

**Post-Construction Site  
Inspection and Maintenance Procedures**

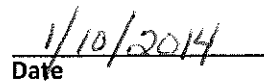
**January 9, 2014**

**By**

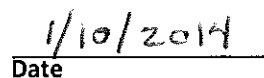
**Jessica Verrigni, CPESC, CPSWQ  
Chemung County Stormwater Technician**

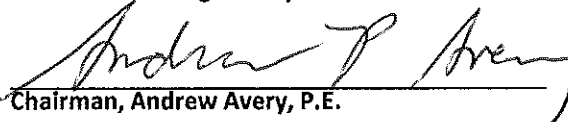
Approved:

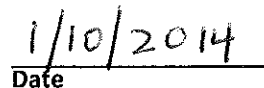
  
\_\_\_\_\_  
Author, Jessica Verrigni, CPESC, CPSWQ

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Peer Reviewer, Jimmie Joe Carl, P.E.  
Director Chemung County Stormwater Coalition

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Chairman, Andrew Avery, P.E.  
Chemung County Stormwater Coalition Board of Directors

  
\_\_\_\_\_  
Date

## Table of Contents

A. Purpose.....	1
B. Applicability.....	1
C. Summary of Method.....	1
D. Personnel Qualifications.....	1
E. Procedural Steps.....	2
F. Field Procedures.....	3
G. Inspection Report.....	4
H. MS4 Notification.....	4
I. Records Management.....	4

### Appendices

- A. Municipal Post-Construction Stormwater Management Inspection Checklist  
adapted from New York State Department of Environmental Conservation's  
Stormwater Design Manual
- B. Chemung County Stormwater Coalition Photo Page

## **A. Purpose**

The purpose of this Standard Operating Procedure (SOP) is to establish uniform procedures pertaining to the preparation for, and the performance of municipal post-construction stormwater management practice inspections performed by the Chemung County Stormwater Coalition. The municipal post-construction stormwater practice inspections are performed as a means of documenting and tracking compliance with each municipality's Erosion and Sediment Control and Stormwater ordinances established per the New York State Department of Conservation's (NYS DEC) State Pollutant Discharge Elimination System General Permit for Stormwater Activities from Municipal Separate Storm Sewer System (MS4) requirements.

Specifically, the inspections are conducted to ensure that the practices are performing properly as well as ensure long-term operation and maintenance of all post construction stormwater management practices installed since March 10, 2003

The inspector may deviate from these procedures when necessary due to unexpected or unique situations that may occur in the field. Any deviation must be noted in the inspection report.

## **B. Applicability**

The policies and procedures of the SOP are applicable to all personnel involved in the planning, coordination, preparation, conducting and reporting of municipal post construction stormwater management practice inspections.

## **C. Summary of Method**

The Municipal Post-Construction Stormwater Management Practice Inspection is performed to ensure all post-construction practices are properly functioning and are in compliance with the local MS4 Stormwater and Erosion and Sediment Control Ordinance. The inspection evaluates all components of the practices to make sure practices are being operated and maintained in accordance with the approved Stormwater Pollution Prevention Plan (SWPPP). The inspector reports directly to the designated MS4 Stormwater Management Officer and provides the municipality with a copy of the Municipal Post-Construction Practice Inspection Checklist (Appendix A) and the Chemung County Stormwater Coalition Photo Page (Appendix B) containing the photos that were taken during the inspection. If a practice is found to be out of compliance with the ordinance or the original SWPPP, the municipality can, in turn, react to the issue at that time.

#### **D. Personnel Qualifications**

The personnel performing the municipal construction site inspections shall be a person knowledgeable in the principles and practices stormwater management, such as a licensed Professional Engineer in the State of New York or a Certified Professional in Stormwater Quality (CPSWQ) or Certified Professional in Erosion and Sediment Control (CPESC).

#### **E. Procedural Steps**

Municipal Post-Construction Stormwater Management Practice Inspections involve inventorying and inspecting all post-construction stormwater management practices installed since March 10, 2003 within the designated MS4, preparation for the site inspection, the site inspection, the documentation of findings, and the notification of findings to the MS4 Stormwater Management Officer.

##### **1. Inspection Selection**

An inventory of post-construction stormwater management located within designated MS4 communities will be kept at the Chemung County Stormwater Coalition Team office located at 851 Chemung Street, Horseheads, NY. The list shall state the location of practice (street address or coordinates); type of practice; maintenance needed per the NYS Stormwater Management Design Manual; and dates and type of maintenance performed. All practices will be inspected once every three years.

##### **2. Preparation for Inspection**

###### **a. Stormwater Pollution Prevention Plan (SWPPP) Documents (if available)**

Prior to the inspector performing the municipal post-construction stormwater management practice inspection, the inspector shall gather the approved SWPPP for the site. The inspector shall review the approved documents to become familiar with the:

- Post-Construction Stormwater Management Practices
- Grading Plans
- Operation and Maintenance Plans

###### **b. Previous Inspection Records**

Review all previous inspection records for the post-construction practice. Become familiar with items that have been noted as needing action.

