

5/4/11

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Municipality/Organization: Hanscom Air Force Base

EPA NPDES Permit Number: MAR042029

MaDEP Transmittal Number: W-041288

Annual Report Number & Reporting Period: No. 8: 1 May 10 – 30 April 11

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: DONALD C. MORRIS, PE Title: Environmental Director

Telephone #: 781-377-2475 Email: Donald.morris@hanscom.af.mil

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: THOMAS J. SCHLUCKEBIER, PE

Title: Base Civil Engineer, Government Organization

Date: 29 April 2011

Part II. Self-Assessment

Hanscom Air Force Base (AFB) has completed the required self-assessment and has determined that our base is in compliance with all permit conditions, except for the following provisions:

None.

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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3.1a Revised	Partnering w/Massport, Towns	66 ABG/CEV	1 partnering event per year	Telcons and meetings with Massport and meetings with Bedford Conservation Commission Agent.	Complete similar effort.
3.1b Revised	Partnering w/Base Organizations	66 ABG/CEV	1 partnering event per year	BMP meetings with Engineering Design Department every Thursday plus multiple undocumented meetings with all levels of Roads & Grounds Dept. including wetlands map and order of conditions meeting on 24 March 11. All projects under design by Air Force Civil Engineering are documented for stormwater review using AF Form 813.	Complete similar effort and continue to document formal meeting with managers, foremen.
3.1c Revised	Educational Materials, Base	66 ABG/CEV	Pamphlets, flyers, electronic messages	Shawsheen River cleanup flyer, poster boards and e-mail 4 April 11. Articles in Base newspaper on 8 & 22 April 11. Electronic message board on 7 April 11. Hanscom Middle School 7 th Grade Science Class river cleanup workshop 15 Apr 11.	Complete similar effort.
3.1d Revised	Educational Displays, Notices	66 ABG/CEV	1 display event per year	4-14 April 11 river cleanup displays in three high visibility buildings on base.	Complete similar effort.
3.1e	Pollution Prevention Events	66 ABG/CEV	1 P2 event per week	Hazardous Waste (office, commercial, industrial) and Materials Drop-off Day	Complete similar effort

Revised				are held each week, on Tuesday at 8-9 AM. Privatized housing contractor has sponsored separate collection events on Sundays. New collection booms installed in Shawsheen River. Shawsheen River cleanup (25 volunteers) 15 Apr 11.	
Revised					

1a. Additions

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3.2a Revised	Public Stakeholder Meeting	ABG/CEV	1 stakeholder meeting per year	The public was informed about storm water improvements at Hanscom AFB during the 28 September 10 Restoration Advisory Board public hearing at the Bedford Town Hall.	Complete similar effort.
3.2b Revised	Annual MS4 Public Notice	ABG/CEV	1 notice per year and document responses	The Hanscom AFB Restoration Advisory Board meeting which covers MS4 stormwater/groundwater, public notice advertisement was placed in the local and base newspapers on 23 & 24 September 10 and by e-mail on 10 June, 8 & 27 September 10.	Complete similar effort.
3.2c	Oil, Vehicle Fluid Disposal Info	ABG/CEV	Document distributed info & waste turn-ins	Info posted on base web site, housing info packets and at auto hobby shop.	Complete similar effort.

Revised							
Revised							
Revised							
Revised							

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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3.3a Revised	Update Storm Water & Sewer Maps on CAD	66 ABG/CE	Update as changes occur.	Weekly meetings with implementing contractor document updating as changes occur. New GIS (GEOBASE) includes stormwater infrastructure data.	Complete similar effort.
3.3b	Inspect Sewer By-pass Valve, Train Personnel	66 ABG/CE	Sewer valves operate, zero sewer discharge.	Training of implementing contractor is performed continuously. Sewer force	Complete similar effort.

Revised				main sampling ports not installed but flume grates opened for use by MWRA. Hanscom AFB Lower Lift Station project replaced pumps, controls, power supply and ancillary equipment.	
3.3c Revised	Inspect, Clean Oil/Water Separators	66ABG/CE	Document conditions, verify connections	All base oil/water separators were cleaned on 21-23 September 10 and 11 January 11, 21 March 11 and 8 April 11 and documented in a report.	Complete similar effort.
3.3d Revised	Inspect for Non-Storm Water Connections	66 ABG/CE	Document findings, eliminate connections	Inspections are performed continuously by maintenance personnel and no corrective action was identified.	Complete similar effort.
3.3e Revised	Sample, Analyze Storm Water	66 ABG/CEV	Sample 2 events per year	Visual inspections for pollutants were routinely performed. Stormwater sampling was performed 24/7 at the USGS Stream Gage in the Shawsheen River. Surface water samples from open swales were collected on 17 September 10 and analyzed. Additional funding was obtained to perform sampling upstream from the Gage.	Complete similar effort and use additional funds to perform sampling during dry and wet conditions.
Revised					

