Maryland Chesapeake Bay Tributary Water Quality Monitoring Program - 2012

Metadata:

Identification_Information:
Citation:
Citation_Information:
Originator: Maryland Department of Natural Resources, Resource Assessment Service
Publication_Date: 20130401
Title: Md DNR Chesapeake Bay Tributary Water Quality Monitoring Program 2012
Geospatial_Data_Presentation_Form: Spatial dataset
Online_Linkage: [http://www.chesapeakebay.net/data/index.htm]

Description:
Abstract:
The physical/chemical component of the Maryland Chesapeake Bay Water Quality Monitoring Program consists of water quality monitoring data collected at seventy tributary stations. Samples at all tributary stations are collected monthly.

This program assesses the water quality by evaluating the levels of nutrients and closely related habitat impacts such as dissolved oxygen and water clarity. One of the main goals of the Chesapeake Bay restoration is to reduce the impacts of excess nutrients on the Bay and its tributaries and these measurements provide some of the most direct linkages to management programs that are achieving this goal. The Chesapeake Bay Program jurisdictions have agreed to reduce nitrogen, phosphorus and sediment pollution to the Bay.

Purpose:
The Maryland Department of Natural Resources Chesapeake Bay Water Quality Monitoring Program is part of a cooperative effort between the Federal government and State and local governments in the Chesapeake Bay watershed to assess the status and trends of nutrient and sediment concentrations in Maryland's Chesapeake Bay mainstem and its tidal tributaries.

The information is integrated with data from other Bay water quality stations and living resources monitoring projects and used to understand linkages, temporal variation and long-term trends.

Water quality data are used to refine, calibrate and validate Chesapeake Bay ecological models. The models are used to develop and assess water quality criteria with the goal of removing the Chesapeake Bay and its tidal rivers from the list of impaired waters.

Supplemental_Information:
The target audiences for this information include Resource Managers, Technical/Scientific Users, Government, Educators, Students and General Public.

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: Complete
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:
Olsen, L.M., G. Major, K. Shein, J. Scialdone, S. Ritz, T. Stevens, M. Morahan, A. Aleman, R. Vogel, S. Leicester, H. Weir, M. Meaux, S. Grebas, C.Solomon, M. Holland, T.

Northcutt, R. A. Restrepo, R. Bilodeau,2012. NASA/Global Change Master Directory (GCMD) Science and Services Keywords. Version 7.0.0.0.0

NASA/Global Change Master Directory (GCMD) Earth Science Keywords. Version 7.0.0.0.0 [online: http://gcmd.gsfc.nasa.gov/learn/keywords.html]

Theme_Keyword: Biosphere > Aquatic Ecosystems > Estuarine Habitat
Theme_Keyword: Biosphere > Aquatic Ecosystems > Rivers/Stream Habitat
Theme_Keyword: Biosphere > Ecological Dynamics > Ecosystem Functions > Nutrient Cycling
Theme_Keyword: Biosphere > Ecological Dynamics > Ecosystem Functions > Primary Production
Theme_Keyword: Terrestrial Hydrosphere > Surface Water > Rivers/Streams
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Chlorophyll
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Conductivity
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Light Transmission
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Nitrogen Compounds
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Nutrients
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Oxygen
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > pH
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Phosphorous Compounds
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Suspended Solids
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Turbidity
Theme_Keyword: Terrestrial Hydrosphere > Water Quality/Water Chemistry > Water Temperature
Place:
Place_Keyword_Thesaurus: Producer Defined
Place_Keyword: Chesapeake Bay
Place_Keyword: Maryland
Place_Keyword: Monitoring Segment
Place_Keyword: Tidal Tributaries
Place_Keyword: Back Creek
Place_Keyword: Back River
Place_Keyword: Big Annemessex River
Place_Keyword: Bohemia River
Place_Keyword: Bush River
Place_Keyword: Chester River
Place_Keyword: Chicamacomico River
Place_Keyword: Choptank River
Place_Keyword: Corsica River
Place_Keyword: Eastern Bay
Place_Keyword: Elk River

Place_Keyword: Fishing Bay
Place_Keyword: Gunpowder River
Place_Keyword: Little Choptank River
Place_Keyword: Magothy River
Place_Keyword: Middle River
Place_Keyword: Manokin River
Place_Keyword: Nanticoke River
Place_Keyword: Northeast River
Place_Keyword: Patapsco River
Place_Keyword: Patuxent River
Place_Keyword: Pocomoke River
Place_Keyword: Potomac River
Place_Keyword: Rhode River
Place_Keyword: Sassafras River
Place_Keyword: Severn River
Place_Keyword: South River
Place_Keyword: Transquaking River
Place_Keyword: Wicomico River

