within 15% for inorganic analytes; and precision, as determined by replicate analyses, was within 30% for organic analytes and within 15% for inorganic analytes. Additional specifications and guidelines are presented in U.S. EPA 2001.

5.2.5 Sample Processing: References

Lauenstein, G. G. and A. Y. Cantillo (eds.). 1993. Sampling and analytical methods of the National Status and Trends Program National Benthic Surveillance and Mussel Watch Projects 1984-1992: Comprehensive descriptions of trace organic analytical methods, Volume IV NOAA Technical Memorandum NOS ORCA 71, Silver Spring, MD. 182 pp.

Texas A & M University, Geochemical and Environmental Research Group. 1990. NOAA Status and Trends, Mussel Watch Program, Analytical Methods. Submitted to NOAA. Rockville (MD): U.S. Dept. of Commerce, National Oceanic & Atmospheric Administration, Ocean Assessment Division.

U.S. EPA. 1995. Environmental Monitoring and Assessment Program (EMAP): Laboratory Methods Manual-Estuaries, Volume 1: Biological and Physical Analyses. Narragansett (RI): U.S. Environmental Protection Agency, Office of Research and Development, EPA/620/R-95/008.

U.S. EPA. 2001. Environmental Monitoring and Assessment Program (EMAP): National Coastal Assessment Quality Assurance Project Plan 2001-2004. U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL. EPA/620/R-01/002. 189 p

5.2.6 Sample Processing: Alternate Methods

Three analytical labs were involved in analyzing sediment analytes in 2000 and 2001: two state labs for sediment samples collected by co-operative teams in Connecticut and New York (designated by LABCODE = NY and CT(ERI)) and a national contract lab for samples collected in other northeastern states (LABCODE = NAT(ADL)). In two respects, there are noticeable differences in results attributable to different methods used by the three labs. (1) There is a distinction in the number of "non-detects" (concentrations less than the method detection limit or MDL) evident among labs, probably arising from different MDL values used by the labs during analysis. (2) The labs used different procedures to digest sediment samples prior to metal analysis, affecting results for several metals.

Different incidence of non-detects reported by analytical labs. Listed below are the percentages of records that are non-detects, distinguished by year, LABCODE, and type of analyte: pesticide, PCBs, PAHs, and metals. Non-detects are reported as zero in the NCA database (see Section 4.3).

Percentage of non-detects (zeros) in NCA 2000 & 2001 SEDCHEM file.

YEAR	LABCODE	pesticide	PCB	PAH	metal
2000	CT	93	81	53	8
	NY	88	66	0	18
	NAT	65	31	4	5
		pest	PCB	PAH	metal
2001	CT	98	95	59	8
	NY	86	64	N/A	23
	NAT	64	31	1	4

N/A: NY PAH data was not available in 2001.

Note the following: 1) A relatively large percentage of pesticide analyses are non-detects (an acceptable situation). However, there is a consistent difference in the 2000 & 2001 pesticide data among labs: CT > NY > NAT. Also, almost all CT analyses in 2001 were non-detects, a larger fraction than for CT in 2000. 2) The same observations hold for PCBs, i.e., CT > NY > NAT and CT2001 > CT2000. 3) For PAHs, only CT had significant incidence of non-detects in either year. 4) Relatively few non-detects were reported for metals, with roughly equal incidence among labs and years.

The three analytical labs used different MDL values when measuring chemical concentrations in sediment. In the case of pesticides and PCBs, the average MDL values were approximately 1 ppb for NY; 0.5 ppb for CT, and 0.25 ppb for NAT (averaged for all pesticides or PCBs). This observation may explain the relatively small rate of non-detects in pesticide and PCB analyses performed by the national contract; however, it doesn't explain the relative rate distinction between the NY and CT labs. Similarly, MDL values differed for PAH analyses: about 10 ppb for CT and about 2 ppb for NAT (NY did not report any MDLs for PAHs). MDL values were similar for all labs regarding metal analyses. Generally, the MDLs used by all labs were smaller than the limits required by the NCA program. In short, much of the discrepancy noted in the percentages of non-detects in 2000 & 2001 data probably arose because of the different MDL values employed by the three labs.

