CARROLL COUNTY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM INSPECTION REPORT

FINAL
May 2013

Office of Compliance and Enforcement
U.S. Environmental Protection Agency
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Washington, D.C. 20460

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EXECUTIVE SUMMARY

From April 26 through 27, 2012, a compliance inspection team comprising staff from the U.S. Environmental Protection Agency (EPA) Region 3, Maryland Department of the Environment (MDE), and EPA's contractor, Eastern Research Group, Inc. (ERG), inspected Caroll County's municipal separate storm sewer system (MS4) program in Maryland (the County, Carroll County, the Permittee).

The purpose of this inspection was to obtain information that will assist EPA in assessing Carroll County's compliance with the requirements of the Permit, as well as the implementation status of its current MS4 Program.

Based on the information obtained and reviewed, EPA's compliance inspection team made several observations concerning Carroll County's MS4 program related to the specific Permit requirements evaluated. Table 1 below summarizes the Permit requirements and the observations made by the inspection team.

Table 1. Summary of Permit Requirements and Inspection Observations

Permit Requirement	Observations
Part III.C. – Source Identification	Observation 1. Carroll County has not completed mapping of all outfalls.
Part III.E.1. – Stormwater Management	Observation 2. Carroll County has not undertaken and documented enforcement actions for all stormwater management (SWM) facilities. Observation 3. Carroll County does not have a formal training program for inspectors.
Part III.E.2. – Erosion and Sediment Control	Observation 4. Carroll County has detailed and thorough documentation for erosion and sediment control and stormwater control plan review. Observation 5. Carroll County does not have a comprehensive database system to track construction sites and SWM facility inspections. Observation 6. Carroll County construction site inspectors do not inspect concrete washout areas, and were not familiar with best management practices (BMPs) for concrete washout areas. Observation 7. Construction site inspectors are not inspecting all construction sites every two weeks. Observation 8. Carroll County is not escalating enforcement against erosion and sediment control issues in a timely fashion.

Table 1. Summary of Permit Requirements and Inspection Observations

Permit Requirement	Observations	
Part III.E.3. – Illicit Discharge Detection and Elimination	Observation 9.	Carroll County screens outfalls at existing SWM facilities (e.g., stormwater ponds) for dry weather flow, and therefore is not targeting high risk outfalls, such as those near commercial or industrial activities.
	Observation 10.	Carroll County inspectors are not examining inflow points into SWM structures to determine if illicit discharges are occurring.
	Observation 11.	Carroll County's MS4 program does not conduct surveys at commercial or industrial facilities.
	Observation 12.	Sanitary sewer overflows (SSOs) that enter the Carroll County MS4 are not being reported to the MS4 program by the Department of Public Works (DPW).
Part III.E.4. – County Property Management	Observation 13.	Carroll County has not developed stormwater pollution prevention plans (SWPPPs) for its two closed landfills, each having a general permit.
	Observation 14.	The SWPPP for the county-owned Northern Landfill has not been fully implemented.
	Observation 15.	Inspections at the Carroll County Maintenance Facility are being conducted; however, a number of issues were identified which could have been corrected if more thorough inspections were being conducted.
Part III.E.5. – Road Maintenance	Observation 16.	Carroll County is actively working on improving road maintenance activities.
	Observation 17.	Excessive use of "Round-up™" herbicide at the Carroll County Regional Airport has denuded an entire hillside, creating the potential for destabilization and soil erosion.

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INTRODUCTION

From April 26 through 27, 2012, a compliance inspection team comprising staff from the U.S. Environmental Protection Agency (EPA) Region 3, Maryland Department of the Environment (MDE), and EPA's contractor, Eastern Research Group, Inc. (ERG), inspected Carroll County's municipal separate storm sewer system (MS4) program in Maryland (the County, Carroll County, the Permittee). Discharges from the County's MS4 are regulated by National Pollution Discharge Elimination System (NPDES) Permit Number MD0068331 (the Permit), which is included in Attachment 1.

The purpose of this inspection was to obtain information that will assist EPA in assessing Carroll County's compliance with the requirements of the Permit, as well as the implementation status of its current MS4 Program. The inspection schedule is presented in Attachment 2.

