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City of Newton

David B. Cohen
Mayor

Department of Public Works, Utilities Division

LOUIS M. TAVERNA, P. E., DIRECTOR OF UTILITIES
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April 30, 2004

U.S. Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02114

Subject: CITY OF NEWTON, MA
NPDES Phase II Small MS4 General Permit Annual Report, May 2004
EPA NPDES Permit No: MAR 041080
MaDEP Transmittal No: W-039247

Enclosed please find the NPDES Phase II Small MS4 General Permit Annual Report, May 2004, for the City of Newton, MA. The City has implemented and enforced a storm water management program designed to reduce discharge of pollutants from the municipal separate storm sewer system to the "maximum extent practicable" to protect water quality.

The City's storm water management plan consists of the six minimum control measures. Each control measure has associated Best Management Practices (BMPs) and measurable goals that have been implemented during the course of the permit term. It is through the implementation and evaluation of these BMPs that the City will insure that all the objectives of the Phase II NPDES program will be met.

Sincerely,

Louis M. Taverna

Louis M. Taverna. P.E.
Director of Utilities

Attachments:

NPDES Phase II Small MS4 General Permit Annual Report, May 2004

Annual Report MS4 2004 epa letter

Municipality/Organization: City of Newton, MA

EPA NPDES Permit Number: MAR 041080

MAY 3

2005 JUN -4 A 12: 17

MaDEP Transmittal Number: W-039247

Annual Report Number & Reporting Period: No. 1: March 03-March 04

NPDES Phase II Small MS4 General Permit Annual Report May 2004

Part I. General Information

Contact Person: Louis M. Taverna, P.E Title: Director of Utilities

Telephone #: 617-796-1640 Email: ltaverna@ci.newton.ma.us

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: David B. Cohen

Printed Name: David B. Cohen

Title: Mayor

Date: 4/29/04

Part II. Self-Assessment

The City of Newton, Massachusetts has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.

Water quality monitoring of the Charles River is performed by Charles River Watershed Association. A summary of water quality test results is attached.

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 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
1.1	Develop Stormwater Press Release	Utilities, L. Taverna	Submit annual press release to newspaper, CATV.	Draft press release prepared. To be submitted to newspaper and CATV May 2004.	Submit annual press release to newspaper, CATV.
Revised					
1.2	Develop Stormwater Web Site	Utilities, L. Taverna	Prepare web site on stromwater issues.	City's Public Works web site developed, with a link to DEP stormwater web site. Will add press release to web site.	Annual update of web site on stormwater issues. Include e-mail address for comments and responses from public.
Revised					
1.3	Develop Stormwater Brochures	Utilities, L. Taverna	Distribute annual brochures with water/sewer bills	Brochures developed including "Scoop the Poop" and "Stormwater/ Wastewater, Put it Where It Belongs"	Distribute annual brochures with water/sewer bills
Revised					
1.4	Develop Stormwater Newsletter/Report	Utilities, L. Taverna	Prepare/distribute annual newsletter/ report.	Draft newsletter prepared. To be distributed to Stormwater Committee in May 2004. To be added to web site.	Distribute annual newsletter/ report.
Revised					
1.5	Explore Volunteer Task Force	Utilities, L. Taverna	Solicit volunteer educators to develop education program.	No action to date.	Solicit volunteer educators to develop education program, in spring, summer 2004.
Revised					
1.6	Explore Partnering with Schools	Utilities, L. Taverna	Explore education programs.	No action to date.	Explore education programs, upcoming spring, summer 2004.
Revised					

1.7	Explore Education Program	Utilities, L. Taverna	Explore programs with high school students.	No action to date.	Explore programs with high school students, upcoming spring, summer 2004.

1.8	Explore Partnering with Watershed Associations	Utilities, L. Taverna	Promote meetings with Charles River Watershed Association (CRWA).	Attended CRWA Annual Meeting on Nov. 19, 2003. Attended Clean Charles 2005 Annual Meeting on March 23, 2004.	Continue meetings with Charles River Watershed Association. Coordinate Clean Charles 2005 activities.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
2.1	Establish Stormwater Citizen Advisory Committee	Utilities, L. Taverna	Committee to meet once per year, publish results	Stormwater/wastewater citizen advisory committee has been established. Volunteers are being solicited. Committee to meet in May 2004.	Committee to meet once per year, and results to be published. Discussions to include stormwater issues, sewer Infiltration/Inflow issues, and impact of I/I removal on storm drain system.
Revised					
2.2	Implement Public Meetings for Citizen Input	Utilities, L. Taverna	Hold meetings once per year, publish results.	Public meeting on stormwater held November 2002. Public works presentation made. Citizens provided input on local stromwater issues, street flooding.	Upcoming public meeting to be held summer 2004.
Revised					
2.3	Encourage Citizen Communication and Reporting	Utilities, L. Taverna	Establish stormwater hotline for illicit discharges.	Customer service center and phone number established at City Hall. All stormwater questions and comments directed to Engineering or Utilities. Customer service calls logged on Hansen database.	Establish dedicated phone number for stormwater hotline. Establish dedicated e-mail address for stormwater.
Revised					
2.4	Explore Volunteer Organizations, Watch Groups	Utilities, L. Taverna	Observe outfalls, find illicit discharges, stream clean-up.	Friends of Hemlock Gorge clean up bank of Charles River at Hemlock Gorge on April 25, 2004, as part of Newton Serves Day. Boy Scout and Girl Scout volunteers performed storm drain marking.	Continue annual Newton Serves Day. Explore possibility of expanding group to cover more stream banks.
Revised					
2.5	Implement Storm Drain Marking Program	Utilities, L. Taverna	Volunteers mark catch basins with decals.	Boy Scout and Girl Scout volunteers marked approximately 5000 catch basins with "No Dumping, Drains to River" decals.	Continue with decals, and storm drain stenciling. Expand volunteers to include High School students.
Revised					
2.6	Promote Community Clean-Up day	Utilities, L. Taverna	Promote annual community clean-up day	Newton Serves Day held April 25, 2004. Volunteer groups target specific areas of the City for clean-up.	Continue with annual community clean-up day.
Revised					