The implications of the differences highlighted above depend on how the data are used. Generally, the non-detects may be interpreted as 'very small concentrations'. Thus, the number of non-detects may be immaterial, for example, if the data are used primarily to identify polluted sites. However, the number of non-detects (zero values) may significantly affect calculated metrics such as averages, medians, expressions of variability, etc. Year-to-year inconsistencies in the use of MDL values may also confound the interpretation of temporal trends.

Different sediment digestion methods. Another important difference is evident among the three laboratories regarding the method of digestion performed on sediments prior to metal analysis in both 2000 and 2001. The national contract lab (LABCODE = NAT) used an HF/HNO3 digestion, while the state labs (LABCODE = CT and NY) used a less aggressive HNO3 digestion. To investigate the likely effects of the differing methods, archived sediment from all NY samples collected in 2000 were reanalyzed using the more aggressive HF/HNO3 digestion. A comparison of results can be expressed as linear regression of HF/HNO3 results vs HNO3 results:

Linear regression parameters of concentrations measured following an HF/HNO3 digestion vs an HNO3 digestion, i.e., HF/HNO3 = m*HNO3 + b:

Metal	slope (m)	intercept (b)	R^2
Al	3.13	15300	0.74
Fe	0.98	4660	0.92
Mn	0.76	203	0.73
As	0.68	0.47	0.78
Pb	0.95	9.70	0.95
Hg	1.01	-0.02	0.85
Ni	1.20	0.45	0.92
Zn	0.94	11.1	0.97
Cd	0.94	-0.68	0.77
Cr	1.41	10.5	0.96
Cu	1.33	-1.97	0.89
Ag	0.68	-0.6	0.81
Se	0.72	-0.28	0.44
Sb	0.02	0.08	0.09

Perfect agreement of methods would result in parameter values of m = 1, b = 0, and R^2 = 1. The HF/HNO3 digestion completely dissolves the aluminosilicate matrix of sediments, yielding significantly larger concentrations of crustal elements: Al, Fe, and Mn. Relatively good agreement was evident for both digestion methods for the most toxic elements that have designated ERM (effects range median) limits: As, Pb, Hg, Ni, Zn, Cd, Cr, and Cu (Pb and Cr values may be marginally elevated in HF/HNO3 digestions). There was poor agreement for the non-priority elements selenium (Se) and antimony (Sb). Note that the NY and CT data included in this database are the original results obtained following the non-standard HNO3 digestion.

6. DATA ANALYSIS AND MANIPULATIONS

6.1 Name of New or Modified Values

Not applicable

6.2 Data Manipulation Description

Concentrations of metallic analytes smaller than the method detection limit were reported as zero (see Section 4.3 for details).

7. DATA DESCRIPTION

7.1 Description of Parameters

7.1.1 Components of the Dataset

PARAMETER	TYPE	LENGTH	LABEL
ANALYTE	Char	8	Code for Analyte Measured
CONC	Num	8	Concentration of Analyte in Sample
CHMUNITS	Char	10	Unit of Measure
MDL	Num	8	Method Detection Limit
STATION	Char	9	Station Name
STAT_ALT	Char	1	Station Name
EVNTDATE	Num	8	Event Date
QACODE	Char	10	QA Code(s)
LABCODE	Char	8	Contract/Lab Identifier

7.1.2 Precision of Reported Values

All values have been rounded to three significant digits.

