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## HISTORIC CHESAPEAKE BAY DATA ASSORTED BENTHIC SURVEYS FROM THE LOWER BAY, JAMES, YORK AND POTOMAC RIVERS DATA DICTIONARY

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Historic Chesapeake Bay Studies: Benthic Surveys from the Lower Chesapeake Bay Mainstem, James, York and Potomac Rivers.

- Taxonomic Data Dictionary
- Sediment Data Dictionary
- Water Quality Data Dictionary
- Event and Biota Event Data Dictionary

NOTE THIS DICTIONARY WAS REVISED ON 14 APRIL 2012 AND SUPERSEDES ALL OTHER CBP DICTIONARIES FOR THE VIRGINIA HISTORIC BENTHIC DATA

The current long-term benthic community monitoring programs initiated in the mid 1980's and run by the states of Maryland and Virginia were instrumental in development of the Chesapeake Bay Program Benthic Restoration Goals. However, there exists a large number of smaller effort benthic studies from around the Bay that would be very useful in establishing the direction of longer-term benthic trends. These smaller data sets range from published accounts on the dynamics of benthic communities, to student thesis and dissertations, to applied studies. In all cases the actual data used for these studies are kept by the authors and are generally not accessible for further analysis. This project was intended to demonstrate the feasibility and usefulness of adding historical benthic data to the EPA Chesapeake Bay Program Monitoring Data Base. A set of seven studies were selected, and compiled for use with the existing database.

### # NAMES AND DESCRIPTIONS OF ASSOCIATED DATA DICTIONARY FILE

2000 Users Guide to Chesapeake Bay Program Biological and Living Resources Monitoring Data

### #PROJECT TITLE:

Development of a historical database for benthic community data for Lower Chesapeake Bay: A pilot effort.

### PRINCIPLE PARTICIPANTS:

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>Project Manager: Robert J. Diaz, School of Marine Science, College of William and Mary

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### # FUNDING AGENCIES:

US. EPA Chesapeake Bay Program, project administered by the Interstate Commission on the Potomac River Basin.

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#LOCATION OF STUDY  
 Lower Chesapeake Bay, and tidal areas of the James, York and Potomac Rivers

# DATE INTERVALS  
 1973 to 1981.

# ABSTRACT

This project was intended to demonstrate the feasibility and usefulness of adding historical benthic data to the EPA Chesapeake Bay Program Monitoring Data Base. A set of seven studies were selected, and compiled for use with the existing Data Base. The addition of these historic data sets is hoped to aid the review of the major habitat and water quality goals of the Chesapeake Bay Program in respect to living resource issues. Benthic community data for Chesapeake Bay and its tributaries extend back to the late 1950's. Since then the Chesapeake has become the best studied estuarine system in North America for all aspects of estuarine ecology and modeling. The importance of benthos as an indicator and integrator of habitat quality has remained high through time, collimating in the development of the Benthic Restoration Goals document. The current long-term benthic community monitoring programs initiated in the mid 1980's and run by the states of Maryland and Virginia were instrumental in development of the Benthic Restoration Goals. However, there exist a large number of smaller effort benthic studies from around the Bay that could be very useful in establishing the direction of longer-term benthic trends. These smaller data sets range from published accounts on the dynamics of benthic communities, to student thesis and dissertations, to applied studies. In all cases the actual data used for these studies are kept by the authors and are generally not accessible for further analysis.

The studies selected for this pilot effort were:

Location	Date	Reference
Piney Point, Potomac River	1975	Virnstein & Boesch, 1975
Possum Point, Potomac River	1977-78	EA, 1979
Tangier Island, Chesapeake Bay	1975	Orth & Boesch, 1975
Amoco Refinery, Lower York River	1977	Hinde, 1981
Thimble Shoals, Chesapeake Bay	1981	Hobbs et al., 1985
Warwick River, James River	1975-76	Diaz & Boesch, 1976
James River	1981	Schaffner et al., 1987

These data sets are representative of the types of small studies that have been conducted throughout the Chesapeake and its tributaries.

# STATION NAMES AND DESCRIPTIONS

Each of the seven studies had different objectives and sampling designs. A brief description of each design is provided, followed by a complete listing of station names and locations. The first two digits of the station name refer to the study. All station positions are given in decimal degrees. PLEASE SEE THE ACCOMPANYING EVENT DOCUMENTATION BEFORE USING STATION LATITUDES AND LONGITUDES.

Amoco Refinery (AR), York River - Benthic samples were collected once (September 1977) from stations rectangular grid that was located around the Amoco Refinery pier, in the lower York River.

James River (JR), James River - Benthic samples were collected once (June 1976) from stations that span the length of the James River, from Hampton Roads to near Richmond. The stations were located to represent erosional and depositional environments along the estuarine gradient.

Possum Point (PO), Potomac River - Benthic samples were collected on five occasions (December 1977, February, April, July, October 1978) at stations located in the vicinity of the Possum Point Power Station in the Potomac River and Quantico Creek.

Piney Point (PP), Potomac River - Benthic samples were collected once (February 1975) from stations located around the Stuart Petroleum pier in the Potomac River.

Thimble Shoals (SM), Chesapeake Bay - Benthic samples were collected once (October 1981) from stations that covered the area between Thimble Shoal, the bridge-tunnel, and the mouth of Hampton Roads.

Tangier Island (TI), Chesapeake Bay - Benthic samples were collected once (May 1975) from located in Chesapeake Bay, off Tangier Island, in the vicinity of the end of the airport runway.

Warwick River (WO), James River - Benthic samples were collected on two occasions (June 1976, January 1977) from located around the outfall of a Hampton Roads Sanitation District outfall at the mouth of the Warwick River and out into the James River.

STATION NAMES, LATITUDES (decimal degrees) , LONGITUDES (decimal degrees), LATITUDES (degrees, minutes and decimal seconds), AND LONGITUDES (degrees, minutes and decimal seconds). All positions listed in the following table and data sets are in NAD83 coordinates.

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
ARC1_G	37.2418	-76.4264	37 14' 30.48"	-77 34' 24.96"
ARC4_G	37.2234	-76.4547	37 13' 24.24"	-77 32' 43.08"
ARD1_G	37.2201	-76.4564	37 13' 12.36"	-77 32' 36.96"
ARD2_G	37.2218	-76.4564	37 13' 18.48"	-77 32' 36.96"
ARD3_G	37.2234	-76.458	37 13' 24.24"	-77 32' 31.2"
ARD4_G	37.2268	-76.4597	37 13' 36.48"	-77 32' 25.08"
ARD5_G	37.2284	-76.4597	37 13' 42.24"	-77 32' 25.08"
ARD6_G	37.2301	-76.4597	37 13' 48.36"	-77 32' 25.08"
ARD7_G	37.2318	-76.4614	37 13' 54.48"	-77 32' 18.96"
ARE1_G	37.2201	-76.4514	37 13' 12.36"	-77 32' 54.96"
ARE2_G	37.2218	-76.4514	37 13' 18.48"	-77 32' 54.96"
ARE3_G	37.2234	-76.453	37 13' 24.24"	-77 32' 49.2"
ARE4_G	37.2268	-76.453	37 13' 36.48"	-77 32' 49.2"
ARE5_G	37.2284	-76.453	37 13' 42.24"	-77 32' 49.2"
ARE6_G	37.2301	-76.4547	37 13' 48.36"	-77 32' 43.08"

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
ARE7_G	37.2334	-76.4564	37 14' 0.24"	-77 32' 36.96"
ARF1_G	37.2201	-76.4464	37 13' 12.36"	-77 33' 12.96"
ARF2_G	37.2218	-76.4464	37 13' 18.48"	-77 33' 12.96"
ARF3_G	37.2251	-76.4464	37 13' 30.36"	-77 33' 12.96"
ARF4_G	37.2268	-76.448	37 13' 36.48"	-77 33' 7.2"
ARF5_G	37.2284	-76.448	37 13' 42.24"	-77 33' 7.2"
ARF6_G	37.2318	-76.4497	37 13' 54.48"	-77 33' 1.08"
ARF7_G	37.2334	-76.4497	37 14' 0.24"	-77 33' 1.08"
ARG1_G	37.2201	-76.4397	37 13' 12.36"	-77 33' 37.08"
ARG2_G	37.2234	-76.4414	37 13' 24.24"	-77 33' 30.96"
ARG3_G	37.2251	-76.4414	37 13' 30.36"	-77 33' 30.96"
ARG4_G	37.2268	-76.443	37 13' 36.48"	-77 33' 25.2"
ARG5_G	37.2284	-76.443	37 13' 42.24"	-77 33' 25.2"
ARG6_G	37.2318	-76.4447	37 13' 54.48"	-77 33' 19.08"
ARG7_G	37.2334	-76.4447	37 14' 0.24"	-77 33' 19.08"
ARH1_G	37.2201	-76.4347	37 13' 12.36"	-77 33' 55.08"

