Maryland CORE/Trend Water Quality Monitoring Program – 2012

Metadata:

Identification_Information:
Citation:
Citation_Information:
Originator: Maryland Department of Natural Resources (MD DNR), Resource Assessment Service
Publication_Date: 20130401
Title: MD DNR 2012 CORE/Trend Water Quality Monitoring Project
Online_Linkage:
[http://www.chesapeakebay.net/data/downloads/cbp_water_quality_database_1984_present]

Description:
Abstract: These are water quality monitoring data from a long term fixed location monitoring study of non-tidal stations located in the Chesapeake Bay and Ohio River watersheds. The data are collected from fifty-five stations for a time period beginning January 1986 and extending to the present.

Purpose: Provide metadata record for ongoing Chesapeake Bay Program Activity.

Supplemental_Information:
Two reports contain information that should be considered when CORE/Trend data are used for data analysis. The reports are named: DAITS 043: Comparability of parameter estimates from whole water and filtered samples for MD Department of Health and Mental Hygiene data (June 2006, revised April 2009) and DAITS 046: Comparison of chlorophyll and pheophytin analyzed at DHMH and CBL (May 2009). Copies of the reports may be downloaded. [http://www.chesapeakebay.net/documents/Completed_DAITS_as_of_9-21-10.pdf].

Data users who desire very detailed information about Water Quality Monitoring data definition, sampling procedures and data processing are encouraged to refer to two documents listed below. The documents may be obtained from The Chesapeake Bay Program Office.

Water Quality Database - Database Design and Data Dictionary, Prepared For: U.S. Environmental Protection Agency, Region III, Chesapeake Bay Program Office, January 2004. [http://archive.chesapeakebay.net/pubs/cbwqdb2004_RB.PDF].

The most current version of the Water Quality Data Dictionary - Online may be found at: [http://archive.chesapeakebay.net/data/data_dict.cfm?DB_CODE=CBP_WQDB].

The Quality Assurance Project Plan for the Maryland Department of Natural Resources Chesapeake Bay Water Quality Monitoring Program - Chemical and Physical Properties Component for the period July 1, 2012 - June 30, 2013 (DRAFT I)

[http://mddnr.chesapeakebay.net/eyesonthebay/documents/MdDNR_MT2012QAPPv1.1.pdf]

Guide to Using Chesapeake Bay Program Water Quality Monitoring Data, EPA 903-R-12-001, February 2012, CBP/TRS 304-12
[http://www.chesapeakebay.net/documents/3676/wq_data_userguide_10feb12_mod.pdf]

Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 20120104
Ending_Date: 20121210
Currentness_Reference: Ground Condition
Status:
Progress: In Work
Maintenance_and_Update_Frequency: As needed
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -79.4938
East_Bounding_Coordinate: -75.0405
North_Bounding_Coordinate: 39.7425
South_Bounding_Coordinate: 37.8713
Keywords:
Theme:
Theme_Keyword_Thesaurus: User Defined Keyword List
Theme_Keyword: Chesapeake Bay Program
Theme_Keyword: Monitoring
Theme_Keyword: Nitrogen
Theme_Keyword: Phosphorous
Theme_Keyword: Rivers
Theme_Keyword: Water quality
Theme_Keyword: Watershed

Place:
Place_Keyword_Thesaurus: User Defined Keyword List
Place_Keyword: Chesapeake Bay
Place_Keyword: Hydrologic Unit
Place_Keyword: Major Watershed/Basin
Place_Keyword: Maryland (MD)
Place_Keyword: Subbasin
Place_Keyword: Tributary
Access_Constraints: NONE
Use_Constraints: Use At Your Own Risk

Point_of_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: William D. Romano
Contact_Position: Natural Resources Biologist
Contact_Address:
Address_Type: Mailing and physical
Address: 580 Taylor Avenue, D-2
City: Annapolis
State_or_Province: Maryland
Postal_Code: 21401
Contact_Voice_Telephone: 410 260 8630
Contact_Electronic_Mail_Address: bromano_no_spam_@dnr.state.md.us [remove _no_spam_ for valid email address]

Browse_Graphic:
Browse_Graphic_File_Name:
[http://mddnr.chesapeakebay.net/eyesonthebay/documents/metadata/MD_DNR_CORE_TrendStns.pdf]
Browse_Graphic_File_Description: Fifty-five Maryland Department of Natural Resources CORE/Trend water quality monitoring stations.
Browse_Graphic_File_Type: PDF

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
QUALITY ASSURANCE/QUALITY CONTROL
Maryland Department of Natural Resources followed specific procedures to ensure that the CORE/Trend component of the Chesapeake Bay Water Quality Monitoring Program design was properly implemented and managed with sufficient accuracy, precision and detection limits. Accuracy (closeness to the true value) of collected data was controlled and assured by proper use, calibration and maintenance of both field and laboratory equipment for the measurement of physical and chemical parameters.

