



TOWN OF PEMBROKE  
DEPARTMENT OF PUBLIC WORKS  
100 CENTER STREET  
PEMBROKE, MASSACHUSETTS 02359  
781-709-1425 fax 781-293-2964 (781) 709-1426

**DPW Commissioners**

Kevin Crowley - Chairman  
Henry A. Daggett - V. Chair  
James Kilcommons - Clerk

**Divisions:** Cemetery Parks & Commons Highway Tree Water

MAY 4 2009

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May 1, 2009

Glenda Velez, CIP  
United States Environmental Protection Agency  
1 Congress Street, Suite 1100  
Boston, Massachusetts 02114-2023

Re: National Pollutant Discharge Elimination System (NPDES) General Permit for Storm  
Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)  
Annual Report for Town of Pembroke (Permit Year 6)  
**Permit Number: MAR041054/MA DEP Transmittal Number: W035403**

Ms. Velez:

Pursuant to the requirements of EPA's "National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems" issued May 1, 2003; the Town of Pembroke is pleased to submit the enclosed Annual Report for Permit Year 6.

If you have any questions regarding this report, please feel free to contact me.

Very truly yours,

*Eugene B. Fulmine, Jr.*

Eugene B. Fulmine Jr.  
Director

Enclosures

cc: Edwin J. Thorne, Town Administrator  
Leah E. Stanton, P.E., Weston & Sampson

**Municipality/Organization:** Pembroke, MA

**EPA NPDES Permit Number:** MAR041054

**MassDEP Transmittal Number:** W-035403

**Annual Report Number**

**& Reporting Period:** May 1, 2008 – April 30, 2009

## **NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2008)**

### **Part I. General Information**

**Contact Person:** Eugene B. Fulmine Jr.

**Title:** DPW Director

**Telephone #:** (781) 293-5620

**Email:** [gfulmine@townofpembrokemass.org](mailto:gfulmine@townofpembrokemass.org)

**Mailing Address:** 100 Center Street, Pembroke, MA 02359

#### Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Signature:** \_\_\_\_\_

**Printed Name:** Edwin J. Thorne

**Title:** Town Administrator

**Date:** \_\_\_\_\_

5/1/09

## **Part II. Self-Assessment**

**The town of Pembroke has completed the required self-assessment and has determined that our municipality meets all permit conditions.**

**Part III. Summary of Minimum Control Measures**

**1. Public Education and Outreach**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
1a Revised	Air stormwater messages on local cable channel	Department of Public Works	Air a message every two weeks	Stormwater messages were developed and have been aired on the local cable access channel in previous years along with the town's quarterly SWAC (Drainage Commission) meetings. During the sixth permit year, stormwater messages were aired for two weeks every quarter.
1b Revised	Distribute/post non-point source pollution posters	Department of Public Works	Post in all schools and town-owned buildings	The town checked and confirmed that non-point source pollution posters were still displayed in town buildings during the sixth permit year.
1c Revised	Include stormwater info in Consumer Confidence Report	Department of Public Works	Distribute Consumer Confidence Report yearly to all residents	The town included information on stormwater pollution prevention in its 2008 Consumer Confidence Report, which is distributed annually to residents. Several of the water bodies in town are drinking water sources for surrounding towns, and preventing pollution discharges from stormwater outfalls is necessary to keep these sources clean.
1d Revised	Develop children's coloring book on Pembroke recycling	Board of Health	Distribute coloring books outside of Board of Health office	The town has developed an informative coloring book to educate children on the importance of recycling, which was made available outside the Board of Health office during the sixth permit year.

**1a. Additions**


## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
2a Revised	Form Storm Water Advisory Committee	Department of Public Works	Hold quarterly meetings	The SWAC (Drainage Commission), which includes both town officials and local residents, met weekly throughout the sixth permit year.
2b Revised	Collect household hazardous waste from residents	Board of Health	Hold household hazardous waste collection day once per year The town is holding their Household Hazardous Waste Collection Day in August as opposed to the spring as previously indicated.	During the fifth permit year, on August 9 <sup>th</sup> , 2008, the town held their annual household hazardous waste collection day. It was announced in the local press, on cable and at BOH and Selectmen meetings. The town also continued its involvement in the South Shore Recycling Cooperative, which allows Pembroke residents to participate in the Hazardous Waste Days of surrounding towns.
2c Revised	Implement annual, volunteer waterways clean-up day	Department of Public Works	Hold waterways clean-up day once per year beginning in the Spring of 2005 (Permit Year 3)	During the sixth permit year, the town held its annual, volunteer waterways clean-up day on June 21, 2008.
2d Revised	Make SWMP available for public comment/review	Department of Public Works	Post SWMP in DPW office and Town library	Throughout the sixth permit year, copies of the town's Stormwater Management Plan were made available for public review and comment at the town library and at the DPW office.