The EPA Inspection Team obtained its information through a series of interviews with representatives from Carroll County, along with a series of site visits, record reviews, and field verification activities. The primary representatives involved in the inspection were the following:

Carroll County:	**Department of Land Use, Planning and Development** Mr. Tom Devilbiss, Deputy Director Mr. Glenn Edwards, NPDES Compliance Specialist **Bureau of Resource Management** Ms. Gale Engles, Bureau Chief Mr. Martin Covington P.E., Program Engineer Stormwater Management Mr. Myron Frock, Stormwater Review Assistant Mr. Tim Hare, Chief Sediment Control Inspector Mr. Paul Stoner, Environmental Inspector/Grading Reviewer Mr. Jason Stick, Floodplain Management Specialist **Department of Public Works** Mr. Thomas Rio, Director Mr. Jeffery Topper, Deputy Director Mr. Dwight Amoss, Landfill Manager
EPA Representatives:	Mr. Andrew Dinsmore, EPA Region 3 Ms. Rebecca Glyn, EPA Region 9 (on detail to Region 3) Ms. Dianne McNally, Chesapeake Bay Regional Manager Ms. Aureana Nguyen , EPA Region 3
Maryland MDE Representatives:	Ms. Deborah Cappuccitti, Natural Resources Planner Ms. Manu Shrivastava, Regulatory and Compliance Engineer Ms. Maria Warburton, Natural Resources Planner
EPA Contractors:	Mr. Mark Briggs, ERG Ms. Eleanor Ku Codding, ERG Ms. Kavya Kasturi, ERG

Ms. Daisy Wang, ERG

For a complete list of all inspection participants, please refer to the sign-in sheets in Attachment 3. After introductions, Andrew Dinsmore, EPA, presented his enforcement officer credentials to Carroll County representatives, provided business cards with his contact information, identified that Section 308 of the Clean Water Act gives EPA the authority to conduct inspections, and described the purpose of the inspection.

During the inspection, the EPA Inspection Team obtained documentation and other supporting evidence regarding compliance with the Permit. Pertinent information may have been obtained prior to, and/or after meeting with Carroll County staff during the physical inspection, and is presented in this report as observations. The presentation of inspection observations in this report does not constitute a formal compliance determination or notice of violation. All referenced documentation used as supporting evidence is provided in Attachment 4 and photo documentation is provided in Attachment 5. A complete list of documents obtained is provided as a Document Log in Attachment 6. Documents provided by Carroll County after the inspection are included in Attachment 7. A number of compliance assistance and/or suggestions for program improvements are provided in Attachment 8.

The report below describes and outlines the Permit requirements with the applicable permit sections cited, the related requirements and observations made during the inspection. The format of the report follows the numeric system used in the Permit. Sections of the Permit are restated with observations about those requirements listed below.

Partly cloudy weather conditions were experienced during most of the inspection activities. Weather history reports from the National Climatic Data Center for Westminster, MD indicated 0.06 inches of rainfall occurred during the inspection. In addition, weather history reports indicated approximately 1.14 inches of precipitation had fallen in the three days prior to the inspection and approximately 0.08 inches of rain had fallen in the three days following the inspection.

CARROLL COUNTY BACKGROUND

Carroll County has been developing and implementing its MS4 Program since November 17, 1993. Carroll County's current NPDES permit became effective on July 14, 2005 and was to expire July 14, 2010. The Permit was administratively continued since MDE has not issued a new permit.

Carroll County encompasses approximately 289,536 acres of land, which includes 320 acres of water area[1]. Sixty-five percent (65%) of land use in Carroll County is agricultural. According to Carroll County's 2011 NPDES MS4 Permit Annual Report (Annual Report), the total population of Carroll County is estimated to be 167,929 people based on the County's Population estimates, dated June 31, 2011. However, the population served by the MS4 system, outside of the

[1]Carroll County Department of Economic Development. *Brief Economic Facts.* <http://www.carrollbiz.org/datacenter/pdf/CarrollBEF2011.pdf>

incorporated municipalities, is 118,835. The MS4 discharges into the following watersheds: Upper Monocacy River, Lower Monocacy River, Conewago Creek, Prettyboy Reservoir, Loch Raven Reservoir, Liberty Reservoir, Double Pipe Creek, Lower North Branch Patapsco River, and South Branch Patapsco River.