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
ARH2_G	37.2234	-76.4364	37 13' 24.24"	-77 33' 48.96"
ARH3_G	37.2251	-76.4364	37 13' 30.36"	-77 33' 48.96"
ARH4_G	37.2268	-76.438	37 13' 36.48"	-77 33' 43.2"
ARH5_G	37.2301	-76.438	37 13' 48.36"	-77 33' 43.2"
ARH6_G	37.2318	-76.4397	37 13' 54.48"	-77 33' 37.08"
ARH7_G	37.2334	-76.4397	37 14' 0.24"	-77 33' 37.08"
ARI1_G	37.2218	-76.4297	37 13' 18.48"	-77 34' 13.08"
ARI3_G	37.2251	-76.4314	37 13' 30.36"	-77 34' 6.96"
ARI4_G	37.2284	-76.4314	37 13' 42.24"	-77 34' 6.96"
ARI5_G	37.2301	-76.433	37 13' 48.36"	-77 34' 1.2"
ARI6_G	37.2318	-76.433	37 13' 54.48"	-77 34' 1.2"
ARI7_G	37.2334	-76.433	37 14' 0.24"	-77 34' 1.2"
ARJ1_G	37.2218	-76.423	37 13' 18.48"	-77 34' 37.2"
ARJ2_G	37.2234	-76.4247	37 13' 24.24"	-77 34' 31.08"
ARJ3_G	37.2268	-76.4264	37 13' 36.48"	-77 34' 24.96"
ARJ4_G	37.2284	-76.4264	37 13' 42.24"	-77 34' 24.96"
ARJ5_G	37.2301	-76.428	37 13' 48.36"	-77 34' 19.2"
ARJ6_G	37.2318	-76.428	37 13' 54.48"	-77 34' 19.2"
ARJ7_G	37.2434	-76.4297	37 14' 36.24"	-77 34' 13.08"
ARK1_G	37.2218	-76.418	37 13' 18.48"	-77 34' 55.2"
ARK2_G	37.2234	-76.4197	37 13' 24.24"	-77 34' 49.08"
ARK3_G	37.2268	-76.4197	37 13' 36.48"	-77 34' 49.08"
ARK4_G	37.2284	-76.4214	37 13' 42.24"	-77 34' 42.96"
ARK5_G	37.2301	-76.4214	37 13' 48.36"	-77 34' 42.96"
ARK6_G	37.2334	-76.423	37 14' 0.24"	-77 34' 37.2"
ARK7_G	37.2351	-76.423	37 14' 6.36"	-77 34' 37.2"
ARL1_G	37.2218	-76.413	37 13' 18.48"	-77 35' 13.2"
ARL2_G	37.2251	-76.4147	37 13' 30.36"	-77 35' 7.08"
ARL3_G	37.2268	-76.4147	37 13' 36.48"	-77 35' 7.08"
ARL4_G	37.2284	-76.4164	37 13' 42.24"	-77 35' 0.96"
ARL5_G	37.2301	-76.4164	37 13' 48.36"	-77 35' 0.96"
ARL6_G	37.2334	-76.4164	37 14' 0.24"	-77 35' 0.96"
ARL7_G	37.2351	-76.418	37 14' 6.36"	-77 34' 55.2"
ARM1_G	37.2218	-76.408	37 13' 18.48"	-77 35' 31.2"
ARM2_G	37.2251	-76.408	37 13' 30.36"	-77 35' 31.2"
ARM3_G	37.2218	-76.408	37 13' 18.48"	-77 35' 31.2"
ARM4_G	37.2284	-76.4097	37 13' 42.24"	-77 35' 25.08"
ARM5_G	37.2301	-76.4114	37 13' 48.36"	-77 35' 18.96"
ARM6_G	37.2334	-76.4114	37 14' 0.24"	-77 35'

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
				18.96"
ARM7_G	37.2351	-76.413	37 14' 6.36"	-77 35' 13.2"
ARN1_G	37.2234	-76.403	37 13' 24.24"	-77 35' 49.2"
ARN3_G	37.2268	-76.4047	37 13' 36.48"	-77 35' 43.08"
ARN4_G	37.2284	-76.4047	37 13' 42.24"	-77 35' 43.08"
ARN5_G	37.2318	-76.4064	37 13' 54.48"	-77 35' 36.96"
ARN6_G	37.2334	-76.4064	37 14' 0.24"	-77 35' 36.96"
ARN7_G	37.2351	-76.408	37 14' 6.36"	-77 35' 31.2"
ARO1_G	37.2234	-76.398	37 13' 24.24"	-77 36' 7.2"
ARO2_G	37.2251	-76.398	37 13' 30.36"	-77 36' 7.2"
ARO3_G	37.2268	-76.3997	37 13' 36.48"	-77 36' 1.08"
ARO4_G	37.2301	-76.3997	37 13' 48.36"	-77 36' 1.08"
ARO5_G	37.2318	-76.4014	37 13' 54.48"	-77 35' 54.96"
ARO6_G	37.2334	-76.4014	37 14' 0.24"	-77 35' 54.96"
ARO7_G	37.2368	-76.4014	37 14' 12.48"	-77 35' 54.96"
ARP1_G	37.2234	-76.393	37 13' 24.24"	-77 36' 25.2"
ARP2_G	37.2251	-76.393	37 13' 30.36"	-77 36' 25.2"
ARP4_G	37.2301	-76.3947	37 13' 48.36"	-77 36' 19.08"
ARP5_G	37.2318	-76.3947	37 13' 54.48"	-77 36' 19.08"
ARP6_G	37.2334	-76.3964	37 14' 0.24"	-77 36' 12.96"
ARP7_G	37.2368	-76.3964	37 14' 12.48"	-77 36' 12.96"
ARQ1_G	37.2234	-76.3864	37 13' 24.24"	-77 36' 48.96"
ARQ2_G	37.2268	-76.388	37 13' 36.48"	-77 36' 43.2"
ARQ3_G	37.2284	-76.388	37 13' 42.24"	-77 36' 43.2"
ARQ4_G	37.2301	-76.3897	37 13' 48.36"	-77 36' 37.08"
ARQ5_G	37.2318	-76.3897	37 13' 54.48"	-77 36' 37.08"
ARQ6_G	37.2351	-76.3897	37 14' 6.36"	-77 36' 37.08"
ARQ7_G	37.2368	-76.3914	37 14' 12.48"	-77 36' 30.96"
ARR1_G	37.2234	-76.3814	37 13' 24.24"	-77 37' 6.96"
ARR2_G	37.2268	-76.3814	37 13' 36.48"	-77 37' 6.96"
ARR3_G	37.2284	-76.383	37 13' 42.24"	-77 37' 1.2"
ARR4_G	37.2301	-76.383	37 13' 48.36"	-77 37' 1.2"
ARR5_G	37.2334	-76.3847	37 14' 0.24"	-77 36' 55.08"
ARR6_G	37.2351	-76.3847	37 14' 6.36"	-77 36' 55.08"
ARR7_G	37.2351	-76.3864	37 14' 6.36"	-77 36' 48.96"
ARS1_G	37.2234	-76.3764	37 13' 24.24"	-77 37'

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
				24.96"
ARS2_G	37.2268	-76.3764	37 13' 36.48"	-77 37' 24.96"
ARS3_G	37.2284	-76.378	37 13' 42.24"	-77 37' 19.2"
ARS4_G	37.2301	-76.378	37 13' 48.36"	-77 37' 19.2"
ARS5_G	37.2334	-76.3797	37 14' 0.24"	-77 37' 13.08"
ARS6_G	37.2351	-76.3797	37 14' 6.36"	-77 37' 13.08"
ARS7_G	37.2368	-76.3797	37 14' 12.48"	-77 37' 13.08"
ART1_G	37.2251	-76.3697	37 13' 30.36"	-77 37' 49.08"
ART2_G	37.2268	-76.3714	37 13' 36.48"	-77 37' 42.96"
ART3_G	37.2284	-76.373	37 13' 42.24"	-77 37' 37.2"
ART4_G	37.2318	-76.373	37 13' 54.48"	-77 37' 37.2"
ART5_G	37.2334	-76.373	37 14' 0.24"	-77 37' 37.2"
ART6_G	37.2351	-76.3747	37 14' 6.36"	-77 37' 31.08"
ART7_G	37.2368	-76.3764	37 14' 12.48"	-77 37' 24.96"
ARU1_G	37.2251	-76.3647	37 13' 30.36"	-77 38' 7.08"
ARU2_G	37.2268	-76.3664	37 13' 36.48"	-77 38' 0.96"
ARU3_G	37.2301	-76.3664	37 13' 48.36"	-77 38' 0.96"
ARU4_G	37.2318	-76.368	37 13' 54.48"	-77 37' 55.2"
ARU5_G	37.2334	-76.368	37 14' 0.24"	-77 37' 55.2"
ARU6_G	37.2351	-76.3697	37 14' 6.36"	-77 37' 49.08"
ARU7_G	37.2384	-76.3697	37 14' 18.24"	-77 37' 49.08"
ARV1_G	37.2251	-76.3597	37 13' 30.36"	-77 38' 25.08"
ARV2_G	37.2268	-76.3597	37 13' 36.48"	-77 38' 25.08"
ARV3_G	37.2301	-76.3614	37 13' 48.36"	-77 38' 18.96"
ARV4_G	37.2318	-76.3614	37 13' 54.48"	-77 38' 18.96"
ARV5_G	37.2334	-76.363	37 14' 0.24"	-77 38' 13.2"
ARV6_G	37.2368	-76.363	37 14' 12.48"	-77 38' 13.2"
ARV7_G	37.2384	-76.3647	37 14' 18.24"	-77 38' 7.08"
JRT006	36.9884	-76.468	36 59' 18.24"	-77 31' 55.2"
JRT007	37.0301	-76.548	37 1' 48.36"	-77 27' 7.2"
JRT008	37.0484	-76.618	37 2' 54.24"	-77 22' 55.2"
JRT009	37.1118	-76.6464	37 6' 42.48"	-77 21' 12.96"
JRT010	37.1684	-76.6447	37 10' 6.24"	-77 21' 19.08"
JRT012	37.2201	-76.908	37 13' 12.36"	-77 5' 31.2"
JRT013	37.2968	-77.028	37 17' 48.48"	-78 58' 19.2"
JRT102	36.9468	-76.428	36 56' 48.48"	-77 34' 19.2"
JRT232	37.1951	-76.778	37 11' 42.36"	-77 13' 19.2"
JRT233	37.3268	-77.3147	37 19' 36.48"	-78 41' 7.08"