###### **c. Assemble and prepare appropriate inspection equipment (i.e. safety vest, camera, measuring tape, clipboard, etc.)**

## **F. Field Procedures**

The municipal post- construction site inspection consists of a member of the Chemung County Stormwater Coalition Team or the designated MS4 Stormwater Management Officer going to inventoried post-construction practice locations to confirm compliance with local stormwater management and erosion and sediment control ordinance.

### **a. Site Entry**

Upon entering the property, the inspector should locate the owner to make them aware a municipal inspection is being performed. The inspector shall invite this person to accompany the inspector during the municipal inspection.

### **b. Inspection**

Utilizing the operation and maintenance plan, the site drawings, and the Municipal Post-Construction Stormwater Management Inspection Checklist, walk the entire post-construction stormwater management practice location area. Identify areas of concern where there is potential for pollutants, sediment or stormwater to leave the practice without treatment. During the inspection check:

- (1) All items that is applicable on the inspection checklist (inlets, outlets, vegetation, etc.)
- (2) Note any areas of concern and areas where action is needed
- (3) Take photographs of all components of the practice

### **c. Fill out the Municipal Construction Post-Construction Stormwater Management Inspection Checklist adapted from the NYS Department of Environmental Conservations Stormwater Design Manual Inspection Checklist (Appendix A).**

## **G. Inspection Report**

Download photographs from the inspection and import them into the Chemung County Stormwater Coalition Team Photo Page (Appendix B). Place captions for the pictures. Once the report is finalized attach photo page to inspection checklist. Scan the entire inspection report and upload it to the GIS mapping system. Update the municipal inventory list to reflect date of inspection.

## **H. MS4 Notification**

Provide a copy of the inspection report with the photo page to the MS4 Stormwater Management Officer. Review with them the results of the inspection and formulate a plan of action if there are items requiring correction. The MS4 will follow the Maintenance Guarantee section of their Stormwater Management and Erosion and Sediment Control Local Law to require identified issues are addressed by the Owner.

## **I. Records Management**

The Municipal Post-Construction Stormwater Management Practice Inspection Checklist will be kept on file at:

- One copy will be kept by the MS4
- One copy will be kept on file at the Chemung County Stormwater Coalition Office
- A digital copy will be linked to the Chemung County Stormwater Coalition GIS mapping system

# Appendix A

## Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site Status: \_\_\_\_\_

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Inspector: \_\_\_\_\_

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
<b>1. Embankment and emergency spillway (Annual, After Major Storms)</b>		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		



Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
<b>2. Riser and principal spillway (Annual)</b>		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____		
1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1" )		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
<b>3. Permanent Pool (Wet Ponds) (monthly)</b>		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
<b>4. Sediment Forebays</b>		
1. Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
<b>5. Dry Pond Areas</b>		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
<b>6. Condition of Outfalls (Annual , After Major Storms)</b>		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls / Headwalls		
5. Other (specify)		
<b>7. Other ( Monthly)</b>		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3. Aesthetics		
a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
<b>8. Wetland Vegetation (Annual)</b>		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

**Comments:**

---



---



---



---



---

**Actions to be Taken:**

---

---

---

---

## Sand/Organic Filter Operation, Maintenance and Management Inspection Checklist

Project:  
Location:  
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>1. Debris Cleanout (Monthly)</b>		
Contributing areas clean of debris		
Filtration facility clean of debris		
Inlet and outlets clear of debris		
<b>2. Oil and Grease (Monthly)</b>		
No evidence of filter surface clogging		
Activities in drainage area minimize oil and grease entry		
<b>3. Vegetation (Monthly)</b>		
Contributing drainage area stabilized		
No evidence of erosion		
Area mowed and clipping removed		
<b>4. Water Retention Where Required (Monthly)</b>		
Water holding chambers at normal pool		
No evidence of leakage		
<b>5. Sediment Deposition (Annual)</b>		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Filter chamber free of sediments		
Sedimentation chamber not more than half full of sediments		
<b>6. Structural Components (Annual)</b>		
No evidence of structural deterioration		
Any grates are in good condition		
No evidence of spalling or cracking of structural parts		
<b>7. Outlet/Overflow Spillway (Annual)</b>		
Good condition, no need for repairs		
No evidence of erosion (if draining into a natural channel)		
<b>8. Overall Function of Facility (Annual)</b>		
Evidence of flow bypassing facility		
No noticeable odors outside of facility		