The procedures to control and assure the accuracy of field measurements involved the calibration of field instruments, the verification of calibrations, and equipment maintenance. Most of the details of how data acquired with Hydrolab sondes were quality assured and quality controlled are described in the process description elements in the Lineage portion of this metadata record.

Daily quality control checks which included the running of blanks and standards were used to control and assure laboratory accuracy.

Accuracy of laboratory analytical results were assessed through DNR's participation in the Chesapeake Bay Coordinated Split Sample Program (CSSP) a split sampling program in which five laboratories involved in Chesapeake Bay monitoring analyze the coordinated split samples.

CSSP was established in June 1989 to establish a measure of comparability between sampling and analytical operations for water quality monitoring throughout the Chesapeake Bay and its tributaries. DNR followed the protocols in the Chesapeake Bay Coordinated Split Sample Program Implementation Guidelines (EPA 1991) and its revisions. Split samples were collected quarterly. Results were analyzed by appropriate statistical methods to determine if results differed significantly among labs. If a difference occurred, discussions began regarding techniques and potential methods changes to resolve discrepancies.

February 2012 - A comment on the station CON0180 field data sheet stated that Dissolved Oxygen and PH were checked with meter K.

April 2012 - At station PAT0285 it was noted that fish stocking had occurred the previous day. Station CON0180 filter pads were tinted green.

May 2012 - At station POT1830, a pipe was discharging. Station CON0180 filter pads were green.

July 2012 - Station PXT0809 filter pads were rust colored. Children were playing in the waters upstream when station SEN0008 was sampled.

August 2012 - Many swimmers were seen in the waters upstream when station SEN0008 was sampled. A bridge construction boom was deployed across the river below station PAT0176. Algae, suspended in the water, were noted at stations: CON0005 and ANT0203.

September 2012 - At station PXT0809, particles were seen on filter pads and it was noted that oil droplets in the sample were likely related to work in the pump-house. The beginning of bridge construction was noted at station MON0528. A fishy smell was recorded at station CON0180. Station ANT0203 samples were collected downstream on Garis Shop Road due to construction on Poffenburger Road.

October 2012 - Station ANT0203 samples were collected on Garis Shop Road due to construction on Poffenburger Road. Filter pads at stations: CON0005 and CON0180 were slightly green. The creek at station CJB0005 was green. Station GWN0115 was sampled during a storm event. Station NPA0165 was sampled during peak flow.

November 2012 - Continued presence of oil on the pump-house side of the stream was observed at station PXT0809. Station ANT0203 samples were collected on Garis Shop Road due to construction on Poffenburger Road.

December 2012 - The removal of the old gage house, bridge construction and presence of a temporary gage were noted at station MON0258.

There were no known issues in January, March, and June 2012.

Logical_Consistency_Report:

January 2012 - Station SAV0000 was sampled from the bank below the bridge.

February 2012 - Station JON0184 was sampled from the Falls Road bridge.

March 2012 - Due to a road closure 7-Mar-2012, station POT1184 was sampled on 12-Mar-2012.

April 2012 - Station NBP0461 samples were taken from the gravel extension built under the bridge.

June 2012 - Sampling of station JON0184 was conducted from the bridge. WIL0013 samples were collected from a location where Braddock Run discharge was not an influence.

July 2012 - Station NBP0326 samples were taken from the bridge.

September 2012 - Station ANT0202 samples were collected downstream on Garis Shop Road because Poffenburger Road was closed for construction. Station NBP0326 samples were collected from the bridge. Samples at station NBP0461 were collected from the gravel diversion.

October 2012 - Station ANT0202 samples were collected on Garis Shop Road because Poffenburger Road construction continued. Station NBP0326 samples were taken from the bridge. Samples at station NBP0421 were collected from the gravel extension.

November 2012 - Station ANT0202 samples were collected on Garis Shop Road because Poffenburger Road construction was still ongoing. Station NBP0326 samples were taken from the bridge. Samples at station NBP0421 were collected from the gravel extension.