## 2a. Additions


### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
3a Revised	Map outfalls and receiving waters	Department of Public Works	Complete mapping by end of fifth permit year	The town completed the mapping of all outfalls in urbanized areas during the fourth permit year, which was a year ahead of schedule. Although not required at this time, the town also completed the mapping of 2,534 catch basins and 901 storm drain manholes during the sixth permit year.
3b Revised	Develop illicit discharge detection & elimination plan	Department of Public Works	Make recommendations for proposed plan	During the fifth permit year, the town made a number of recommendations regarding items to be included in their illicit discharge detection and elimination plan. These items included methods for identifying priority areas and locating illicit discharges and their sources. It also included procedures for removal of illicit discharges. All actions were documented. During the sixth permit year, the town followed the Illicit Discharge Detection and Elimination plan that they developed during Permit Year 5.
3c Revised	Review existing bylaws and regulations	Department of Public Works/Stormwater Advisory Committee	Determine whether existing bylaws/regs are adequate	The town reviewed the existing bylaws and regulations for requirements relating to illicit discharge detection and elimination during the third permit year. No goals related to this item were planned for Permit Year 6.
3d Revised	Develop/modify general illicit discharge bylaw	Department of Public Works/Stormwater Advisory Committee	If necessary, propose recommendations for bylaw updates	A general illicit discharge bylaw that meets USEPA requirements was developed during the third permit year. After having their attorneys review the general illicit discharge bylaw that was developed, the town distributed the bylaw to local town boards and commissions for their review. Based on input from these departments, the bylaw was revised during Permit Year 5.
3e Revised	Present bylaw for Town meeting action	Department of Public Works/Stormwater Advisory Committee	Make presentations for Town meeting action, if necessary	The bylaw was presented for Town Meeting action during Permit Year 5 and was adopted. This bylaw was enforced by the town during Permit Year 6.

### 3a. Additions

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#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
4a Revised	Review existing bylaws and regulations	DPW/Planning/Zoning	Determine whether existing bylaws/regs are adequate	The town reviewed the relevant sections of the Rules and Regulations Governing the Subdivision of Land, the Zoning Bylaws, and the Water Resource Protection Bylaw during the third permit year. No goals related to this item were planned for Permit Year 6.
4b Revised	Develop/modify bylaws for construction site runoff	DPW/Planning/Zoning	If necessary, propose recommendations for bylaw updates	In the fourth year of the permit, the town completed the development of a bylaw for the control of construction site runoff. After having their attorneys review the bylaw that was developed, the town distributed the bylaw to local town boards and commissions for their review. Based on input from these departments, the bylaw was revised during Permit Year 5.
4c Revised	Present bylaw for Town meeting action	DPW/Planning/Zoning	Make presentations for Town meeting action, if necessary	The bylaw was presented for Town Meeting action during Permit Year 5 and was adopted. This bylaw was enforced by the town during Permit Year 6.
4d Revised	Review existing site inspection practices	DPW/Planning/Zoning	Determine whether existing practices are adequate	The town reviewed their erosion/ sedimentation control and drainage submittal requirements, as well as their site inspection practices, during the fourth permit year. No goals related to this item were planned for Permit Year 6.
4e Revised	Develop/modify site inspection practices	DPW/Planning/Zoning	If necessary, make recommendations for updating existing practices	During the fourth permit year, the town completed review of their construction site inspection practices. The town currently uses a consultant, Merrill Associates, who works for the Planning Board to oversee private developments. The DPW and the Conservation Commission also assist with internal site reviews. Any recommended changes to these site inspection practices were incorporated into the town's Construction Site Runoff Control Bylaw, which was adopted during the fifth permit year. Changes to the town's site inspection practices were enforced under this bylaw during Permit Year 6.

#### 4a. Additions


### 5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
5a Revised	Review existing bylaws and regulations	DPW/Planning/Zoning	Determine whether existing bylaws/regs are adequate	The town evaluated regulations regarding the control of post-construction stormwater runoff, including the Rules and Regulations Governing the Subdivision of Land and the Zoning Bylaws during the third permit year. No goals related to this item were planned for Permit Year 6.
5b Revised	Develop/modify bylaws for post-construction runoff	DPW/Planning/Zoning	If necessary, propose recommendations for bylaw updates	During the fourth permit year, the town developed a post-construction site runoff control bylaw that meets USEPA requirements and considers MA DEP Stormwater Management Policy Standard 3 (Recharge to Groundwater). After having their attorneys review the bylaw that was developed, the town distributed the bylaw to local town boards and commissions for their review. Based on input from these departments, the bylaw was revised during Permit Year 5.
5c Revised	Present bylaw for Town meeting action	DPW/Planning/Zoning	Make presentations for Town meeting action, if necessary	The bylaw was presented for Town Meeting action during Permit Year 5 and was adopted. This bylaw was enforced by the town during Permit Year 6.
5d Revised	Review existing site inspection practices	DPW/Planning/Zoning	Determine whether existing practices are adequate	During the fourth permit year, the town completed review of their existing site inspection and maintenance practices. No goals related to this item were planned for Permit Year 6.
5e Revised	Develop/modify site inspection practices	DPW/Planning/Zoning	If necessary, make recommendations for updating existing practices	During the fourth permit year, the town completed review of their post-construction site inspection and maintenance practices. Once construction is complete, the town takes ownership of new developments, and the DPW is responsible for the maintenance and operation of stormwater controls. Any recommended changes to these site inspection practices were incorporated into the town's Post Construction Site Runoff Control Bylaw during the fifth permit year. Changes to the town's site inspection practices were enforced under this bylaw during Permit Year 6.