7.1.3 Minimum and Maximum Value in Dataset (non-zero data)

ID	NAME	Min	Max
Metals			
AG	Silver	0.06	6.95
AL	Aluminum	167	109000
AS	Arsenic	1	88.1
CD	Cadmium	0.02	40.6
CR	Chromium	2	332
CU	Copper	1	657
FE	Iron	465	53800
HG	Mercury	0.01	2.64
MN	Manganese	24	1790
NI	Nickel	1	55
PB	Lead	1	278
SB	Antimony	0.1	28.3
SE	Selenium	0.05	40.8
SN	Tin	0.1	118
ZN	Zinc	4	780

Polynuclear aromatic hydrocarbons (PAHs)

ACENTHE	Acenaphthene	0.031	490
ACENTHY	Acenaphthylene	0.03	560
ANTHRA	Anthracene	0.03	3500
BENANTH	Benz(a)anthracene	0.01	5800
BENAPY	Benz(a)pyrene	0.05	5200
BENZOBFL	Benzo(b)fluoranthene	0.04	5400
BENZOKFL	Benzo(k)fluoranthene	0.02	1400
BENZOP	Benzo(g,h,i)perylene	0.05	2200
BIPHENYL	Biphenyl	0.044	860
CHRYSENE	Chrysene	0.01	4600
DIBENTP	Dibenzothiophene	0.03	590
DIBENZ	Dibenz(a,h)anthracene	0.048	800
DIMETH	2,6-dimethylnaphthalene	0.039	250
FLUORANT	Fluoranthene	0.15	10000
FLUORENE	Fluorene	0.03	710
INDENO	Indeno (1,2,3-c,d) pyrene	0.05	2400
MENAP1	1-methylnaphthalene	0.065	295
MENAP2	2-methylnaphthalene	0.08	602
MEPHEN1	1-methylphenanthrene	0.038	1200
NAPH	Naphthalene	0.12	410
PYRENE	Pyrene	0.05	8500
TRIMETH	2,3,5-trimethylnaphthalene	0.025	230

Polychlorinated biphenyls (PCBs)

PCB8	2,4'-dichlorobiphenyl	0.021	82
PCB18	2,2',5-trichlorobiphenyl	0.029	371
PCB28	2,4,4'-trichlorobiphenyl	0.021	900
PCB44	2,2',3,5'-tetrachlorobiphenyl	0.018	260
PCB52	2,2',5,5'-tetrachlorobiphenyl	0.011	550
PCB66	2,3',4,4'-tetrachlorobiphenyl	0.011	367
PCB77	3,3',4,4'-tetrachlorobiphenyl	1.1	3.1
PCB77_CO	PCB77 co-elluted with PCB110	0.032	25
PCB101	2,2',4,5,5'-pentachlorobiphenyl	0.01	580
PCB105	2,3,3',4,4'-pentachlorobiphenyl	0.009	200
PCB110	2,3,3',4',6-pentachlorobiphenyl	1	41
PCB118	2,3',4,4',5-pentachlorobiphenyl	0.012	690

PCB126	3,3',4,4',5-pentachlorobiphenyl	0.15	0.68
PCB128	2,2',3,3',4,4'-hexachlorobiphenyl	0.007	110
PCB138	2,2',3,4,4',5'-hexachlorobiphenyl	0.016	510
PCB153	2,2',4,4',5,5'-hexachlorobiphenyl	0.015	590
PCB170	2,2',3,3',4,4',5-heptachlorobiphenyl	0.028	42
PCB180	2,2',3,4,4',5,5'-heptachlorobiphenyl	0.017	84
PCB187	2,2',3,4',5,5',6-heptachlorobiphenyl	0.007	44
PCB195	2,2',3,3',4,4',5,6-octachlorobiphenyl	0.003	8.5
PCB206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl	0.005	30
PCB209	2,2',3,3',4,4',5,5',6,6-decachlorobiphenyl	0.003	48
Pesticides			
ALDRIN	Aldrin	0.28	12
CISCHL	Alpha-Chlordane	0.006	8.9
DIELDRIN	Dieldrin	0.006	26
ENDOSUI	Endosulfan I	0.036	9.38
ENDOSUII	Endosulfan II	0.023	9.5
ENDOSULF	Endosulfan Sulfate	0.068	4.7
ENDRIN	Endrin	0.034	0.25
HEPTACHL	Heptachlor	0.012	2.7
HEPTAEPO	Heptachlor	0.013	3
HEXACHL	Hexachlorobenzene	0.002	13
LINDANE	Lindane (gamma-BHC)	0.005	130
MIREX	Mirex	0.005	9
OPDDD	2,4'-DDD	0.012	120
OPDDE	2,4'-DDE	0.014	71
OPDDT	2,4'-DDT	0.007	2.4
PPDDD	4,4'-DDD	0.015	330
PPDDE	4,4'-DDE	0.005	88
PPDDT	4,4'-DDT	0.009	250
TNONCHL	Trans-Nonachlor	0.005	12