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
JRT402	36.9601	-76.3347	36 57' 36.36"	-77 39' 55.08"
JRT406	37.0068	-76.5064	37 0' 24.48"	-77 29' 36.96"
JRT407	37.0468	-76.528	37 2' 48.48"	-77 28' 19.2"
JRT408	37.0568	-76.6514	37 3' 24.48"	-77 20' 54.96"
JRT409	37.0901	-76.643	37 5' 24.36"	-77 21' 25.2"
JRT410	37.2084	-76.6764	37 12' 30.24"	-77 19' 24.96"
JRT411	37.2201	-76.8197	37 13' 12.36"	-77 10' 49.08"
JRT412	37.2151	-76.883	37 12' 54.36"	-77 7' 1.2"
JRT413	37.2868	-77.0847	37 17' 12.48"	-78 54' 55.08"
JRT414	37.3018	-77.1297	37 18' 6.48"	-78 52' 13.08"
JRT432	37.2018	-76.708	37 12' 6.48"	-77 17' 31.2"
JRT433	37.0501	-76.5847	37 3' 0.36"	-77 24' 55.08"
JRT434	37.0468	-76.5197	37 2' 48.48"	-77 28' 49.08"
JRT437	37.3101	-77.2614	37 18' 36.36"	-78 44' 18.96"
PO1PR1	38.5634	-77.2542	38 33' 48.24"	-78 44' 44.88"
PO1PR2	38.5634	-77.2542	38 33' 48.24"	-78 44' 44.88"
PO1PR3	38.5634	-77.2542	38 33' 48.24"	-78 44' 44.88"
PO1PR4	38.5634	-77.2542	38 33' 48.24"	-78 44' 44.88"
PO1PR5	38.5634	-77.2542	38 33' 48.24"	-78 44' 44.88"
PO2PR1	38.5471	-77.271	38 32' 49.56"	-78 43' 44.4"
PO2PR2	38.5471	-77.271	38 32' 49.56"	-78 43' 44.4"
PO2PR3	38.5471	-77.271	38 32' 49.56"	-78 43' 44.4"
PO2PR4	38.5471	-77.271	38 32' 49.56"	-78 43' 44.4"
PO2PR5	38.5471	-77.271	38 32' 49.56"	-78 43' 44.4"
PO2QC1	38.5488	-77.2975	38 32' 55.68"	-78 42' 9"
PO2QC2	38.5488	-77.2975	38 32' 55.68"	-78 42' 9"
PO2QC3	38.5488	-77.2975	38 32' 55.68"	-78 42' 9"
PO2QC4	38.5488	-77.2975	38 32' 55.68"	-78 42' 9"
PO2QC5	38.5488	-77.2975	38 32' 55.68"	-78 42' 9"
PO4PR1	38.5284	-77.2805	38 31' 42.24"	-78 43' 10.2"
PO4PR2	38.5284	-77.2805	38 31' 42.24"	-78 43' 10.2"
PO4PR3	38.5284	-77.2805	38 31' 42.24"	-78 43' 10.2"
PO4PR4	38.5284	-77.2805	38 31' 42.24"	-78 43' 10.2"
PO4PR5	38.5284	-77.2805	38 31' 42.24"	-78 43' 10.2"
PO4QC1	38.5346	-77.2867	38 32' 4.56"	-78 42' 47.88"
PO4QC2	38.5346	-77.2867	38 32' 4.56"	-78 42' 47.88"
PO4QC3	38.5346	-77.2867	38 32' 4.56"	-78 42'

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
				47.88"
PO4QC4	38.5346	-77.2867	38 32' 4.56"	-78 42' 47.88"
PO4QC5	38.5346	-77.2867	38 32' 4.56"	-78 42' 47.88"
PO5PR1	38.5138	-77.2895	38 30' 49.68"	-78 42' 37.8"
PO5PR2	38.5138	-77.2895	38 30' 49.68"	-78 42' 37.8"
PO5PR3	38.5138	-77.2895	38 30' 49.68"	-78 42' 37.8"
PO5PR4	38.5138	-77.2895	38 30' 49.68"	-78 42' 37.8"
PO5PR5	38.5138	-77.2895	38 30' 49.68"	-78 42' 37.8"
PO6QC1	38.5304	-77.2839	38 31' 49.44"	-78 42' 57.96"
PO6QC2	38.5304	-77.2839	38 31' 49.44"	-78 42' 57.96"
PO6QC3	38.5304	-77.2839	38 31' 49.44"	-78 42' 57.96"
PO6QC4	38.5304	-77.2839	38 31' 49.44"	-78 42' 57.96"
PO6QC5	38.5304	-77.2839	38 31' 49.44"	-78 42' 57.96"
PO7PR1	38.4788	-77.3102	38 28' 43.68"	-78 41' 23.28"
PO7PR2	38.4788	-77.3102	38 28' 43.68"	-78 41' 23.28"
PO7PR3	38.4788	-77.3102	38 28' 43.68"	-78 41' 23.28"
PO7PR4	38.4788	-77.3102	38 28' 43.68"	-78 41' 23.28"
PO7PR5	38.4788	-77.3102	38 28' 43.68"	-78 41' 23.28"
PP__3	38.0584	-76.383	38 3' 30.24"	-77 37' 1.2"
PP__5	38.0668	-76.458	38 4' 0.48"	-77 32' 31.2"
PP__7	38.1001	-76.458	38 6' 0.36"	-77 32' 31.2"
PP__9	38.1084	-76.533	38 6' 30.24"	-77 28' 1.2"
PP__A	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__B	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__D	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__I	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__J	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__L	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__Q	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__R	38.1284	-76.533	38 7' 42.24"	-77 28' 1.2"
PP__11	38.1334	-76.5164	38 8' 0.24"	-77 29' 0.96"
PP__15	38.1501	-76.558	38 9' 0.36"	-77 26' 31.2"
PP__17	38.1834	-76.5497	38 11' 0.24"	-77 27' 1.08"
SMBP11	36.9901	-76.2947	36 59' 24.36"	-77 42' 19.08"
SMBP12	36.9901	-76.2947	36 59' 24.36"	-77 42' 19.08"
SMBP21	36.9884	-76.288	36 59' 18.24"	-77 42' 43.2"
SMBP22	36.9884	-76.288	36 59' 18.24"	-77 42' 43.2"
SMBP31	36.9884	-76.293	36 59' 18.24"	-77 42' 25.2"
SMBP32	36.9884	-76.293	36 59' 18.24"	-77 42' 25.2"

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
SMBP41	36.9901	-76.2914	36 59' 24.36"	-77 42' 30.96"
SMBP42	36.9901	-76.2914	36 59' 24.36"	-77 42' 30.96"
SMBP51	36.9901	-76.2847	36 59' 24.36"	-77 42' 55.08"
SMBP52	36.9901	-76.2847	36 59' 24.36"	-77 42' 55.08"
SMBP61	36.9734	-76.2897	36 58' 24.24"	-77 42' 37.08"
SMBP62	36.9734	-76.2897	36 58' 24.24"	-77 42' 37.08"
SMBP71	36.9918	-76.2947	36 59' 30.48"	-77 42' 19.08"
SMBP72	36.9918	-76.2947	36 59' 30.48"	-77 42' 19.08"
SMBP81	36.9901	-76.288	36 59' 24.36"	-77 42' 43.2"
SMBP82	36.9901	-76.288	36 59' 24.36"	-77 42' 43.2"
SMTS01	37.0184	-76.263	37 1' 6.24"	-77 44' 13.2"
SMTS02	37.0234	-76.2614	37 1' 24.24"	-77 44' 18.96"
SMTS03	37.0251	-76.253	37 1' 30.36"	-77 44' 49.2"
SMTS04	37.0218	-76.2547	37 1' 18.48"	-77 44' 43.08"
SMTS05	37.0201	-76.2464	37 1' 12.36"	-77 45' 12.96"
SMTS06	37.0251	-76.248	37 1' 30.36"	-77 45' 7.2"
SMTS07	37.0318	-76.2397	37 1' 54.48"	-77 45' 37.08"
SMTS08	37.0334	-76.238	37 2' 0.24"	-77 45' 43.2"
SMTS09	37.0334	-76.2314	37 2' 0.24"	-77 46' 6.96"
SMTS10	37.0284	-76.2264	37 1' 42.24"	-77 46' 24.96"
SMTS11	37.0301	-76.2264	37 1' 48.36"	-77 46' 24.96"
SMTS12	37.0384	-76.2247	37 2' 18.24"	-77 46' 31.08"
SMTS13	37.0384	-76.2214	37 2' 18.24"	-77 46' 42.96"
SMTS14	37.0384	-76.2114	37 2' 18.24"	-77 47' 18.96"
SMTS15	37.0701	-76.1864	37 4' 12.36"	-77 48' 48.96"
SMTS16	37.0334	-76.1847	37 2' 0.24"	-77 48' 55.08"
SMTS17	37.0284	-76.173	37 1' 42.24"	-77 49' 37.2"
SMTS18	37.0284	-76.173	37 1' 42.24"	-77 49' 37.2"
SMTS19	37.0368	-76.158	37 2' 12.48"	-77 50' 31.2"
SMTS20	37.0268	-76.1564	37 1' 36.48"	-77 50' 36.96"
SMTS21	37.0268	-76.163	37 1' 36.48"	-77 50' 13.2"
SMTS22	37.0234	-76.1614	37 1' 24.24"	-77 50' 18.96"
SMTS23	37.0151	-76.1647	37 0' 54.36"	-77 50' 7.08"
SMTS24	37.0034	-76.1514	37 0' 12.24"	-77 50'