3a. Additions

4. Construction Site Storm water Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3.4a Revised	Stabilize Drainage, Exposed Soil	66 ABG/CEV	Approve construction P2 plans, inspect sites	Construction of new National Guard HQ building required hay bales and silt fence to comply with approved P2 plan. Over 30,000 CY of exposed soil piles were processed and recycled to off-base applications.	Complete similar effort.
3.4b Revised	Sediment Control	66 ABG/CEV	Inspect before, during and after	Silt sacks installed at downstream catch basins during ARRA contract work to install new deep sump catch basins, new curbing and paving during summer and fall 10. Inspected daily.	Complete similar effort.
3.4c Revised	Protect Wetlands, Buffer Zones	66 ABG/CEV	Approve staging, storage, access	No-cut zones expanded and frequency of grass cutting drastically reduced during 1 May – 1 October 2010.	Complete similar effort.
3.4d Revised	Sequence Construction Activity	66 ABG/CEV	Approve job sequence, minimize impact	ARRA paving projects phased over construction season to assure manageable controls and minimal negative impact.	Complete similar effort.
3.4e Revised	Implement Good Housekeeping	66 ABG/CEV	No-notice site inspections	No-notice inspections at National Guard, ARRA project sites, gas main excavations, soil pile screening project and Camp Patriot confirmed effective active controls.	Complete similar effort.
Revised					

4a. Additions

5. Post-Construction Storm Water Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3.5a Revised	Structural Controls	66 ABG/CE	Design to 5 year watershed action plan	In 2010 additional deep sump catch basins were installed at Barksdale Street, and 320 SF of pavement was replaced with two new crushed stone recharge areas to accept runoff from 1,100 SF of roof.	Complete similar effort.
3.5b Revised	Non-Structural Controls	66 ABG/CEV	Link Watershed goals to planning.	Planning process includes storm water element maximizing progress toward flow & recharge targets. Redevelopment design of B1718 was expanded to include non-mission essential improvements to roof runoff system by diverting flow from stormwater system to three new water quality swales eliminating 1-acre of directly connected impervious area.	Complete similar effort.
3.5c Revised	Natural Controls	66 ABG/CEV	Maintain vegetation buffers	Existing buffers were improved by expanding adjacent no-cut zones base wide and reducing grass cutting in many areas from 1 May – 1 October 10.	Complete similar effort.
Revised					

Revised							

5a. Additions

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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
3.6a Revised	Catch Basin Cleaning	66 ABG/CE	Sweep streets, clean catch basins	Regular street sweeping after winter sanding and in Spring. Catch basin cleaning accomplished Aug 10 (600 catch basins).	Sustain sweeping and catch basin cleaning.
3.6b Revised	Vehicle Wash Controls	66 ABG/CEV	Inspect wash facilities, discharges to sewer	Inspections performed, oil water separator cleaned twice.	Complete similar effort.
3.6c Revised	Organic Runoff Controls	66 ABG/CE	Inspect hydro-seeding, composting areas	Compost Management Plan revised through March 11. Base performed partial removal of six large piles of stored organic material during 2010 that will result in vegetated open space.	Complete similar effort.
3.6d Revised	Spill Response Procedure, Plan	66 ABG/CEV	Inspect, train, assure on-call spill response	Spill Response Plan update completed in January 11. Base-wide training exercise conducted July 10 to simulate response to hazmat release.	Complete similar effort.
3.6e	Conduct Environmental Audits	66 ABG/CEV	Annual audit & report	Environmental compliance audit was conducted by 12-person internal team	Complete similar effort. The next internal compliance audit is

Revised				for 5-days (14-18 June 10)	scheduled for 20-24 June 11. The next external compliance audit is scheduled for 6-10 June 11.
Revised					

6a. Additions

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)

Part I.B.2 (1) A TMDL has been established but not approved by the EPA. The TMDL Report MA83-08-2003-01, dated 9 June 2003, DWM Control Number CN: 168.00 is for Segment MA83-08 of the Shawsheen River. The Storm Water Pollutant TMDL identifies storm water pollutants (sediment as reflected in suspended solids, metals, excessive storm water flow rates and insufficient stream flow rates) as impairing aquatic life uses and impacting river habitat. Implementing BMPs addressing storm water detention and groundwater recharge over several years is required however measurable progress is being achieved.

During a 23 April 2007 meeting at Hanscom Field between the Air Force, Massport, DEP and EPA it was agreed that the Air Force and Massport will submit a formal request to the EPA to change the impaired segment on the Clean Water Act 303(d) list of impaired waters from Category 5 to Category 4b. Teleconferences with Massport and consultants were held on 7 May, 28 June, 6 and 24 August and 6 October 2010 and meetings with the same parties were held on 1 July and 8 November 2010 and 5 January 2011 to develop a comprehensive and coordinated Storm Water Management Plan. The Air Force and Massport in full coordination with MassDEP plan to formally submit the re-designation request to the EPA. This new direction in achieving water quality goals stresses management by schedule and a mutually agreeable enforcement mechanism which may include the MS4 Permit.