The Annual Report states that currently the County has three primary personnel dedicated to compliance with the MS4 NPDES Permit, plus an additiona16 part-time staffers involved as, inspectors, planners and watershed staff. The County's SWM program is the responsibility of the Department of Land Use, Planning and Development (DLUPD). Design and review are the responsibility of the Program Engineer and Stormwater Management Review Assistant. The Environmental Inspection Division (EID) of the Bureau of Resource Management (BRM) is responsible for inspection of facilities and enforcement of all related codes. Funding for the Carroll County MS4 program is provided through the County's operating budget, and does not include a residential stormwater fee. The County's total operating expenditures for the 2010/2011 permit year was $518,868.32. The County's total capital expenditure for the 2010/2011 permit year was $672,476.04.

INFORMATION OBTAINED RELATIVE TO PERMIT REQUIREMENTS

Part III: Standard Permit Conditions

Part III.C. (Source Identification) – Part III.C of the Permit requires that the permittee identify the sources of pollutants in stormwater runoff and link them to specific water quality impacts on a watershed basis. Part III.C.1 requires the permittee to map in GIS the "Storm Drain System: major outfalls, inlets and associated drainage areas;" In addition, the permittee is required to develop watershed restoration plans that effectively improve water quality. Finally, the permittee is required to store information about the County's storm drain systems, urban best management practices (BMPs), impervious surfaces, monitoring locations, and watershed restoration project descriptions and locations in a Geographic Information System (GIS) format.

Carroll County has developed an extensive GIS system that maps SWM facilities. The database stores attributes for each SWM facility, such as its drainage area, which the County computed using topographic maps. The GIS database also has the capability to link to databases with other attribute information, such as inspection dates and inspection findings. Carroll County initially focused on completing mapping for incorporated municipalities, since those are the areas of the most concentrated development and population. As of the first quarter of 2012, mapping for those incorporated areas is complete.

Observation 1: Carroll County has not completed mapping of all outfalls for the entire county. There are 814 "as-built" certified and approved stormwater facilities throughout the County. A total of 469 of 814, or 58% of the SWM facilities and drainage areas have been mapped with associated data, in various watersheds.

The County has no defined plan for locating and mapping all outlets; data is added to the map in various ways. First, according to page 3 of the Annual Report, developers are required to submit all new storm sewer systems and BMP as-built surveys in digital data showing location and

inverts for the storm drain system and drainage areas. Thus, as new growth occurs in the municipalities and new storm drain systems are added to the infrastructure, they are incorporated into the County's GIS. In addition, the County enters data for watersheds as specific studies are being performed for those areas. Finally, as BMPs and outfalls are inspected, the information is added to the GIS system. The remaining unidentified outlets that are not captured by the aforementioned methods are only discovered by chance during inspections or while driving around the County.

Part III.E.1. (Stormwater Management) – Part III.E. of the Permit requires the Permittee shall inspect and maintain public SWM and BMP facilities. At a minimum, the permittee will conduct preventative maintenance inspections of all SWM facilities on at least a triennial basis. Documentation of inspections, enforcement actions, and other relevant information is required to be submitted in the County's annual reports.

Observation 2: Page 38 of the Annual Report states that the County conducted 203 inspections of SWM facilities in 2011, which resulted in 65 corrective actions and 35 Notices of Violations. Each facility is required to be inspected every three years after which letters are sent to the owner indicating the condition of the facility, and the amount of time allowed for compliance to be achieved, if necessary.

However, the County has not undertaken and documented enforcement actions for all SWM facilities. For example, at the Village Gate Facility Number 4 site, inspectors noted repeated problems with trees growing on the embankment of Basin #4. This problem was noted during seven inspections conducted at the site between 2000 and 2010 (see Exhibit 1 of Attachment 4). No documentation of enforcement action is in the SWM facility inspection file. A note from the lead inspector dated March 26, 2012 states that the trees will be kept, however, no further documentation or explanation is provided.