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
				54.96"
SMTS25	36.9984	-76.1497	36 59' 54.24"	-77 51' 1.08"
SMTS26	37.0134	-76.1714	37 0' 48.24"	-77 49' 42.96"
SMTS27	37.0201	-76.1897	37 1' 12.36"	-77 48' 37.08"
SMTS28	37.0201	-76.1947	37 1' 12.36"	-77 48' 19.08"
SMTS29	37.0234	-76.2047	37 1' 24.24"	-77 47' 43.08"
SMTS30	37.0218	-76.2097	37 1' 18.48"	-77 47' 25.08"
SMTS31	37.0218	-76.2114	37 1' 18.48"	-77 47' 18.96"
SMTS32	37.0301	-76.2114	37 1' 48.36"	-77 47' 18.96"
SMTS34	37.0301	-76.2164	37 1' 48.36"	-77 47' 0.96"
SMTS35	37.0284	-76.2147	37 1' 42.24"	-77 47' 7.08"
SMW01_	36.9918	-76.2697	36 59' 30.48"	-77 43' 49.08"
SMW02_	36.9918	-76.283	36 59' 30.48"	-77 43' 1.2"
SMW03_	36.9718	-76.2647	36 58' 18.48"	-77 44' 7.08"
SMW04_	36.9734	-76.2614	36 58' 24.24"	-77 44' 18.96"
SMW05_	37.0484	-76.2347	37 2' 54.24"	-77 45' 55.08"
SMW06_	37.0451	-76.2347	37 2' 42.36"	-77 45' 55.08"
SMW07_	36.9851	-76.2347	36 59' 6.36"	-77 45' 55.08"
SMW08_	37.0534	-76.2264	37 3' 12.24"	-77 46' 24.96"
SMW09_	37.0568	-76.223	37 3' 24.48"	-77 46' 37.2"
SMW10_	36.9851	-76.2147	36 59' 6.36"	-77 47' 7.08"
SMW11_	36.9684	-76.203	36 58' 6.24"	-77 47' 49.2"
SMW12_	36.9534	-76.1997	36 57' 12.24"	-77 48' 1.08"
SMW13_	37.0118	-76.1997	37 0' 42.48"	-77 48' 1.08"
SMW14_	36.9618	-76.198	36 57' 42.48"	-77 48' 7.2"
SMW15_	36.9834	-76.1947	36 59' 0.24"	-77 48' 19.08"
SMW16_	36.9734	-76.1897	36 58' 24.24"	-77 48' 37.08"
SMW17_	36.9984	-76.1814	36 59' 54.24"	-77 49' 6.96"
SMW18_	36.9551	-76.1747	36 57' 18.36"	-77 49' 31.08"
SMW19_	36.9768	-76.173	36 58' 36.48"	-77 49' 37.2"
SMW20_	36.9618	-76.168	36 57' 42.48"	-77 49' 55.2"
SMW21_	36.9434	-76.1714	36 56' 36.24"	-77 49' 42.96"
SMW22_	36.9734	-76.1597	36 58' 24.24"	-77 50' 25.08"
SMW23_	36.9768	-76.1497	36 58' 36.48"	-77 51' 1.08"
SMW24_	37.0234	-76.148	37 1' 24.24"	-77 51' 7.2"
SMW25_	36.9618	-76.1464	36 57' 42.48"	-77 51' 12.96"

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
SMW26_	36.9768	-76.1397	36 58' 36.48"	-77 51' 37.08"
SMW27_	37.0018	-76.1364	37 0' 6.48"	-77 51' 48.96"
SMW28_	36.9834	-76.133	36 59' 0.24"	-77 52' 1.2"
SMW29_	37.0218	-76.128	37 1' 18.48"	-77 52' 19.2"
SMW30_	37.0251	-76.123	37 1' 30.36"	-77 52' 37.2"
SMW31_	36.9884	-76.123	36 59' 18.24"	-77 52' 37.2"
SMW32_	37.0251	-76.118	37 1' 30.36"	-77 52' 55.2"
SMW33_	37.0218	-76.1147	37 1' 18.48"	-77 53' 7.08"
SMW34_	37.0068	-76.1097	37 0' 24.48"	-77 53' 25.08"
SMW35_	37.0051	-76.1097	37 0' 18.36"	-77 53' 25.08"
SMWB01	36.9918	-76.2847	36 59' 30.48"	-77 42' 55.08"
SMWB02	36.9918	-76.283	36 59' 30.48"	-77 43' 1.2"
SMWB04	36.9918	-76.2747	36 59' 30.48"	-77 43' 31.08"
SMWB05	36.9968	-76.273	36 59' 48.48"	-77 43' 37.2"
SMWB06	36.9951	-76.268	36 59' 42.36"	-77 43' 55.2"
SMWB07	36.9951	-76.2664	36 59' 42.36"	-77 44' 0.96"
SMWB08	36.9968	-76.2614	36 59' 48.48"	-77 44' 18.96"
SMWB09	37.0001	-76.2497	37 0' 0.36"	-77 45' 1.08"
SMWB10	36.9984	-76.2447	36 59' 54.24"	-77 45' 19.08"
SMWB11	37.0001	-76.2547	37 0' 0.36"	-77 44' 43.08"
SMWB12	36.9968	-76.263	36 59' 48.48"	-77 44' 13.2"
SMWB13	36.9968	-76.2647	36 59' 48.48"	-77 44' 7.08"
SMWB14	36.9984	-76.2664	36 59' 54.24"	-77 44' 0.96"
SMWB15	36.9934	-76.273	36 59' 36.24"	-77 43' 37.2"
TI_1_	37.8218	-76.0014	37 49' 18.48"	-77 59' 54.96"
TI_2_	37.8218	-76.0047	37 49' 18.48"	-77 59' 43.08"
TI_3_	37.8218	-76.0064	37 49' 18.48"	-77 59' 36.96"
TI_4_	37.8218	-76.008	37 49' 18.48"	-77 59' 31.2"
TI_5_	37.8218	-76.008	37 49' 18.48"	-77 59' 31.2"
TI_6_	37.8218	-76.0114	37 49' 18.48"	-77 59' 18.96"
TI_7_	37.8201	-76.0014	37 49' 12.36"	-77 59' 54.96"
TI_8_	37.8201	-76.0047	37 49' 12.36"	-77 59' 43.08"
TI_9_	37.8201	-76.0064	37 49' 12.36"	-77 59' 36.96"
TI10_	37.8201	-76.008	37 49' 12.36"	-77 59' 31.2"
TI11_	37.8201	-76.0097	37 49' 12.36"	-77 59' 25.08"
TI12_	37.8201	-76.0114	37 49' 12.36"	-77 59' 18.96"

STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)	STATION	LATITUDE	LONGITUDE	LATITUDE (DMS)	LONGITUDE (DMS)
TI13__	37.8201	-76.0064	37 49' 12.36"	-77 59' 36.96"	WO_7_2	37.0734	-76.5347	37 4' 24.24"	-77 27' 55.08"
WO_1_1	37.0918	-76.553	37 5' 30.48"	-77 26' 49.2"	WO_8_1	37.0751	-76.5464	37 4' 30.36"	-77 27' 12.96"
WO_1_2	37.0918	-76.553	37 5' 30.48"	-77 26' 49.2"	WO_8_2	37.0751	-76.5464	37 4' 30.36"	-77 27' 12.96"
WO_2_1	37.0784	-76.5414	37 4' 42.24"	-77 27' 30.96"	WO_9_1	37.0668	-76.5347	37 4' 0.48"	-77 27' 55.08"
WO_2_2	37.0784	-76.5414	37 4' 42.24"	-77 27' 30.96"	WO_9_2	37.0668	-76.5347	37 4' 0.48"	-77 27' 55.08"
WO_3_1	37.0784	-76.538	37 4' 42.24"	-77 27' 43.2"	WO10_1	37.0768	-76.573	37 4' 36.48"	-77 25' 37.2"
WO_3_2	37.0784	-76.538	37 4' 42.24"	-77 27' 43.2"	WO10_2	37.0768	-76.573	37 4' 36.48"	-77 25' 37.2"
WO_4_1	37.0784	-76.533	37 4' 42.24"	-77 28' 1.2"	WO11_1	37.0634	-76.5547	37 3' 48.24"	-77 26' 43.08"
WO_4_2	37.0784	-76.533	37 4' 42.24"	-77 28' 1.2"	WO11_2	37.0634	-76.5547	37 3' 48.24"	-77 26' 43.08"
WO_5_1	37.0768	-76.5414	37 4' 36.48"	-77 27' 30.96"	WO12_1	37.0551	-76.528	37 3' 18.36"	-77 28' 19.2"
WO_5_2	37.0768	-76.5414	37 4' 36.48"	-77 27' 30.96"	WO12_2	37.0551	-76.528	37 3' 18.36"	-77 28' 19.2"
WO_6_1	37.0751	-76.5397	37 4' 30.36"	-77 27' 37.08"	WO13_1	36.9968	-76.5214	36 59' 48.48"	-77 28' 42.96"
WO_6_2	37.0751	-76.5397	37 4' 30.36"	-77 27' 37.08"	WO13_2	36.9968	-76.5214	36 59' 48.48"	-77 28' 42.96"
WO_7_1	37.0734	-76.5347	37 4' 24.24"	-77 27' 55.08"					

#METHODOLOGY DESCRIBING CHAIN OF CUSTODY FOR LAB SAMPLES  
NOT APPLICABLE

#REFERENCES FOR BIOLOGICAL ENUMERATION TECHNIQUES, CALCULATIONS  
AND QA/QC PLANS FOR PROJECTS

Diaz, R.J. and D.F. Boesch. 1976. Environmental effects of the James River sewage treatment plant outfall construction: soft bottom macrobenthos. VIMS Rpt. to Hampton Roads Sanitation District, Hampton, VA. 32 p.