No other known issues during sampling conducted during May, August and December 2012.

Completeness_Report:

Station PMS 10 is sampled quarterly and samples were not taken in January, February, April, May, July, August, October and November.

May 2012 - Air Temperature was not recorded at station PXT0972.

June 2012 - There are no discharge and gage height data for station GUN0258. 12-Jun-2012 data were unavailable for USGS gage 01582500 at Gunpowder Falls at Glencoe, MD.

August 2012 - Gage height data were not available for station PXT0809.

September 2012 - The pH was not recorded at station PMS 10.

October 2012 - Secchi disk depth was not measured at station ANA0082.

December 2012 - End time was not recorded at station GUN0125.

There were no other known completeness issues during January, February, March, April July and November 2012.

Lineage:
Process_Step:
Process_Description:
SONDE CALIBRATION and POST-CALIBRATION

HydroLab sondes were maintained and calibrated before and after each survey in accordance with manufacturer's recommendations.

HYDROLAB PROFILE SAMPLING PROTOCOLS:

Measurements of temperature, specific conductance, dissolved oxygen and pH were obtained from YSI or Hydrolab water quality sensors immersed just below the water surface.

GRAB SAMPLING DEPTH PROTOCOLS:

Grab samples of water for laboratory analysis were collected at stations at a depth of 0.0m.
Process_Date: Unknown
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Sally Bowen
Contact_Position: Project Chief, Monitoring Field Office, DNR
Contact_Address:
Address_Type: mailing and physical
Address: 1919 Lincoln Drive
City: Annapolis
State_or_Province: Maryland
Postal_Code: 21401
Country: USA
Contact_Voice_Telephone: 410 263-3369
Contact_Electronic_Mail_Address: SBOWEN_nospam_@dnr.state.md.us[Remove _nospam_ for valid email address]

Process_Step:
Process_Description:
CORE/Trend DHMH ECDL LABORATORY ANALYSIS

Maryland Department of Health and Mental Hygiene, Environmental Chemistry Division Laboratory, Baltimore, MD, analyzed total dissolved nitrogen, particulate nitrogen, nitrite, nitrite + nitrate, ammonium, total dissolved phosphorus, particulate phosphorus, orthophosphate, dissolved organic carbon, particulate carbon, total suspended solids, biological oxygen demand, total alkalinity and turbidity for CORE/Trendstations.

Process_Date: Unknown
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Shahla Ameli
Contact_Position: Laboratory Scientist Supervisor
Contact_Address:
Address_Type: mailing and physical
Address: 201 West Preston Street
City: Baltimore
State_or_Province: Maryland
Postal_Code: 21201
Country: USA
Contact_Voice_Telephone: 410 767 6190
Contact_Electronic_Mail_Address: AmeliS_nospam_@dhmh.state.md.us[Remove _nospam_ for valid email address]

Process_Step:
Process_Description:
CORE/Trend DHMH WMRL LABORATORY ANALYSIS

Maryland Department of Health and Mental Hygiene, Western Maryland Regional Laboratory (WMRL), Cumberland, MD, analyzed total alkalinity, total dissolved solids, total suspended solids and turbidity for the following stations: BDK0000, CAS0479, CCR0001, GEO0009, LYO0004, NBP0023, NBP0103, NBP0326, NBP0461, NBP0534, NBP0689, POT2766, SAV0000, TOW0030, WIL0013, YOU0925 and YOU1139. Sulfates were analyzed at WMRL through March 2011. No sulfate samples were analyzed in February 2011 due to a reduction in staff. WMRL participated in a sulfate split sample comparison study with CBL NASL in March 2011. Beginning in April 2011 CBL NASL started performing sulfate analyses.

Further information about laboratory analytical procedures may be obtained from the "Process_Contact".
Process_Date: Unknown
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Michael Risoldi
Contact_Position: Laboratory Scientist Lead
Contact_Address:
Address_Type: mailing and physical
Address:
Western Maryland Regional Laboratory
12503 Willowbrook Road
Brook Building, Entrance #6 (Rear)

City: Cumberland
State_or_Province: Maryland
Postal_Code: 21502
Country: USA
Contact_Voice_Telephone: 301 759 5243
Contact_Electronic_Mail_Address: RisoldiM_nospam_@dhmh.state.md.us[Remove _nospam_ for valid email address]

Process_Step:
Process_Description:
CORE/Trend NASL LABORATORY ANALYSIS

University of Maryland's Chesapeake Biological Laboratory (CBL), Nutrient Analytical Services Laboratory (NASL), Solomons, MD, analyzed chlorophyll, sulfate and chloride for a subset of CORE/Trend stations.