Observation 3: Carroll County does not have a formal training program for inspectors. Currently, the County employs veteran inspectors, and relies heavily on institutional knowledge and inspector expertise. While basic inspection information is documented in the form of standard operating procedures and manuals, the documentation does not provide specific inspection procedures (see Exhibit 2 of Attachment 4). County staff stated new inspectors would receive on-the-job training, but beyond on-the-job training, the County does not have a system for capturing and conveying inspector expertise to new inspectors. Carroll County cannot guarantee effective inspections without a formal training program.

Part III.E.2. (Erosion and Sediment Control) – Part III.E.2 of the Permit requires that the permittee maintain an acceptable erosion and sediment control program. At a minimum, the permittee must address needed program improvements identified during MDE's evaluation of

the permittee's application for the delegation of erosion and sediment control enforcement authority. Additionally, the permittee must conduct responsible personnel certification classes to educate construction site operators regarding erosion and sediment control compliance at least twice per year, and record the activity on MDE's green card database. Finally, the permittee must report information on a quarterly basis regarding earth disturbances of one acre or more.

According to the Annual Report, MDE has delegated sediment control enforcement authority for Carroll County through June 30, 2013. EID is responsible for inspections related to building permits, grading permits, forest-harvest grading permits, NPDES storm sewer outfall and SWM facility inspections.

Observation 4: Carroll County has a detailed and extensively documentated program for the review of both erosion and sediment control plans and stormwater control plans. Carroll County has developed, and continues to update, its "Supplement to the 2000 Maryland Stormwater Design Manual Volumes I & II". The document provides implementation details and design aids for specific situations that may be encountered. The applicability of the document is not limited to Carroll County; the County has made the document publicly available online and has received comments and questions from users outside of Carroll County.

Observation 5: Carroll County does not have a comprehensive database system to track construction sites and SWM facility inspections. The County largely relies on paper inspection forms and files. The County also maintains multiple independent databases, including at least two site plan review databases, a grading permit and construction site inspection database, and a SWM facility inspection tracking database. The inspection databases document that an inspection has occurred, but do not link to historic inspection records or inspector comments. The various systems employed could lead to inspection inconsistencies and tracking difficulties. For example, an inspector stated he was informed of new construction sites to inspect in three ways. Primarily, he is notified of new construction sites via a grading permit print out from the inspector supervisor once a month. Second, he is notified of new building permits as they are approved throughout the month. Lastly, he identifies construction sites that are not yet in the tracking system while driving around his region. He keeps track of these numerous changes by hand.

Observation 6: Carroll County inspectors do not inspect concrete washout areas, and were not familiar with BMPs for concrete washout areas. The EPA Inspection Team visited the Knorr Brake Corporation Westminster Technology Park, Lot 3 construction site on April 27, 2012, located at 1 Arthur Peck Drive, Westminster, MD. During the visit, the EPA Inspection Team noted the presence of an unlined concrete washout pit (see Photograph 1 in Attachment 5). The Chief Sediment Control Inspector did not visit the concrete plant on site (see Photograph 2 of Attachment 5), and stated that inspectors typically do not visit such areas. Additionally, the County's

Sediment Control and Grading Procedure Manual, used by construction site inspectors, does not discuss non-sediment pollutants.

Observation 7: According to Maryland Model Erosion and Sediment Control Model Ordinance (February 2012) and the Code of Maryland Regulations (COMAR) 26.17.1 construction sites should be inspected on average every two weeks. Construction site inspectors are not inspecting all construction sites every two weeks. Records from the Mount Airy Middle School site show that since August 2011, more than one month has elapsed between inspections on three separate occasions (see Exhibit 3 of Attachment 4). Additionally, records from Antrim Mini-Storage show that the site was inspected only twice between December 19, 2008 and April 1, 2009 (see Exhibit 4 of Attachment 4). One inspection occurred on January 14, 2009, 26 days after the last inspection. The next inspection occurred 31 days later on February 20, 2009. The next inspection occurred on April 1, 2009, 46 days later. While the site was inactive, the site was not in compliance with its approved erosion and sediment control plan. The issues were initially identified by the inspector on December 2, 2008 and were not resolved until July 8, 2009.