Ecological Analysts, Inc. 1979. Possum Point power station aquatic monitoring study. ER Rpt. No. VEP82. Final Report for Virginia Electric and power Company, Richmond, VA.

Hinde, P. 1981. Macrobenthic community structure in the vicinity of an oil refinery: a consideration of sampling design and statistical techniques. M.A. Thesis, College of William and Mary, Williamsburg, VA. 180 p.

Hobbs, C.H., R.J. Byrne, R.A. Gammisch and R.J. Diaz. 1985. Sand for beach nourishment in lower Chesapeake Bay. Coastal Zone '85, pp. 790-811.

Orth, R.J. and D.F. Boesch. 1975. Reconnaissance survey of benthic communities of a potential borrow site off Tangier Island, Virginia. VIMS Rpt. to Virginia Airports Authority, Richmond, VA. 15 p.

Schaffner, L.C., R.J. Diaz, C.R. Olsen and I.L. Larsen. 1987. Faunal characteristics and sediment accumulation processes in the James River estuary, Virginia. Estur. Coastal. Shelf Sci. 25:211-226.

Virnstein, R. and D.F. Boesch. 1975. Benthic communities around the Stuart Petroleum pier, Piney Point, MD. VIMS Rpt. to Stuart Petroleum. This citation is not complete because the original report was not located.

## #BIOLOGICAL ENUMERATION TECHNIQUES

Field samples were rinsed and sieved through the designated size mesh to concentrate organisms. Organisms were sorted using a dissecting microscope and sorted to the lowest practical taxonomic level.

## &gt;FORMULAS AND CALCULATIONS

Multiplication of organism count per taxon by conversion factor will give concentration of organisms per meter squared.

$$\text{DENSITY PER METER SQUARED} = \text{CNT\_TAX} * \text{CONVFACT}$$

## # BIOLOGICAL VARIABLE NAMES, MEASUREMENT UNITS AND DESCRIPTIONS

## &gt;PARAMETER: SAMPLE\_DATE

-COLLECTION METHODS: Actual sampling dates were not available for most data included in this data set. Actual sampling dates were available only for data collected as part of the Piney Point or Tangier Island studies. Date was attributed to a month and year in all other studies, there for all sampling dates have been recorded as the 30 or 31st of the month prior to which the data was collected.

-SAMPLE PRESERVATIVES: N/A

-SAMPLE STORAGE ENVIRONMENT: N/A

-TIME IN STORAGE: N/A

## &gt;PARAMETER: COUNT (organism count by taxon, in sample)

-COLLECTION METHODS: Benthic Taxon Counts.

\*\*\*Ameco Refinery (AR), York River - At each station a single a single 0.10 m2 Smith-MacIntyre grab sample was collected.

\*\*\*James River (JR), James River - At 11 stations, a single 0.06 m2 spade box core sample was collected, and at 14 stations a single 0.10 m2 Smith-MacIntyre grab sample was collected.

\*\*\*Possum Point (PO), Potomac River - In December 1977, three 0.02 m2 Ponar Grab samples were combined to form a composite sample of 0.06 m2. For the other collections times three 0.05 m2 Ponar Grab samples were combined to form a composite sample of 0.15 m2. All samples were passed through at 0.5 mm sieve and preserved with 10% buffered formalin. A 1% solution of rose bengal stain is premixed and added to the formalin

\*\*\*Piney Point (PP), Potomac River - At each station, 3 Ponar grab samples were combined to form a composite sample of 0.15 m2.

\*\*\*Thimble Shoals (SM), Chesapeake Bay - At each station a single a single 0.10 m2 Smith-MacIntyre grab sample was collected. NOTE -SAMPLES WERE SIEVED USING A 1.0 MM SIEVE.

\*\*\*Tangier Island (TI), Chesapeake Bay - At each station, 3 Smith-MacIntyre grab samples were combined to form a composite sample of 0.30 m2.

\*\*\*Warwick River (WO), James River - At each station, 2 Smith-MacIntyre grab samples were combined to form a composite sample of 0.20 m2.

- SAMPLE PRESERVATIVES: 10 % Buffered formalin in ambient sea water, rose bengal, isopropyl alcohol.

- SAMPLE STORAGE ENVIRONMENT: Sealed jars or other containers, held at room temperature.

- TIME IN STORAGE: Until commencement of processing, see reference for individual study for details.

-LAB TECHNIQUES WITH REFERENCES: Each sample was sorted separately and the individuals identified to the lowest possible taxon and enumerated.

## &gt;PARAMETER: LATITUDE (decimal degrees) and LONGITUDE ( decimal degrees)

-COLLECTION METHODS: DEAD MEAN RECKONING, LORAN-C, NAD27

Station positions in data set are approximations of actual positions in the field. Some data sets determined position-using Loran-C. Loran-C is accurate to +/- 1500 ft. Position on other data sets were determined by plotting stations on maps and estimating Latitude and Longitude by mean reckoning. Station coordinates for all data were converted to NAD83 coordinates in 2000.

-SAMPLE PRESERVATIVES: N/A

-SAMPLE STORAGE ENVIRONMENT: N/A

-TIME IN STORAGE: N/A

>PARAMETER: TOTAL\_DEPTH (Total Station Depth in meters)

- COLLECTION METHODS: See Individual Study for Details
- SAMPLE PRESERVATIVES: N/A
- SAMPLE STORAGE ENVIRONMENT: N/A
- TIME IN STORAGE: N/A
- LAB TECHNIQUES WITH REFERENCES: N/A

>PARAMETER: SALINITY

- COLLECTION METHODS: See Individual Study for Details
- SAMPLE PRESERVATIVES: N/A
- SAMPLE STORAGE ENVIRONMENT: N/A
- TIME IN STORAGE: N/A
- LAB TECHNIQUES WITH REFERENCES: N/A

>PARAMETER: SAND, (Sand, percent) MEDDIAM (Median Diameter ,PHI)

- COLLECTION METHODS: At each station once each date, a subsample of surface sediment was taken from each grab for analysis prior to sieving for organisms.
- SAMPLE PRESERVATIVES: Frozen
- SAMPLE STORAGE ENVIRONMENT: Frozen
- TIME IN STORAGE: See individual Data Set for Details
- LAB TECHNIQUES WITH REFERENCES: For each sample an fixed amount of sediment is placed on a 63 um sieve. Deionized water is used to pass fine particles through sieve. The material remaining on the sieve is the sand fraction. The sample is rinsed onto a dish and dried in the drying oven for 12 hours. The material is placed into a nested sieve series (2000,1000,500,250,125,63 um and a solid pad) and sieved. Materials retained in each sieve are then weighed and recorded for parameter calculations.

>PARAMETER: SILTCLAY (Silt-Clay, percent) , SILT (Silt, percent)

- COLLECTION METHODS: At each station once each date, a subsample of surface sediment was taken from each grab for analysis prior to sieving for organisms.
- SAMPLE PRESERVATIVES: Frozen
- SAMPLE STORAGE ENVIRONMENT: Frozen
- TIME IN STORAGE: See individual Data Set for Details
- LAB TECHNIQUES WITH REFERENCES: For each sample a fixed amount of sediment is placed on a 63 um sieve. Deionized water is used to pass fine particles through sieve. The resultant water contains the silt-clay fraction. The water silt mixture poured into a one liter graduated cylinder and is brought up to a volume of one liter. The sample is mixed, and five 20 ml samples are drawn at timed intervals. The first sample is drawn immediately at depths of 20 cm below the surface and placed in a pre-weighed beaker. The remaining four samples are taken at 10 cm below water surface at times of one minute min, 7 minutes and 44 seconds, 31 minutes and two hours and three minutes. All samples are placed in pre-weighed beakers. The water in the beakers is allowed to evaporate in a drying oven. Weights are recorded and parameters are calculated.

> DATA ENTRY METHOD: Hard copy of data as either printed reports or original field sheets were hand entered into EXCEL spreadsheets. Printouts of the EXCEL spreadsheets were then visually compared to original data source for accuracy.

>DATA VERIFICATION: Visually verified.