<< if applicable >> NOT APPLICABLE

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
Revised				NO APPROVED TMDL	
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

The Air Force continued to fund the operation of a stream gage by the U.S. Geological Survey (USGS). The cost for 2010 was \$24,330.00. The stream gage is located on the Shawsheen River between Hanscom Air Force Base and Hanscom Field. It continuously monitors and records flow and analytical water quality data. This information, especially the hydrograph will be used to assess the effectiveness of flow control structural BMPs installed over the past 8 years.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Hanscom AFB has programmed for \$85,000.00 to install additional structural BMPs in 2014 to address the need to reduce peak flows and increase groundwater recharge to improve base flows. This will be included in the Defense Department budget submittal to Congress for FY14.

In September 2010 the Base awarded a contract to a stormwater consultant, Fuss & O'Neill Inc. in the amount of \$98,458.00 to perform a stormwater model and develop a Stormwater Management Plan to comply with the Clean Water Act, Section 4b requirements as they relate to the impaired segment of the Shawsheen River at Hanscom Air Force Base and Hanscom Field.

The Hanscom AFB Lower Sewerage Lift Station was completely upgraded by replacing all pumps, controls, electrical power feed and ancillary equipment during the last half of 2010 and completed in early 2011 at a cost of \$1.2 million.

Hanscom AFB worked with MIT/LL to design non-mission essential improvements to roof runoff system by diverting flow from stormwater system to three new water quality swales eliminating 1-acre of directly connected impervious area at Building 1718.

Programmatic

Storm water management position created/staffed	(y/n)	Y
Annual program budget/expenditures	(\$)	~\$105.0 K
Total program expenditures since beginning of permit coverage	(\$)	~\$1,315.0 K
Funding mechanism		Congress

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	2,500
Storm water management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	Y, Shawsheen
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y, 0.5 mi.
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	52
▪ community participation	(%)	35%
▪ material collected	(tons or gal)	1.3 tons
School curricula implemented	(y/n)	N

Legal/Regulatory

In Place

Prior to Phase II Under Review Drafted Adopted

Regulatory Mechanism Status (indicate with "X")	Prior to Phase II	Under Review	Drafted	Adopted
▪ Illicit Discharge Detection & Elimination	X			
▪ Erosion & Sediment Control				X
▪ Post-Development Storm water Management				X
Accompanying Regulation Status (indicate with "X")				
▪ Illicit Discharge Detection & Elimination				X
▪ Erosion & Sediment Control				X
▪ Post-Development Storm water Management				X

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	12
System-Wide mapping complete	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	100
▪ CADD	(%)	100
▪ GIS	(%)	90
Outfalls inspected/screened	(# or %)	100
Illicit discharges identified	(#)	0
Illicit connections removed	(#)	0
	(est. gpd)	
% of population on sewer	(%)	100
% of population on septic systems	(%)	0

Construction

Number of construction starts (>1-acre)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100%
Site inspections completed	(# or %)	100%
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and \$)	0
Complaints/concerns received from public	(#)	0

Post-Development Storm Water Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction storm water control	(%)	100
Site inspections (for proper BMP installation & operation) completed	(# or %)	100
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	N
Low impact development (LID) practices permitted and encouraged	(y/n)	Y

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	1
Qty of structures cleaned	(#)	600
Qty of storm drain cleaned	(LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	14 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		recycle
Basin Cleaning Costs		
Annual budget/expenditure (labor & equipment)	(\$)	8.0 K
Disposal cost	(\$)	0

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	26
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	26

Qty. of sand/debris collected by sweeping	(lbs. or tons)	30 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Compost
Cost of sweepings disposal	(\$)	0
Vacuum street sweepers purchased/leased	(#)	1
Vacuum street sweepers specified in contracts	(y/n)	Y

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	0%
▪ Herbicides	(lbs. or %)	0%
▪ Pesticides	(lbs. or %)	0%

Anti-/De-Icing products and ratios	% NaCl	25%
	% CaCl ₂	0
	% MgCl ₂	0
	% CMA	0
	% Kac	0
	% KCl	0
	% Sand	75%
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y
Automatic or Zero-velocity spreaders used	(y/n)	N
Estimated net reduction in typical year salt application	(lbs. or %)	-2%
Salt pile(s) covered in storage shed(s)	(y/n)	Y, 100%
Estimated net reduction or increase in typical year sand application rate	(+/-lbs/ln mi or %)	-2%
Storage shed(s) in design or under construction	(y/n)	N