Access_Constraints: None
Use_Constraints: None
Point_of_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Renee Karrh
Contact_Position: Program Manager
Contact_Address:
Address_Type: Mailing and physical
Address: 580 Taylor Avenue, D2
City: Annapolis
State_or_Province: Maryland
Postal_Code: 21401
Contact_Voice_Telephone: 410-260-8630
Contact_Electronic_Mail_Address: rkarrh_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/TribsStns2012.pdf]
Browse_Graphic_File_Description: Map of seventy 2011-2012 Maryland Chesapeake Bay Tributary Water Quality Monitoring Sites.
Browse_Graphic_File_Type: PDF
Data_Set_Credit:
Maryland Department of Natural Resources (MDDNR) Resource Assessment Service (RAS) staff collected the majority of samples and processed the data. The Nutrient Analytical Services Laboratory (NASL) at the Chesapeake Biological Laboratory (Univ. of MD) analyzed chlorophyll, nutrient and suspended solids samples.

The project was made possible with funding provided by The State of Maryland.

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
QUALITY ASSURANCE/QUALITY CONTROL

Maryland Department of Natural Resources followed specific procedures to ensure that the Tributary 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 YSI sondes and 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 Chesapeake Biological Laboratory, Nutrient Analytical Services Laboratory (CBL NASL) results was also 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.

January 2012 - Secchi disk depth at station WIW0141 was measured in direct sunlight. The bottom dissolved oxygen value at station WT6.1 was double checked.

March 2012 - Dissolved oxygen values at station ET9.1 were double checked. At station WIW0114, meter O readings were questioned and a second set of measurements were taken using meter W. The above pycnocline sample at station EE1.1 should have been collected at the 9m depth.

April 2012 - The 3m dissolved oxygen value at station WT8.1 was double checked.

June 2012 - A barge passed by while samples were being collected at station POK0087. The water at TRQ0203 was dark green. Filter pads at station TRQ0224 were bright green. Green flocs were observed in the water at station TF2.4.

July 2012 - There was an H2S odor in the bottom water sample collected at station WT5.1. Green flocs were seen in the water at stations: CCM0069 and TRQ0203.

August 2012 - There were green algae streaks on the station TRQ0224 surface water. Green flocs were seen in the water at station ET3.1.

October 2012 - It was not possible to perform a post-calibration procedure on the sonde used at stations: XGG8251, WT6.1, WT7.1, WT8.1, WT8.2 and WT8.3.

November 2012 - Conditions related to the passage of Super Storm Sandy were noted at stations: CB5.1W, LE1.1, LE1.2, LE1.3, LE1.4, RET1.1, TF1.0, TF1.2, TF1.3, TF1.4, TF1.5, TF1.6, TF1.7 and WXT0001. At stations: CCM0069, TRQ0146, WIW0141 and XDJ9007; first readings were taken with YSI sonde N and second readings were taken using Hydrolab sonde O. Station WT6.1 Hydrolab O measurements were double checked.

There were no known issues in February, May, September and December 2012.

Logical_Consistency_Report:

January 2012 - Station ET5.1 samples were collected from the ramp. Station ET5.2 was sampled from the east end of the fishing pier. Samples at station XGG8251 were taken from the bridge. The Secchi disk depth measurement was taken from the bank under the bridge at station ET4.1.

February 2012 - Station ET7.1 samples were collected from the ferry bulkhead on the South bank of the river. Station ET5.1 samples were collected from the ramp. Station ET5.2 was sampled from the fishing pier. Samples at station XGG8251 were taken from the bridge.

March 2012 - At station EE4.1, it was not possible to sample from the bridge. The station EE1.1 above-pycnocline sample should have been collected at 9m.

May2012 - Station TF1.3 was sampled from the bridge. The WIW0141 samples were collected halfway down the bulkhead.

June 2012 - Sampling of station ET5.2 was conducted from the old bridge. Station TRQ0088 was sampled from the bridge. Station TF1.3 Samples were taken from the bridge. Station ET1.1 sampling was delayed two weeks due to rough seas. Station TRQ0088 was sampled from the bridge.

October 2012 - The WIW0141 samples were collected the bulkhead on the Northern shore.

November 2012 - Station TF1.3 was sampled from the pier.

No other known issues during sampling conducted during April, July, August or December 2012.

Completeness_Report:

January 2012 - Stations EE3.3 and MNK0146 are, routinely, not sampled during January. Total depth was not measured at station WIW0141. Bottom water quality parameter measurements were not obtained at station XGG8251 due to fast current. Heavy seas prevented LICOR readings at stations CB5.1W and LE1.4. Total depth was not measured at Station TF1.3 and the water was not deep enough to make a Secchi disk depth measurement.