#### # SPECIES INHOUSE CODES AND SCIENTIFIC NAMES

NODC species codes were used in most cases for the in-house taxon codes. However the following listing of Latin Names did not have NODC codes at the time of data set creation, therefore VIMS code was used in the place.

Latin name	VIMS SPECCODE
Polycladia	3505
Streptosyllis	48021109
Aricidea	48050101

Cavolinia	49053201
Astarte	49084301
Dorella	66021001
Acoela	3501
Bhawania goodei	4802040301
Eulalia sanguinea	4802050705
Nereis acuminata	4802120410
Scolecopsis squamata	4805020602
Lysidice ninetta	4806020301
Doriopsilla pharpa	4905580101
Dosinia elegans	4908550102
Sarsiella texana	5303020101
Ogyrides hayi	5319160101
Pontophilus brevisrostris	5319200201
Chironominae sp1.	5424280001

## &gt; INHOUSE SPECIES LIST

VIMSCODE	DIAZ_LBL	VIMSCODE	DIAZ_LBL
4908580101	ABRA_AEQUALIS	5307110103	BALANUS_IMPROVISUS
5317220101	ACANTHOHAUSTORIUS_INTERMEDIUS	5317100101	BATEA_CATHARINENSIS
5317220102	ACANTHOHAUSTORIUS_MILLSI	4802040301	BHAWANIA_GOODEI
5110	ACARINA	49044701	BITTIUM
3501000000	ACOELA	48050201	BOCCARDIA
4905130101	ACTEOCINA_CANALICULATA	53020301	BOSMINA
4905010101	ACTEON_PUNCTOSTRIATUS		BOTHRIONEURUM_VEJDOVSKYANUM
5317020100	AMPELISCA	4908250201	BRACHIDONTES_RECURVUS
5317020101	AMPELISCA_ABDITA	4853010301	BRANCHIURA_SOWERBYI
5317020104	AMPELISCA_MACROCEPHALA	4802110201	BRANIA_CLAVATA
5317020102	AMPELISCA_VADORUM		CALANOIDA
5317020103	AMPELISCA_VERRILLI	5319360101	CALLIANASSA_ATLANTICA
4812020601	AMPHICTEIS_GUNNERI	5319580301	CALLINECTES_SAPIDUS
6803210201	AMPHIODIA_ATRA	5201010101	CALLIPALLENE_BREVIROSTRIS
	AMPHIPODA	48030301	CAPITELLA
4908220102	ANADARA_OVALIS	480303	CAPITELLIDAE
4908220101	ANADARA_TRANSVERSA	5317810201	CAPRELLA_PENANTIS
4802100102	ANCISTROSYLLIS_JONESI	400102	CARINOMIDAE
4908340101	ANOMIA_SIMPLEX	5316240401	CASSIDINIDEA_LUNIFRONS
5201020103	ANOPODACTYLUS_LENTUS	48100105	CAULLERIELLA
3303	ANTHOZOA	49053201	CAVOLINIA
4805021503	APOPRIONOSPIO_PYGMAEA	5317150101	CERAPUS_TUBULARIS
4806040101	ARABELLA_IRICOLOR	542429	CERATOPOGONIDAE
48050101	ARICIDEA	40010301	CEREBRATULUS
4805010116	ARICIDEA_CATHERINAE	4001030101	CEREBRATULUS_LACTEUS
4805010102	ARICIDEA_WASSI	71	CHAETOGNATHA
4812020101	ASABELLIDES_OCULATA		CHAOBORUS_(LARVAE)
49084301	ASTARTE	53160201	CHIRIDOTEA
4904760201	ASTYRIS_LUNATA	5316020104	CHIRIDOTEA_ARENICOLA
4803050601	ASYCHIS_ELONGATA	5316020102	CHIRIDOTEA_CAECA
	AULODRILUS_PIGUETI	542428	CHIRONOMIDAE
48021101	AUTOLYTUS		CHIRONOMIDAE_(PUPAE)

VIMSCODE	DIAZ_LBL	VIMSCODE	DIAZ_LBL
5424280001	CHIRONOMINAE_SP_1	49045001	EPITONIUM
	CHIRONOMINI_(LARVAE)	4904500102	EPITONIUM_RUPICOLUM
	CHIRONOMUS_(LARVAE)	5316020202	ERICHSONELLA_FILIFORMIS
4805010402	CIRROPHORUS_LYRIFORMIS	5317150301	ERICHTHONIUS_BRASILIENSIS
4803050101	CLYMENELLA_TORQUATA	4802050102	ETEONE_HETEROPODA
	COELOTANYPUS_(LARVAE)	4802050101	ETEONE_LACTEA
5305	COPEPODA	53194201	EUCERAMUS
4908610202	CORBICULA_MANILENSIS	4802050705	EULALIA_SANGUINEA
531715	COROPHIIDAE	4802050201	EUMIDA_SANGUINEA
53171502	COROPHIUM	4904740101	EUPLEURA_CAUDATA
5317150201	COROPHIUM_ACHERUSICUM	5319600102	EURYPANOPEUS_ABBREVIATUS
5317150202	COROPHIUM_LACUSTRE	5319600101	EURYPANOPEUS_DEPRESSUS
5317150203	COROPHIUM_SIMILE	4802110301	EXOgone_DISPARG
5317150204	COROPHIUM_TUBERCULATUM	4802110302	EXOgone_VERUGERA
5319200101	CRANGON_SEPTEMSPINOSA	531721	GAMMARIDAE
4908350101	CRASSOSTREA_VIRGINICA	53172102	GAMMARUS
4905890101	CRATENA_PILATA	5317210201	GAMMARUS_DAIBERI
4904550102	CREPIDULA_CONVEXA	5317210205	GAMMARUS_MUCRONATUS
4904550104	CREPIDULA_PLANA	4904	GASTROPODA
54242837	CRYPTOCHIRONOMUS	4908550501	GEMMA_GEMMA
	CRYPTOCHIRONOMUS_(LARVAE)	48021401	GLYCERA
5316100102	CYATHURA_BURBANCKI	4802140101	GLYCERA_AMERICANA
5316100101	CYATHURA_POLITA	4802140102	GLYCERA_DIBRANCHIATA
5314010202	CYCLASPIS_VARIANS	4802150101	GLYCIDINDE_SOLITARIA
	CYCLOPOIDA	4802090202	GYPTIS_BREVIPALPA(*)
4905040101	CYLICHA_ALBA	4802090201	GYPTIS_VITTATA
530321	CYTHERIDAE	4905120101	HAMINOEA_SOLITARIA
53020401	DAPHNIA	5315010201	HARGERIA_RAPAX
	DERO_DIGITATA	4802020102	HARMOTHOE_EXTENUATA
	DERO_NIVEA	4802020106	HARMOTHOE_LUNULATA
3303430101	DIADUMENE_LEUCOLENA		HARNISCHIA_(LARVAE)
	DICROTENDIPES_(LARVAE)		HARPACTICOIDA
4806010101	DIOPATRA_CUPREA	69	HEMICHORDATA
	DIPTERA_(PUPAE)	4803030201	HETEROMASTUS_FILIFORMIS
66021001	DORELLA	6804	HOLOTHUROIDEA
4905560101	DORIDELLA_OBSCURA	490424	HYDROBIIDAE
4905580101	DORIOPSISILLA_PHARPA	4815020101	HYDROIDES_DIANTHUS
4908550102	DOSINIA_ELEGANS	3301	HYDROZOA
48060402	DRILONEREIS	4862010601	ILLINOBDELLA_MOOREI
4806040202	DRILONEREIS_LONGA	53020601	ILYOCRYPTUS
4806040203	DRILONEREIS_MAGNA		ILYODRILUS_TEMPLETONI
6802	ECHINOIDEA	4802120201	LAONEREIS_CULVERI
66	ECTOPROCTA	48030501	LEIOCAPITELLA
5316020401	EDOTEA_TRILOBA	5317220501	LEPIDACTYLUS_DYTISCUS
3303400101	EDWARDSIA_ELEGANS	4802020201	LEPIDAMETRIA_COMMENSALIS
5317210101	ELASMOPUS_LEVIS	4802020302	LEPIDONOTUS_SUBLEVIS
485303	ENCHYTRAEIDAE	5317060201	LEPTOCHEIRUS_PLUMULOSUS
4908710101	ENSIS_DIRECTUS		

