

6.0 Permit Requirements

C. Source Identification

Sources of pollutants in stormwater runoff shall be identified and linked to specific water quality impacts on a watershed basis. This process shall be used to develop watershed restoration plans that effectively improve water quality. The following information shall be submitted in geographic information system (GIS) format with associated tables as required in PART IV of this permit.

1. Storm drain system: major outfalls, inlets, and associated drainage areas;
2. Urban best management practices (BMP): stormwater management facility data including locations and delineated drainage areas;
3. Impervious surfaces: delineated controlled and uncontrolled impervious areas;
4. Monitoring locations: locations established for chemical, biological, and physical monitoring of watershed restoration efforts and the *2000 Maryland Stormwater Design Manual* or other innovative stormwater management technologies approved by MDE; and
5. Watershed restoration: restoration project descriptions and locations.

PART IV. PROGRAM REVIEW AND ANNUAL REPORTING OF PROGRESS

A. Annual Reporting

2. To further judge the effectiveness and progress of implementing this permit, the following information shall be submitted on databases (in a format) consistent with Attachment A. Annually, except where noted, the following shall be submitted:
 - a. Storm drain system mapping (PART III. C.1.);
 - b. Urban BMP locations (PART III. C.2);
 - c. Impervious surfaces (PART III. C.3);
 - d. Watershed restoration project locations (PART III. C.5);
 - e. Chemical monitoring (PART III. C.4. and PART III. H.1);
 - f. Illicit Discharge Detection and Elimination activities (PART III. E.4);
 - g. Responsible personnel certification information (PART III. E.3)
 - h. Grading permit information – quarterly (PART III. E.3); and
 - i. Fiscal analyses – cost for NPDES related implementation (PART III. I.)

This section describes the Geographic Information System (GIS) data layers and the databases submitted with the Annual Report. The GIS data layers are described in

Section 6.1. Section 6.2 describes the databases that have been created for the NPDES Report, along with data sources and limitations.

6.1 Source Identification – Geographic Information System Data Layers

6.1.1 Storm Drain System

A series of data layer related to the storm drain system can be found on the accompanying CD under GIS Data Layers//Storm Drain System/StormDrainDataOld. These datalayers represent the Baltimore County storm drain system based on a set of keysheets maintained prior to the development of GIS. The layer was created by a consultant based on the keysheets and available aerial photography. The datalayer is incomplete and does not extend north to the Hunt Valley area of the County. In addition, there are errors in the depiction of the storm drain system, with some systems having no outfalls. The GIS data layer for storm drain system is scheduled to be updated. A pilot project is currently underway to determine the accuracy of the construction drawings in capturing the locations of the inlets, manholes, and outfalls. Preparation of the new storm drain data layer will begin this fall.

The storm drain system is also represented by two files for the out fall locations; Major_outfalls and Minor_outfalls. The drainage areas to the major outfalls are presented in the outfall_drainage.lyr file.

6.1.2 Urban Best Management Practices

The urban best management practices are represented by two datalayers, 2008_SWM_Facilities.shp and SWMDrainage2008.shp. These layers are located under GIS Data Layers/Urban Best Management Practices. The swm06 layer displays the locations of the stormwater management facilities, while the swmDA displays the drainage areas to built facilities.

The location datalayer will have errors due to coordinates either being missing or wrong. Some of this is historical, as until 2000 the County required engineers to submit drawings based on the Baltimore County coordinate system. Conversion to Maryland State Plan resulted in errors.

6.1.3 Impervious Surfaces

The impervious surfaces in Baltimore County are represented by two separate datalayer, building_poly and roads_poly. These layers are located under GIS Data Layers/Impervious Surfaces. The layers were created based on aerials flown in three phases between 1994 and 1996. The building datalayer includes all residential, commercial, and industrial buildings. It also includes sheds, barns and other accessory structures. The roads datalayer includes all roads and parking lots. It does not include driveways, except in rural areas. Sidewalks are not depicted.

The County is currently updating the impervious datalayers, based on aerial photography flown in 2005. It is anticipated that the updated datalayers will be available for next years report.

6.1.4 Monitoring Locations

Monitoring locations for Baltimore County are presented in the three separate files, one for chemical monitoring, one for biological monitoring, and one for geomorphological monitoring. The files are located under GIS Data Layers/Monitoring Site, with a separate file folder for each type of monitoring.

6.1.5 Watershed Restoration

Two data layers are submitted with this report. The file cip.shp displays the locations of the various Capital Restoration Projects along with their type and their status. Cip_drainage_new.shp presents the drainage area to the various restoration projects. This layer is used to calculate the pollutant load reductions that result from restoration efforts associated with stormwater management facility conversions and stormwater management facility retrofits. It is also used to determine the amount of impervious area addressed by restoration activities.

6.2 Databases

All databases can be found on the accompanying CD under the file folder named Data. Each type of monitoring has its own folder under the Data folder.

6.2.1 Chemical Data

Five databases are included with this report. One data base contains the tidal water monitoring data, a second contains the baseflow monitoring data, while a third contains the storm event monitoring data. Also included is the database containing the Scotts Level Branch in-stream gage data and the calculated pollutant concentrations and loads at 15 minute intervals. The final data base contains the calculated EMCs for each storm at the Scotts Level Branch in-stream monitoring site.

6.2.2 Biological Data

The biological data is presented in an Access97 database titled – Benthic EDAS 2007.mdb. This Access application was created by Tetra Tech, Inc for the specific purposed of calculating biological and habitat metric data in accordance with the Maryland Biological Stream Survey (MBSS) protocols. The data base contains biological macroinvertebrate, fish assemblage, and habitat data collected by Baltimore County from 2003 through 2007.

6.2.3 Geomorphological Data

Four Excel spreadsheet files contain the geomorphological data. These files are:

- Scotts Level 2008.xls – This file contains data from the 20 cross section in Scotts Level Branch, including the overlay charts from previous years, and the calculations of cut/fill volumes,
- ScottsLvlProfiles08.xls – Contains the profile data for Scotts Level Branch,
- Windlass Run CX 2008.xls – Contains the cross section data for Windlass Run, and

NPDES – 2008 Annual Report
Section 6 – Geographic Information Analysis and Databases

- Powder Mill 2008.xls – Contains the cross section data for Powder Mill Run. This data was not included in this years report, but will be included in future reports.

6.2.4 Illicit Discharge Detection and Elimination

The results from the illicit discharge monitoring are presented since the inception of the program.

6.2.5 Responsible Personnel Certification Information

A database of Responsible Personnel Certification has not been submitted with this report the information is displayed in Appendix 2-1.

6.2.6 Grading Permit Information

Grading permit information is submitted on a quarterly basis and has not been resubmitted with this report.