February 2012 - LICOR measurements at stations CB5.1W and LE1.4 were not possible due to rough conditions. Secchi disk depth was not measured at station TF1.3. Neither Secchi disk depth nor wave height was measured at station TF1.4. Station TF1.5 was not sampled due to extreme low tide. Secchi depth was not measured at station WXT0001. Dissolved organic carbon samples were not collected at stations: EE3.1 and EE3.2. Air temperature was not measured at stations ET5.1, ET5.2 and XGG8251. Total depth was not measured at stations: WT8.2 and ET4.1. Only a surface bucket reading was performed at station ET4.1 due to bridge construction. It was not possible to determine tidal state at station TRQ0203 due to skim ice.

March 2012 - LICOR readings were not taken at stations CB5.1W, LE1.4 and RET1.1 because of sea conditions. Air temperature was not measured at stations BXK0031, ET10.1 and POK0087.

April 2012 - LICOR measurements at stations CB5.1W and LE1.4 were not possible due to rough conditions. Samples were not taken, due to a broken LICOR instrument, at stations: LE1.1, LE1.2, LE1.3, LE1.4, RET1.1, TF1.5, TF1.6 and TF1.7. The bottom sample was not collected at station EE3.2 because of strong current. At Station TF1.5, total depth and Secchi disk depth were not recorded because there was not water at the dock.

May 2012 - Sea conditions prevented LICOR measurements at station CB5.1W. Secchi and total depth measurements were not acquired at station TF1.3. Station TF1.5 was not sampled because shallow water prevented access.

June 2012 - Above pycnocline and below pycnocline samples were not taken at station ET5.2. Secchi and total depth measurements were not acquired at station TF1.3. Station TF1.5 was not sampled because shallow water prevented access.

July 2012 - Secchi and total depth measurements were not acquired at station TF1.3.

August 2012 - Secchi and total depth measurements were not acquired at stations TF1.3 and WIW0141.

September 2012 - Secchi and total depth measurements were not acquired at station TF1.3. Secchi disk depth was not measured at station ET6.2.

October 2012 - Secchi and total depth measurements were not acquired at station TF1.3. Post calibration procedures were not conducted on the water quality sonde used at stations: EE1.1, ET4.2, WT6.1, WT7.1, WT8.1, WT8.2, WT8.3 and XGG8251.

November 2012 - No samples were collected at stations EE3.2 and EE3.3.

December 2012 - Extreme low tide conditions prevented sampling at station TF1.5. The air temperature was not measured at station XGG8251. Finally, it was not possible to take a bottom sample at station EE3.2.

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

The Yellow Springs Instrument (YSI) 6000 data sondes and HydroLabs were maintained and calibrated before and after each cruise in accordance with manufacturer's recommendations.

HYDROLAB PROFILE SAMPLING PROTOCOLS:

A profile of temperature, specific conductance, dissolved oxygen, and pH was obtained from the water column at 0.5 m, 1.0 m, 2.0 m and 3.0 m depth intervals below the surface. Thereafter readings were taken at 2.0 m intervals and at the bottom. Tributary bottom equals total depth minus one meter (not rounded). If the change in dissolved oxygen exceeded 1.0 mg/L or if the change in specific conductance equaled or exceeded 1,000 micromhos/cm over any 2.0 m interval, readings were taken at 1.0 m intervals between these two readings. For total depths less than or equal to 10.0 m, readings were taken at 1.0 m intervals.

GRAB SAMPLING DEPTH PROTOCOLS:

At stations where two depths were sampled, collections were taken at 0.5 m below the surface, and 1.0 m above the bottom. If the station total depth was equal to 1.5 m, the bottom sample was also collected at 0.5 m. Great caution was exercised when taking bottom samples; if the bottom was disturbed and bottom sediments appeared to have been included, the sample was dumped out and collected after the sediments had settled. Alternately, the sample was collected slightly higher in the water column and the new bottom sample depth was noted.

At stations where 4 depths were sampled and a pycnocline existed, collections were taken at 0.5 m below the surface, 1.5 m above the upper boundary of the pycnocline, 1.5 m below the lower boundary of the pycnocline, and 1.0 m above the bottom.

At stations where 4 depths were sampled and there was no discernable pycnocline, samples were taken at 0.5 m below the surface, at the closest profile depth one third the distance from the surface to the bottom, at the closest profile depth two thirds the distance from the surface to the bottom, and 1.0 m above the bottom.