VIMSCODE	DIAZ_LBL	VIMSCODE	DIAZ_LBL
6804500101	LEPTOSYNAPTA_TENUIS	4802130204	NEPHTYS_PICTA
5314020101	LEUCON_AMERICANUS	48021204	NEREIS
53196601	LIBINIA	4802120410	NEREIS_ACUMINATA
48530105	LIMNODRILUS	4802120403	NEREIS_SUCCINEA
	LIMNODRILUS_CERVIX	4908110101	NUCULA_PROXIMA
	LIMNODRILUS_CLAPAREDIANUS	4905150101	ODOSTOMIA_BISUTURALIS
4853010501	LIMNODRILUS_HOFFMEISTERI	4905150110	ODOSTOMIA_ENGONIA
	LIMNODRILUS_PROFUNDICOLA	4905150104	ODOSTOMIA_TRIFIDA
	LIMNODRILUS_UDEKEMIANUS	54221001	OECETIS
400103	LINEIDAE		OECETIS_(LARVAE)
5317330201	LISTRIELLA_BARNARDI(*)	5319160102	OGYRIDES_ALPHAEROSTRIS_(=LIMIC
5317330202	LISTRIELLA_CLYMENELLAE(*)	5319160101	OGYRIDES_HAYI
4812030301	LOIMIA_MEDUSA	4806010201	ONUPHIS_EREMITA
4908500101	LUCINA_MULTILINEATA	4803020101	OPHELIA_BICORNIS
48060301	LUMBRINERIS	5303	OSTRACODA
4908800101	LYONSIA_HYALINA	48110101	OWENIA
4806020301	LYSIDICE_NINETTA	4811010101	OWENIA_FUSIFORMIS
4908570200	MACOMA	5314030201	OXYUROSTYLIS_SMITHI
4908570201	MACOMA_BALTHICA	5319440205	PAGURUS_LONGICARPUS
4908570202	MACOMA_MITCHELLI	4908810101	PANDORA_TRILINEATA
4908570204	MACOMA_PHENAX	5319600401	PANOPEUS_HERBSTII
4908570203	MACOMA_TENTA	5317810301	PARACAPRELLA_TENUIS
4808010101	MAGELONA_ROSEA	5317220702	PARAHAUSTORIUS_HOLMESI
4806020101	MARPHYSA_SANGUINEA	5317440101	PARAMETOPELLA_CYPRIS
4803030401	MEDIOMASTUS_AMBISETA		PARANAIS_FRICI
4812020301	MELINNA_MACULATA	4805010202	PARAONIS_FULGENS
5317210402	MELITA_NITIDA	5317420102	PARAPHOXUS_SPINOSUS
4908550301	MERCENARIA_MERCENARIA	4802110501	PARAPIONOSYLLIS_LONGICIRRATA
48020905	MICROPHTHALMUS	4805020401	PARAPRIONOSPIO_PINNATA
4904750101	MITRELLA_LUNATA	4812010101	PECTINARIA_GOULDII
72010401	MOLGULA	4853010203	PELOSCOLEX_HETEROCHAETUS
7201040101	MOLGULA_MANHATTENSIS		PELOSCOLEX_MULTISETOSUS
4900000000	MOLLUSCA	5317000000	PERACARIDA_AMPHIPODA
53173701	MONOCULODES	4908560101	PETRICOLA_PHOLADIFORMIS
5317370101	MONOCULODES_EDWARDSI	65010101	PHORONIS
4908720201	MULINIA_LATERALIS	6501010102	PHORONIS_PSAMMOPHILA
	MUSCULIUM	4802050501	PHYLLODOCE_ARENAE
	MUSCULIUM_PARTUMEIUM	49061301	PHYSA
	MUSCULIUM_TRANSVERSUM	53196202	PINNIXA
4908750101	MYA_ARENARIA	5319620201	PINNIXA_CHAETOPTERANA
	MYSICACEA	5319620205	PINNIXA_SAYANA
48530204	NAIS	49086203	PISIDIUM
4904800101	NASSARIUS_VIBEX	531743	PLEUSTIDAE
44	NEMATODA	53174304	PLEUSYMTES
5313010101	NEOMYSIS_AMERICANA	4802090401	PODARKE_OBSCURA
5319600301	NEOPANOPE_TEXANA_SAYI	4904660101	POLINICES_DUPLICATUS
48021302	NEPHTYS	4812030601	POLYCIRRUS_EXIMIUS
4802130202	NEPHTYS_INCISA	3505	POLYCLADIA

VIMSCODE	DIAZ_LBL	VIMSCODE	DIAZ_LBL
48050202	POLYDORA	5310010101	SQUILLA_EMPUSA
4805020202	POLYDORA_LIGNI(*)	5317440200	STENOTHOE
4805020204	POLYDORA_SOCIALIS	5317440202	STENOTHOE_MINUTA
4805020203	POLYDORA_WEBSTERI	4802030101	STHENELAIS_BOA
	POLYPEDILUM_(LARVAE)	4805020901	STREBLOSPIO_BENEDICTI
5319200201	PONTOPHILUS_BREVIROSTRIS	48021109	STREPTOSYLLIS
48030507	PRAXILLELLA		STYLARIA_LACUSTRIS
	PROCLADIUS_(LARVAE)	3505010201	STYLOCHUS_ELLIPTICUS
48070103	PSEUDEURYTHOE	480211	SYLLIDAE
4807010301	PSEUDEURYTHOE_PAUCIBRANCHIATA	5317370201	SYNCHELIDIUM_AMERICANUM
5316100202	PTILANTHURA_TRICARINA	49086001	TAGELUS
49051502	PYRAMIDELLA	4908600102	TAGELUS_DIVISUS
4905150201	PYRAMIDELLA_CANDIDA		TANYPUS_(LARVAE)
4908720301	RANGIA_CUNEATA	5201040101	TANYSTYLUM_ORBICULARE
5319600501	RHITHROPANOPEUS_HARRISII		TANYTARSINI_(LARVAE)
40	RHYNCHOCOELA		TANYTARSUS_(LARVAE)
4805060101	SABELLARIA_VULGARIS	4908570101	TELLINA_AGILIS
4815010301	SABELLA_MICROPHTHALMA	4908570102	TELLINA_VERSICOLOR
5303020101	SARSIELLA_TEXANA	48100103	THARYX
5303020102	SARSIELLA_ZOSTERICOLA	4810010301	THARYX_SETIGERA
4806060403	SCHISTOMERINGOS_RUDOLPHI		THYSANOPTERA_(LARVAE)
4805020501	SCOLECOLEPIDES_VIRIDIS	53174203	TRICHOPHOXUS
4805020602	SCOLELEPIS_SQUAMATA	5317420301	TRICHOPHOXUS_EPISTOMUS
48090102	SCOLOPLOS		TRICHOPTERA_(LARVAE)
4809010201	SCOLOPLOS_FRAGILIS		TRICLADIDA
4809010202	SCOLOPLOS_ROBUSTUS	485301	TUBIFICIDAE
4809010207	SCOLOPLOS_RUBRA		TUBIFICIDAE_(IMMATURE)
4802100301	SIGAMBRA_TENTACULATA	48530119	TUBIFICOIDES
4908710201	SOLEN_VIRIDIS	40010101	TUBULANUS
49086202	SPHAERIUM	4001010101	TUBULANUS_PELLUCIDUS
5316240302	SPHAEROMA_QUADRIDENTATUM	35	TURBELLARIA
48050207	SPIO	4905150301	TURBONILLA_INTERRUPTA
4805050201	SPIOCHAETOPTERUS_OCULATUS	53171504	UNCIOLA
4805020801	SPIOPHANES_BOMBYX	5317150403	UNCIOLA_SERRATA
4805020702	SPIO_SETOSA	4703010101	URNATELLA_GRACILIS
	SPIRALILIMNODRILUS_SPIRALIS	72	UROCHORDATA

# VARIABLES NAMES AND DESCRIPTIONS FOR DATA FILES  
Structures for data files on <http://www.chesapeakebay.net>

> BENTHIC SURVEY EVENT DATA

Field Name	Type	Width	Descriptions
EVENT_ID	Number	8	Database Generated Event Identification Number
SOURCE	Text	6	Data Collection Agency
SAMPLE_DATE	Text	8	Sampling Date (MM/DD/YYYY)
LATITUDE	Number	8.5	Latitude (Decimal Degrees- NAD83)
LONGITUDE	Number	8.5	Longitude (Decimal Degrees-NAD83)
R_DATE	Text	8	Data Version Date (MM/DD/YYYY)
SITETYPE	Text	4	Sampling Site Type
STATION	Text	15	Sampling Station
TOTAL_DEPTH	Number	8.1	Total Station Depth (Meters)
SAMPLE_TIME	Text	5	Sample Collection Time (HHMM)

> BENTHIC WATER QUALITY SURVEYS

Field Name	Type	Width	Descriptions
EVENT_ID	Number	8	Database Generated Event Identification Number
SOURCE	Text	6	Data Collection Agency
SAMPLE_TYPE	Text	2	Sample Collection Type
STATION	Text	15	Sampling Station
SAMPLE_DATE	Text	8	Sampling Date (MM/DD/YYYY)
SAMPLE_DEPTH	Number	8.1	Sampling Depth
SAMPLE_NUMBER	Number	8.0	Sample Number
REPORTED_PARAMETER	Text	15	Sampling Parameter
REPORTED_VALUE	Number	8.4	Sampling Parameter Value
REPORTED_UNITS	Text	15	Reporting Units of Value
WQ_METHOD	Text	8	Chesapeake Bay Program Parameter Analysis Code
R_DATE	Text	8	Data Version Date (MM/DD/YYYY)

>BENTHIC SEDIMENT SURVEY DATA

Field Name	Type	Width	Descriptions
EVENT_ID	Number	8	Database Generated Event Identification Number
SOURCE	Text	6	Data Collection Agency
SAMPLE_TYPE	Text	2	Sample Collection Type
STATION	Text	15	Sampling Station
SAMPLE_DATE	Text	8	Sampling Date (MM/DD/YYYY)
TOTAL_DEPTH	Number	8.1	Total Station Depth
SAMPLE_NUMBER	Number	8.0	Sample Number
REPORTED_PARAMETER	Text	15	Sampling Parameter
REPORTED_VALUE	Number	8.4	Sampling Parameter Value
REPORTED_UNITS	Text	15	Reporting Units of Value
R_DATE	Text	8	Data Version Date (MM/DD/YYYY)