### 5a. Additions

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## 6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
6a Revised	Sweep streets & clean catch basins	Department of Public Works	Sweep all town-owned streets and clean all catch basins once per year	During the sixth permit year, the Pembroke Highway Department swept all streets in town at least once. In total, approximately 11.5 miles of roadway were swept. The town cleans their catch basins on a continual basis. In the sixth permit year, 1,900 catch basins were cleaned.
6b Revised	Maintain filtration system at North & Indian Head Rivers	Department of Public Works	Inspect baffle tank and leaching basin, and remove sediment	During the sixth permit year, the town inspected the filtration system installed at the confluence of the North and Indian Head Rivers. At the time of inspection, it was not found to be in need of cleaning.
6c Revised	Train municipal employees at each facility	Department of Public Works	Target all applicable municipal facilities	During the third permit year, the town examined existing practices at municipal facilities, and trained employees at these facilities in construction methods to prevent soil erosion. In the sixth year of the permit, the town conducted continual follow-ups to ensure that employees working at these facilities are following the required stormwater management practices.
6d Revised	Implement items in EPA env. audit report for DPW facility	Department of Public Works	Ensure action items completed and BMPs followed	The town made changes during the first permit year to comply with this program that included prohibiting municipal vehicles from being washed outside and developing a SPCC plan. The town continued to comply with this program throughout the sixth permit year.
6e Revised	Retrofit catch basins around Furnace and Oldham Ponds	Department of Public Works	Install vortex separators and new piping	Those catch basins around Furnace Pond and Oldham Pond, which were retrofitted with vortex oil/water separators during the third permit year, were maintained and cleaned regularly throughout the sixth permit year.

### 6a. Additions


**7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)
Revised				

**7a. Additions**


**7b. WLA Assessment**

**Part IV. Summary of Information Collected and Analyzed**

No water quality sampling has been conducted for this permit.

**Part V. Program Outputs & Accomplishments (OPTIONAL)**

(Since beginning of permit coverage unless specified otherwise by a \*\*, which indicates response is for period covering May 1, 2008 through April 30, 2009)

**Programmatic**

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures **	(\$)	
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		

**Education, Involvement, and Training**

Estimated number of property owners reached by education program(s)	(# or %)	6,000
Stormwater management committee established	(y/n)	Yes
Stream teams established or supported	(# or y/n)	Yes
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	
▪ material collected **	(tons or gal)	
School curricula implemented	(y/n)	

**Legal/Regulatory**

Regulatory Mechanism Status (indicate with "X")	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X

**Mapping and Illicit Discharges**

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	150 - 200
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	100%
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	
Illicit discharges identified **	(#)	
Illicit discharges identified (Since beginning of permit coverage)	(#)	
Illicit connections removed **	(#); and (est. gpd)	
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	
% of population on sewer	(%)	0%
% of population on septic systems	(%)	100%

**Construction**

(Preferred Units) Response

Number of construction starts (>1-acre) **	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	
Site inspections completed **	(# or %)	
Tickets/Stop work orders issued **	(# or %)	
Fines collected **	(# and \$)	
Complaints/concerns received from public **	(#)	

**Post-Development Stormwater Management**

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	
Low-impact development (LID) practices permitted and encouraged	(y/n)	

**Operations and Maintenance**

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	1/yr
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	1/yr
Qty. of structures cleaned **	(#)	1900
Qty. of storm drain cleaned **	(%, LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	recycle

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**		(\$)
• Hourly or per basin contract rate **		(\$/hr or \$ per basin)
• Disposal cost**		(\$)
Cleaning Equipment		
• Clam shell truck(s) owned/leased		(#)
• Vacuum truck(s) owned/leased		(#)
• Vacuum trucks specified in contracts		(y/n)
• % Structures cleaned with clam shells **		(%)
• % Structures cleaned with vacor **		(%)

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1/yr
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	1/yr
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	recycle
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	
• % Roads swept with vacuum sweepers **	%	

Reduction (since beginning of permit coverage) in application on public land of:  
 ("N/A" = never used; "100%" = elimination)

▪ Fertilizers	(lbs. or %)	100%
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	38%     70%
Pre-wetting techniques utilized **	(y/n or %)	Y
Manual control spreaders used **	(y/n or %)	Y
Zero-velocity spreaders used **	(y/n or %)	Y
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	35%
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%
Storage shed(s) in design or under construction	(y/n or #)	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	

**Water Supply Protection**

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	