SECCHI DEPTH:

Water transparency was determined, to the nearest 0.1 m using a 20-cm standard Secchi disc lowered into the water column with a calibrated rope. Observations were made on the shady side of the sampling location.

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:
LABORATORY ANALYSIS - CBL

University of Maryland's Chesapeake Biological Laboratory (CBL), Nutrient Analytical Services Laboratory (NASL) analyzed total dissolved nitrogen, particulate nitrogen, nitrite, nitrite + nitrate, ammonium, total dissolved phosphorus, particulate phosphorus, particulate inorganic phosphorus, orthophosphate, dissolved organic carbon, particulate carbon, total suspended solids, and volatile suspended solids.

The 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.

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: 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 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: Data Analyst
Contact_Address:
Address_Type: mailing
Address: 580 Taylor Ave., D2
City: Annapolis
State_or_Province: MD
Postal_Code: 21401
Contact_Voice_Telephone: 410 260-8630
Contact_Electronic_Mail_Address: ddomotor _Nospam_@dnr.state.md.us [Remove _Nospam_ for valid email address]

Spatial_Data_Organization_Information:
Indirect_Spatial_Reference: Back Creek, Back River, Big Annemessex River, Bohemia River, Bush River, C&D Canal, Chesapeake Bay, Chester River, Chicamacomico River, Choptank River, Corsica River, Eastern Bay, Elk River, Fishing Bay, Gunpowder River, Little Choptank River, Magothy River, Manokin River, Middle River, Nanticoke River, Northeast River,

Patapsco River, Potomac River, Patuxent River, Pocomoke River, Pocomoke Sound, Rhode River, Sassafras River, Severn River, South River, Tangier Sound, Transquaking River, West River and Wicomico River.
Direct_Spatial_Reference_Method: Point

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution: 0.0001
Longitude_Resolution: 0.0001
Geographic_Coordinate_Units: Decimal degrees
Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137
Denominator_of_Flattening_Ratio: 298.257

Entity_and_Attribute_Information:
Overview_Description:
Entity_and_Attribute_Overview:
This metadata record is a description of the Maryland Department of Natural Resources Chesapeake Bay Water Quality Monitoring Program - Chemical and Physical Properties Component Database for the Maryland Chesapeake Bay Tributaries. Project data are an aggregation of data collected at 70 Maryland tributary stations during 2012.

The data are contained in three related entities (tables): Station_Information, Monitoring_Event_Data and Water_Quality_Data. Each table contains attributes (fields).

The entity Station_Information is comprised of the attributes: STATION, DESCRIPTION, WATER_BODY, CBP_BASIN, TS_BASIN, BASIN, CBSEG_2003, CBSEG_2003_DESCRIPTION, HUC8, CATALOGING_UNIT_DESCRIPTION, HUC11, WATERSHED, FIPS, STATE, COUNTY/CITY, FALL_LINE, LATITUDE, LONGITUDE, LL_DATUM, UTM_X and UTM_Y

The entity Monitoring_Event_Data is comprised of the attributes: EVENT_ID, SOURCE, AGENCY, PROGRAM, PROJECT, STATION, EVENT_START_DATE, EVENT_START_TIME, CRUISE, TOTAL_DEPTH, UPPER_PYCNOCLINE, LOWER_PYCNOCLINE, AIR_TEMP, WIND_SPEED, WIND_DIRECTION, PRECIP_TYPE, TIDE_STAGE, WAVE_HEIGHT, CLOUD_COVER, GAGE_HEIGHT, PRESSURE, FLOW_STAGE, DETAILS and WATER_BODY.

The entity Water_Quality_Data is comprised of the attributes: EVENT_ID, SOURCE, PROJECT, STATION, SAMPLE_DATE, SAMPLE_TIME, DEPTH, LAYER, SAMPLE_TYPE, SAMPLE_ID, PARAMETER, QUALIFIER, VALUE, UNIT, METHOD, LAB, PROBLEM, DETAILS, TOTAL_DEPTH, UPPER_PYCNOCLINE, LOWER_PYCNOCLINE, LAT, and LONG.

Entity_and_Attribute_Detail_Citation:
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]

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
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 file, formatted for text attributes, declared format
Format_Information_Content: Station Information data, Monitoring Event data, and Water Quality data
File_Decompression_Technique: No compression applied
Transfer_Size: 2.3

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: 20130418
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Ben Cole
Contact_Organization: Maryland Department Of Natural Resources, Resource Assessment Service
Contact_Position: Natural Resource 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_Facsimile_Telephone: 410-260-8640
Contact_Electronic_Mail_Address: bcole_Nospam_@dnr.state.md.us [Remove _Nospam_ for valid email address]
Metadata_Standard_Name: Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998