## &gt; BENTHIC SURVEY BIOTA EVENT DATA

Field Name	Type	Width	Description
EVENT_ID	Number	8	Database Generated Event Identification Number
SOURCE	Text	6	Data Collection Agency
SAMPLE_DATE	Date/Time	8	Sampling Date (MM/DD/YYYY)
LATITUDE	Number	8.5	Latitude (Decimal Degrees-NAD83)
LONGITUDE	Number	8.5	Longitude (Decimal Degrees-NAD83)
PENETR	Number	8.4	Sampling Gear Penetration Depth (cm)
R_DATE	Date/Time	8	Data Version Date (MM/DD/YYYY)
SAMPLE_NUMBER	Number	8.0	Sample Number
SITE_TYPE	Text	10	Sampling Site Type
STATION	Text	15	Sampling Station
TOTAL_DEPTH	Number	8.1	Total Station Depth (Meters)
SAMPLE_TIME	Date/Time	8	Sample Collection Time (HHMM)

## &gt;BENTHIC TAXONOMIC SURVEY DATA

Field Name	Type	Width	Descriptions
EVENT_ID	Number	8	Database Generated Event Identification Number
SOURCE	Text	6	Data Collection Agency
SAMPLE_TYPE	Text	7	Sample Collection Type
STATION	Text	15	Sampling Station
SAMPLE_DATE	Date/Time	8	Sampling Date (MM/DD/YYYY)
SAMPLE_NUMBER	Number	8.0	Sample Number
GMETHOD	Text	3	Chesapeake Bay Program Gear Method Code
CONVFACT	Number	8.2	Conversion Factor (# Individual/Sample to # Individuals/Meter Squared)
NET_MESH	Number	8.2	Screen Mesh Width (Millimeters)
TSN	Text	7	ITIS Taxon Serial Number
LIFE_STAGE	Text	45	Species Life Stage
LATIN_NAME	Text	45	Species Latin Name
REPORTING_VALUE			
	Number	12	Total Count of Given Taxa in Sample
REPORTING_UNITS	Text	15	Reporting Units of Value
NODCCODE	Text	12	National Oceanographic Data Center Species Code
SPEC_CODE	Text	14	Agency Species Code
SER_NUM	Text	12	Sample Serial Number
R_DATE	Date/Time	8	Data Version Date (MM/DD/YYYY)

> The following fields may also appear in a downloaded data set:

Name	Type	Width	Description
BASIN	Text	20	Chesapeake Bay Basin Designation
HUC8	Text	8	USGS Eight Digit Hydrologic Unit Code
CATALOGING_UNIT_DESCRIPTION	Text	50	USGS Cataloging Unit Code Description
FIPS	Text	5	Federal Information Processing Code
STATE	Text	3	Federal Information Processing Code State Designation
COUNTY_CITY	Text	30	Federal Information Processing Code City/County Designation
CBSEG_2003	Text	6	2003 Chesapeake Bay Segment Designation
CBSEG_2003_DESCRIPTION	Text	50	2003 Chesapeake Bay Segment Designation Description

## VARIABLE NAMES AND DESCRIPTIONS FOR SPECIES KEY

These tables cross references investigator species codes and spellings with current Integrated Taxonomic Information System (ITIS) and National Oceanographic Data Center taxonomic codes and spellings. Web address: <http://www.chesapeakebay.net/>

Name	Type	Width	Description
SOURCE	Text	8	Data Provider Identifier
SPECCODE	Text	14	Data provider Species Code
SPEC_LBL	Text	45	SOURCE Species Latin Name
LBL	Text	45	ITIS Latin Name
NODC_LBL	Text	45	National Oceanographic Data Center Latin Name
NODCCODE	Text	12	National Oceanographic Data Center Species Code
TSN	Text	7	ITIS Taxon Serial Number
R_DATE	Date/Time	8	Version Date of Data (YYYYMMDD)

## # REFERENCE CODES IN DATA FILES AND TAXONOMIC KEY

See The 2000 Users Guide to Chesapeake Bay Program Living Resources Monitoring Data for full listing .

> MISSING VALUES: Missing values have been replaced with -999.99 in numeric fields and N, NA or NOT AVAIL. in character fields.

> AGENCY: Data Collecting Agency  
VIMS- Virginia Institute of Marine Sciences  
EA- Ecological Analysis, Inc.

> COLTYPE: Sample Collection Type  
C- Composite Sample  
D- Discrete Sample

> CRUISE: Chesapeake Bay Program Cruise Number  
PREBAY- Pre July 1984 (Before start of Current Bay Program).

> GMETHOD: Sampling Gear Code  
17- Ponar Grab (200 sq centimeter)  
19- Ponar Grab (50 sq centimeters)  
24- Smith Macintire Grab (1000 sq centimeters)  
81- Spade Box Core (0.06 meters squared)

> INSCODE: Sampling Instrument Code  
NA- Not currently available

> NODCCODE- National Oceanographic Data Center Species Code  
for full listing see LRDISK:[LR.PUBLIC] NODCCODE.TXT

> SITETYPE: Sampling Site Type Code  
F- Fixed

> STATION: Sampling Station  
See Station Names and Descriptions for Details

> TSN - Interagency Taxonomic Information System- Taxon Serial Number  
for full listing see 1998 Chesapeake Bay Basin Species List

> TRIB\_COD: Tributary Code  
BAY - Chesapeake Bay

YRK- York River,  
 JAM- James River  
 POT- Potomac River

## &gt;FIPS: Federal Information Processing Codes

<b>FIPS</b>	<b>NAME</b>	<b>STATE</b>
24017	CHARLES	MD
24037	SAINT MARYS	MD
51001	ACCOMACK	VA
51036	CHARLES CITY	VA
51041	CHESTERFIELD	VA
51073	GLOUCESTER	VA
51093	ISLE OF WIGHT	VA
51095	JAMES CITY	VA
51149	PRINCE GEORGE	VA
51153	PRINCE WILLIAM	VA
51181	SURRY	VA
51199	YORK	VA
51650	HAMPTON CITY	VA
51700	NEWPORT NEWS CITY	VA
51710	NORFOLK CITY	VA
51810	VIRGINIA BEACH CITY	VA

## &gt;HUC8: USGS Hydrologic Unit Codes

<b>HUC8</b>	<b>CATALOGING_UNIT_DESCRIPTION</b>
02070011	LOWER POTOMAC
02080101	LOWER CHESAPEAKE BAY
02080107	YORK
02080206	LOWER JAMES
02080208	HAMPTON ROADS

## &gt; CBSEG\_1998: Chesapeake Bay Program Monitoring Segment

<b>CBSEG_1998</b>	<b>DESCRIPTION</b>
CB8PH	CHESAPEAKE BAY-POLYHALINE REGION
JMSMH	JAMES RIVER-MESOHALINE REGION
JMSOH	JAMES RIVER-OLIGOHALINE REGION
JMSPH	JAMES RIVER-POLYHALINE REGION
JMSTF	JAMES RIVER-TIDAL FRESH REGION
MOBPH	MOBJACK BAY-POLYHALINE REGION
POTMH	POTOMAC RIVER-MESOHALINE REGION
POTOH	POTOMAC RIVER-OLIGOHALINE REGION
POTTF	POTOMAC RIVER-TIDAL FRESH REGION
TANMH	TANGIER SOUND-MESOHALINE REGION
YRKPH	YORK RIVER-POLYHALINE REGION

## &gt;METHOD: Chesapeake Bay Program Lab Method Code Designation

FO1

>PARAMETER and UNIT: Measured Parameter and reporting units.

PARAMETER	UNITS
COUNT	NUMBER/SAMPLE
PARAMETER	UNITS
MEDDIAM	PHI
SAND	PERCENT
SILTCLAY	PERCENT
PARAMETER	UNITS
SALINITY	PPT

#### #IMPORTANT DATA REVISIONS

THE LIVING RESOURCES DATA MANAGER RECOMMENDS THAT ALL DATA ANALYSIS BE PERFORMED WITH THE MOST RECENT DATA SETS AVAILABLE. HOWEVER IF YOU HAVE BEEN WORKING WITH OLDER DATA SETS THE FOLLOWING ARE IMPORTANT CHANGES TO BE AWARE OF.

01/03/97- Please note that some sampling dates can only be confirmed to the month and year of sampling. There for the SAMPLING date WAS SET TO THE 30 TH OF THE MONTH. No actual sampling for any of these surveys was conducted on the 30th of any month.

01/03/96- The Station positions in this data set do not meet current (1996) EPA sampling position policy. Sampling locations were not measured with GPS receivers and latitude/longitude values in the files are estimated or derived using Loran coordinates. You may encounter difficulty using this data set in precision mapping applications. See individual Data Documentation for details of position determination.

01/01/2000- All station positions converted to NAD83 coordinates.

#### #KEY WORDS (EXCLUDING VARIABLE NAMES)

BENTHIC HABITAT CHARACTERIZATION  
 BENTHIC ORGANISM DENSITIES  
 BENTHIC SAMPLING EVENT  
 BENTHIC SEDIMENT CHARACTERIZATION  
 BENTHIC TAXON COUNTS  
 BENTHIC WATER QUALITY  
 HISTORIC BENTHIC STUDIES

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**THIS IS THE END OF HISTORIC CHESAPEAKE BAY DATA  
 ASSORTED BENTHIC SURVEYS FROM THE LOWER BAY, JAMES,  
 YORK AND POTOMAC RIVERS DATA DICTIONARY**

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