Observation 8: Carroll County is not escalating enforcement against erosion and sediment control issues in a timely fashion. Records from Antrim Mini-Storage show that issues identified during a December 2, 2008 inspection were not resolved until July 8, 2009 (see Exhibit 4 of Attachment 4). Carroll County repeatedly notified the site operator, but did not state that the case would be referred to the County Attorney until April 2009. The site file does not contain any documentation that the issue was referred to the attorney. The issue remained unresolved until July 8, 2009.

Part III.E.3. (Illicit Discharge Detection and Elimination) – Part III.E.3 of the Permit requires that the permittee maintain an inspection and enforcement program to ensure that all discharges to and from the MS4 system that are not composed entirely of stormwater are either permitted by MDE or eliminated. At a minimum, the Permittee must screen 100 outfalls a year and any outfall with a discharge must be sampled with a chemical test kit. Additionally, the Permittee must conduct routine surveys of commercial and industrial watersheds for discovering and eliminating pollutant sources. The Permittee must also maintain a program to address illegal dumping and spills, and use appropriate enforcement procedures for investigating and eliminating illicit discharges, illegal dumping, and spills. Finally, significant discharges must be reported to MDE for enforcement, and all illicit discharge detection and elimination activities must be reported in the Annual Report.

Observation 9: Dry weather screening of outfalls is associated with existing SWM facilities (e.g., stormwater ponds) and outfalls are therefore not necessarily selected based on high-risk such as commercial or industrial activities. According to page 39 of the Annual Report, inspections throughout Carroll County are performed on a five-year rotation; however, areas such

as industrial parks and selected outfalls near the incorporated municipalities may be inspected more frequently, as would any identified problem outfall. According to Carroll County inspectors, 633 outfalls have been dry weather screened as of April 2012, however no database exists to determine if actual problem outfalls or commercial industrial areas are being targeted.

Observation 10: Carroll County inspectors are not examining inflow points into SWM structures to determine if illicit discharges are occurring. According to the inspector, he focuses his inspections on the integrity of the overall system and pays particular attention to the outfall to determine if dry weather flow is present. The Outfall Reconnaissance Inventory Sheet (see Exhibit 5 of Attachment 4) used by the inspectors focuses on flow at the outfall from the structure and does not include questions regarding inflow to the structure. During dry weather periods, water levels in structures such as ponds may be below overflow structures at outfalls and therefore no flow may be leaving the structure, even though dry weather discharges may be entering the structure.

Observation 11: Carroll County's MS4 program does not conduct surveys at commercial or industrial facilities. In addition, MS4 program personnel stated they are not working with other local government agencies such as the local fire departments or the Carroll County Health Department to relay information regarding potential stormwater impacts when these entities are conducting their inspections.

Observation 12: SSOs that enter the Carroll County MS4 are not being reported to the MS4 program by the DPW. In 2011, three SSOs, having a combined total volume of nearly 280,000 gallons, were discharged to unnamed tributaries that ultimately discharged to waters of the State of Maryland (see Exhibit 6 of Attachment 4). MS4 program staff should be informed when SSOs reach their system so that follow-on response (i.e., cleanup of the sewage from the MS4) can be documented.

Observation 14: Part III.E.6.a of the Permit requires Carroll County to "Continue to publicize a compliance hotline for the public reporting of suspected illicit discharges and, illegal dumping and spills." Carroll County has not developed an outreach program that informs citizens about illegal dumping and spills, or the method to report illegal dumping and spills.

Part III.E.4. (County Property Management) – Part III.E.4 of the Permit requires the permittee to identify all county-owned and municipal facilities requiring NPDES stormwater general permit coverage and submit Notices of Intent to MDE for each. The status of pollution prevention plan development and implementation shall be submitted annually.

Observation 14: Carroll County has not developed stormwater pollution prevention plans (SWPPPs) for its two closed landfills, each having a general permit. County personnel stated they were unsure if SWPPPs were needed at these facilities since no activity is occurring; however, upon EPA inspection of the Hodges Landfill on April 26, 2012, subsidence of the landfill cap was observed (see Photograph 3 of Attachment 5). Had a SWPPP been developed for this landfill and an inspection program implemented, landfill cap subsidence would have been documented and plans could have been developed to correct the issue.