7.1.4 Maximum Value in Dataset

See Section 7.1.3

7.2 Data Record Example

7.2.1 Column Names for Example Records

STATION	STAT_ALT	EVNTDATE	ANALYTE	CONC	QACODE	MDL	CHMUNITS	LABCODE

7.2.2 Example Data Records

STATION	STAT_ALT	EVNTDATE	ANALYTE	CONC	QACODE	MDL	CHMUNITS	LABCODE
CT01-0001	A	8/17/00	ACENTHE	0	CHM-A	8.33	ng/g	CT
CT01-0001	A	8/17/00	ACENTHY	0	CHM-A	8.33	ng/g	CT
CT01-0001	A	8/17/00	AG	0.75		.	ug/g	CT
CT01-0001	A	8/17/00	AL	4780	CHM-C	1500	ug/g	CT

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude (Westernmost)

-75.6977 decimal degrees

8.2 Maximum Longitude (Easternmost)

-67.0482 decimal degrees

8.3 Minimum Latitude (Southernmost)

38.4739 decimal degrees

8.4 Maximum Latitude (Northernmost)

45.1848 decimal degrees

8.5 Name of Region

The National Coastal Assessment Northeast Region covers the northeastern US coastline from Maine to Delaware

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Measurement Quality Objectives

Measure replicate grain size of samples to within a precision of 10% (see U.S. EPA 2001).

9.2 Data Quality Assurance Procedures

9.3 Actual Measurement Quality

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the web
http://www.epa.gov/emap/nca/html/regions/index.html

10.2 Data Access Restrictions

None

10.3 Data Access Contact Persons

John Kiddon, U.S. EPA NHEERL-AED, Narragansett, RI
401-782-3034, 401-782-3030 (FAX), kiddon.john@epa.gov

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401-782-3183, 401-782-3030 (FAX), buffum.harry@epa.gov

10.4 Dataset Format

ASCII (CSV) and SAS Export files

10.5 Information Concerning Anonymous FTP

Not available

10.6 Information Concerning WWW

No gopher access, see Section 10.1 for WWW access

10.7 EMAP CD-ROM Containing the Dataset

Data not available on CD-ROM

11. REFERENCES

Lauenstein, G. G. and A. Y. Cantillo (eds.). 1993. Sampling and analytical methods of the National Status and Trends Program National Benthic Surveillance and Mussel Watch Projects 1984-1992: Comprehensive descriptions of trace organic analytical methods, Volume IV NOAA Technical Memorandum NOS ORCA 71, Silver Spring, MD. 182 pp.

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12. TABLE OF ACRONYMS

AED	Atlantic Ecology Division
CSC	Computer Sciences Corporation
EMAP	Environmental Monitoring and Assessment Program
EPA	Environmental Protection Agency
MDL	Method Detection Limit
NCA	National Coastal Assessment
ng/g	Nano gram per gram
NHEERL	National Health and Environmental Effects Research Laboratory
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls

ppb	parts per billion
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
SRM	Standard Reference Material
TOC	Total Organic Carbon
ug/g	Micro gram per gram
WWW	World Wide Web

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