**Comments:**

---



---



---



---



---



---



---

**Actions to be Taken:**

---



---



---



---



---

## Open Channel Operation, Maintenance, and Management Inspection Checklist

Project:  
 Location:  
 Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>1. Debris Cleanout (Monthly)</b>		
Contributing areas clean of debris		
<b>2. Check Dams or Energy Dissipators (Annual, After Major Storms)</b>		
No evidence of flow going around structures		
No evidence of erosion at downstream toe		
Soil permeability		
Groundwater / bedrock		
<b>3. Vegetation (Monthly)</b>		
Mowing done when needed		
Minimum mowing depth not exceeded		
No evidence of erosion		
Fertilized per specification		
<b>4. Dewatering (Monthly)</b>		
Dewaterers between storms		

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>5. Sediment deposition (Annual)</b>		
Clean of sediment		
<b>6. Outlet/Overflow Spillway (Annual)</b>		
Good condition, no need for repairs		
No evidence of erosion		

**Comments:**

---

---

---

---

---

---

---

---

---

---

**Actions to be Taken:**

---

---

---

---

---

---

---

---

---

---



## Infiltration Trench Operation, Maintenance, and Management Inspection Checklist

Project:  
 Location:  
 Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>1. Debris Cleanout (Monthly)</b>		
Trench surface clear of debris		
Inflow pipes clear of debris		
Overflow spillway clear of debris		
Inlet area clear of debris		
<b>2. Sediment Traps or Forebays (Annual)</b>		
Obviously trapping sediment		
Greater than 50% of storage volume remaining		
<b>3. Dewatering (Monthly)</b>		
Trench dewaterers between storms		
<b>4. Sediment Cleanout of Trench (Annual)</b>		
No evidence of sedimentation in trench		
Sediment accumulation doesn't yet require cleanout		
<b>5. Inlets (Annual)</b>		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Good condition		
No evidence of erosion		
<b>6. Outlet/Overflow Spillway (Annual)</b>		
Good condition, no need for repair		
No evidence of erosion		
<b>7. Aggregate Repairs (Annual)</b>		
Surface of aggregate clean		
Top layer of stone does not need replacement		
Trench does not need rehabilitation		

**Comments:**

---



---



---



---



---



---

**Actions to be Taken:**

---



---



---



---



---



---

## Bioretention Operation, Maintenance and Management Inspection Checklist

Project:  
 Location:  
 Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
<b>1. Debris Cleanout (Monthly)</b>		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
<b>2. Vegetation (Monthly)</b>		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
<b>3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)</b>		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
<b>4. Dewatering (Monthly)</b>		
Dewaters between storms		
No evidence of standing water		
<b>5. Sediment Deposition (Annual)</b>		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
<b>6. Outlet/Overflow Spillway (Annual, After Major Storms)</b>		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
<b>7. Integrity of Filter Bed (Annual)</b>		
Filter bed has not been blocked or filled inappropriately		

**Comments:**

---

---

---

---

---

---

---

---

**Actions to be Taken:**

---

---

---

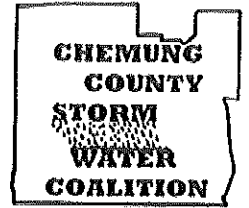
---

---

---

---

---



**Operation, Maintenance and Management Inspection  
For Dry Wells**

Project:  
 Location:  
 Site Status:  
 Date:  
 Time:  
 Inspector:

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
Have performance issues been identified and/or witnessed?		
Is there standing water inside of the dry well?		
Are there signs of structural deterioration?		
Is there evidence of flow bypassing the facility?		
Is there evidence of noticeable odors outside of the facility?		
Does it appear that sediment and/or debris has accumulated within the structure?		
Is the Operation and Maintenance Plan being followed?		

**Comments:**

---



---



---

**Actions to be Taken:**

---



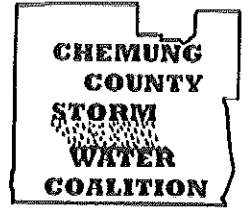
---



---

**CHEMUNG COUNTY STORMWATER COALITION**

851 Chemung Street, Horseheads, New York 14845



**Operation, Maintenance and Management Inspection  
For Underground practices**

Project:

Location:

Site Status:

Date:

Time:

Inspector:

<b>Maintenance Item</b>	<b>Satisfactory/ Unsatisfactory</b>	<b>Comments</b>
Is Operation and Maintenance Plan being followed?		
Was a visual observation of The underground system Performed this year?		
Are records of this inspection Available?		
Was the system maintained (i.e. - vacuumed, etc.) this year?		

**Comments:**

---

---

---

**Actions to be Taken:**

---

---

---

# Appendix B





CHEMUNG  
COUNTY  
STORMWATER  
COALITION

851 Chemung Street  
Horseheads, New York 14845  
Ph. 607.796.2216

**PROJECT:**

---

---

---

---

**BY**

Jessica Verrigni, CPESC, CPSWQ