Observation 14: The June 2011 SWPPP prepared by URS Corporation for the County-owned Northern Landfill has not been fully implemented. The Carroll County Northern Landfill is an active landfill and, based on the information provided, appears to have a general industrial stormwater permit from MDE (see Exhibit 7 of Attachment 4), not an individual industrial stormwater permit. Neither quarterly nor annual stormwater inspections are being documented for the Northern Landfill. During a walk-through of the landfill on April 26, 2012, a number of issues were identified which could have been corrected if inspections were being conducted. For example, Pond #4, designed to collect sediment from the asphalt shingle scrap area and the transfer station area, had significant amounts of sediment, reducing its effectiveness (see Photographs 4 of Attachment 5). Oil-stained soils and oil-containing equipment were observed in the metal collection and recycling area (see Photographs 5 and 6 of Attachment 5). Discharges from this area along with other areas of the landfill first enter Pond #1 before discharging to a small stream (see Photograph 7 of Attachment 5).

Observation 15: Inspections at the Carroll County Maintenance Facility were being conducted by County Staff. A number of issues were identified which could have been corrected if more thorough inspections were being conducted by County Staff. For example, EPA conducted a walk-through inspection of the Maintenance Facility on April 26, 2012, and found paint solids that had been dumped outside the paint storage building on to a paved and exposed area (see Photograph 8 of Attachment 5). In addition, rusted, full containers of mineral oil were placed on the gravel floor of an equipment storage barn, which allows stormwater to enter.

Part III.E.5. (Road Maintenance) – Part III.E.5 of the Permit requires the permittee to maintain its plan to reduce pollutants associated with road maintenance activities. At a minimum, the permittee is required to document street sweeping; inlet cleaning; reducing the use of pesticides, herbicides, fertilizers, and other pollutants associated with roadside vegetation management through the use of integrated pest management; and controlling the overuse of winter weather deicing materials through continual testing and improvement of materials, equipment calibration, employee training, and effective decision-making.

Observation 16: Carroll County is actively working on improving road maintenance activities. For example, Carroll County has installed a zero-discharge truck wash station at the Maintenance Facility. This system recycles truck wash water through a filtration unit for reuse. Carroll County has also installed a salt recovery system at their Hodges Landfill salt barn. Salt that drops on to the concrete staging area near the salt barn can be swept into an underground vault, mixed with water, and the resulting salt brine can be applied to roadways for deicing (see Photograph 9 of Attachment 5).

Observation 17: Excessive use of "Round-up™" herbicide at the Carroll County Regional Airport has denuded an entire hillside, creating the potential for destabilization and soil erosion (see Photograph 10 of Attachment 5).

Part III.F.&G. (Watershed Assessment and Planning & Watershed Restoration) - The Permit requires Carroll County to continue its systematic assessment of water quality within its watersheds and development of watershed management plans for controlling urban stormwater runoff, improving water quality, and protecting drinking water reservoirs. Additionally, the Permit requires the implementation of watershed restoration activities identified in the watershed management plans.

Observation 18: The County actively works on watershed restoration and impervious surface area reduction through watershed assessments, retrofitting and building new SWM facilities, tree plantings, and educating the public. In 2011, Carroll County performed Stream Corridor Assessments (SCA) on the Prettyboy watershed to assess the health of the stream systems. Carroll County ultimately evaluated 80 out of the 100 miles of stream within the watershed for impairments. Carroll County also continues to monitor the Air Business Park watershed to determine the effectiveness of SWM practices for stream channel protection. This long-term monitoring program has resulted in data that show the retrofit has significantly decreased the erosive energy of stormwater leaving the watershed.

The County completes watershed assessments and has also implemented restoration and retrofits. Since landowners own streams on their property, the county reached out to property owners to determine their interest in buffer plantings at the county's cost. For interested parties, the County completed buffer plantings and required the landowner to maintain the buffer, providing information on how to do so. Additionally, the county identified SWM facilities with regular issues and targeted such facilities for retrofitting. In cases where the County has had to excavate to create the retrofit, such as the Parrish Park and Harvest Farms retrofit projects, Carroll County reached out to farmers with space to accept the excavated soil instead of landfilling the soil. The results benefitted both the county and the farmers by reducing disposal costs for the county and turning previously unusable property into fields for farming.