NASL began performing chlorophyll analyses in the year 2009. Prior to 2009, chlorophyll analyses were performed by the Maryland Department of Health and Mental Hygiene (DHMH) laboratory in Baltimore, MD. Sulfate analyses were performed by DHMH WMRL until March 2011, no sulfate samples were analyzed in February 2011 due to a reduction in staff. NASL began performing sulfate analyses in April 2011 and chloride analyses in May 2011.

Process_Date: Unknown
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Kathy Wood
Contact_Position: Faculty Research Assistant IV
Contact_Address:
Address_Type: mailing and physical
Address: Chesapeake Biological Laboratory, Center for Environmental and Estuarine Studies, The University of Maryland System, 146 Williams St; P.O. Box 38
City: Solomons
State_or_Province: Maryland
Postal_Code: 20688
Country: USA
Contact_Voice_Telephone: 410 326-7203
Contact_Electronic_Mail_Address: wood_nospam_@umces.edu[Remove _nospam_ for valid email address]

Process_Step:
Process_Description:
VERIFICATION AND DATA MANAGEMENT:

Each month DNR Tawes Office and Field Office personnel conducted data QA/QC procedures. All of the water quality calibration "grab" sample data were plotted. Outliers and anomalous values were thoroughly researched. Staff compared unusual values to historic values from the site and values from nearby sites. Weather events were considered, event logs were reviewed and CBL, DHMH and WMRL analytical laboratory staff and DNR field staff members were consulted regarding possible legitimate causes for outlying values. In cases where values were not considered to be legitimate, they were masked from the published dataset with the approval of the field staff and the Quality Assurance Officer.

Process_Date: Unknown
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Diana Domotor
Contact_Position: Administrator II
Contact_Address:
Address_Type: Mailing
Address: 580 Taylor Avenue, D2
City: Annapolis
State_or_Province: Maryland
Postal_Code: 21401
Country: USA
Contact_Voice_Telephone: 410 260 8630
Contact_Electronic_Mail_Address: DDomotor_No_Spam_@dnr.state.md.us [Remove _No_Spam_ for valid email address]

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Michael Mallonee
Contact_Position: Water Quality Database Manager
Contact_Address:
Address_Type: mailing and physical
Address: 410 Severn Avenue, Suite 109
City: Annapolis
State_or_Province: Maryland
Postal_Code: 21403
Country: USA
Contact_Voice_Telephone: 800-968-5785
Contact_Electronic_Mail_Address: mmallone@_no_spam_chesapeakebay.net[Remove _nospam_ for valid email address]

Resource_Description: Downloadable data
Distribution_Liability: None of the Chesapeake Bay Program partners nor any of their employees, contractors, or subcontractors make any warranty, expressed or implied, nor assume

any legal liability or responsibility for the accuracy, completeness, or usefulness of any information or data contained within the web site. Reference to any specific commercial products, processes, or services or the use of any trade, firm, or corporation name is for the information and convenience of the public and does not constitute endorsement, recommendation or favoring by the Chesapeake Bay Program partners.

Standard_Order_Process:
Digital_Form:
Digital_Transfer_Information:
Format_Name: ASCII Text File
Format_Information_Content: Station Information data, Monitoring Event data, and Water Quality data
File_Decompression_Technique: No compression applied
Transfer_Size: 2.9

Digital_Transfer_Option:
Online_Option:
Computer_Contact_Information:
Network_Address:
Network_Resource_Name:
[http://www.chesapeakebay.net/data/downloads/cbp_water_quality_database_1984_present]
Access_Instructions: Data are available though the Chesapeake Bay Programs CIMS data hub. Select Water Quality Database (1984-Present). Access the data by following web site (see network resource name) instructions.
Fees: None

Metadata_Reference_Information:
Metadata_Date: 20130419
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Ben Cole
Contact_Position: Natural Resources Biologist
Contact_Address:
Address_Type: mailing and physical
Address: 580 Taylor Avenue, D-2
City: Annapolis
State_or_Province: Maryland
Postal_Code: 21401
Country: USA
Contact_Voice_Telephone: 410 260 8630
Contact_Electronic_Mail_Address: bcole_no_spam_@dnr.state.md.us [remove _no_spam_ for valid email address]
Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998