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
3.1	Establish Stormwater System Map	Engineering, J. Daghlian	Update GIS information, locate all outfalls.	Stormwater system map established on Geographic Information System (GIS). Outfalls located on GIS. Outfalls last field verified in 1997.	Locate all outfalls in field, to verify GIS, upcoming spring, summer 2004.
Revised					
3.2	Establish Stormwater Database Management System	Utilities, L. Taverna	Add stormwater information to Hansen database.	Hansen database management system established. Stormwater system attributes now being input into database.	Continue input of stormwater system attributes into database.
Revised					
3.3	Locate and Inspect all Outfalls	Utilities, L. Taverna	Collect outfall data for Hansen database.	Outfalls located on GIS. No action to date on field inspection. Outfalls last inspected June 1997.	Outfall inspections and data collection scheduled for summer 2004.
Revised					
3.4	Explore Prohibiting Non-Stormwater Discharges	Utilities, L. Taverna	Explore adaptation of stormwater ordinance/regulations	No action to date.	To be discussed at upcoming Stormwater Advisory Committee.
Revised					
3.5	Identify Illicit Discharge Sources	Utilities, L. Taverna	Explore dry and wet weather screening, CCTV inspections, public input.	Dry weather screening completed for basin 69. Report upcoming. CCTV truck purchased, CCTV inspections are ongoing. Smoke and dye testing completed for sewer areas A and C.	Continue with CCTV inspections for stormwater system. Continue sewer infiltration/inflow removal program. Solicit public input on illicit discharges.
Revised					
3.6	Establish Illicit Discharge Hotline	Utilities, L. Taverna	Receive and track citizen reports of illicit discharges.	Customer service center and phone number established at City Hall. All stormwater questions and comments directed to Engineering or Utilities. Customer service calls logged on Hansen database.	Establish dedicated phone number for stormwater/illicit discharge hotline. Establish dedicated e-mail address for stormwater/illicit discharge. Establish Hansen database of citizen reports.
Revised					

3.7	Train Employes	Utilities, L. Taverna	Employees to help identify illicit discharges.	No action to date.	Employee training upcoming spring, summer 2004.

3.8	Implement Household Hazardous Waste Program	Utilities, L. Taverna	Collect waste oil, antifreeze, paint, pesticides.	Household Hazardous Waste (HHW) program is implemented. 6 HHW collection days held in 2003.	City plans to implement a HHW collection facility, continuous from May through October.

3.9	Explore Detection and Elimination Efforts	Utilities, L. Taverna	Observe major outfall discharges.	No action to date.	Outfall inspections and data collection scheduled for summer 2004.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
4.1	Explore Regulations for Construction Site Stormwater Runoff	Engineering, J. Daghlian	Explore adaptation of construction site runoff ordinance/regulation.	No action to date.	To be discussed at upcoming Stormwater Advisory Committee.
Revised					
4.2	Implement Review of Construction Documents	Engineering, J. Daghlian	Explore policy for submittal of erosion control plans.	All construction documents now reviewed by Engineering for stormwater BMPs. Engineering now requires erosion control plans for all construction projects.	Continue to review all construction documents for stormwater BMPs, erosion control plans.
Revised					
4.3	Implement Construction Inspection Program	Engineering, J. Daghlian	Develop guidelines, training, inspection of construction sites > 1 acre.	All construction sites > 1 acre inspected by Engineering. BMP guidelines followed. Engineering requires the use of stormwater BMPs for all construction > 1 acre.	Continue with inspection of all construction sites > 1 acre. Develop training for construction inspectors.
Revised					
4.4	Educate Developers on Proper Erosion Control Techniques	Engineering, J. Daghlian	Distribute erosion control procedures to all applicants.	Engineering requires erosion control BMPs for all construction > 1 acre. BMPs given to all applicants > 1 acre.	Continue to distribute erosion control BMPs to all applicants.
Revised					
4.5	Encourage Citizen Input on Construction Projects	Engineering, J. Daghlian	Ensure citizen review procedures for construction projects > 1 acre.	Citizen review of construction projects occurs during Conservation Commission hearings if required. Citizen review also occurs during draft and final environmental impact reports if required.	Explore citizen review procedures, to be discussed at upcoming Stormwater Advisory Committee.
Revised					
4.6	Establish Information Management System	Engineering, J. Daghlian	Track construction reviews and construction inspections.	No action to date.	Explore implementation of construction inspection information management system, on Hansen database.
Revised					

4.7	Explore Standards for Erosion and Sedimentation Controls	Engineering, J. Daghlian	Explore adaptation of MADEP SWMP Standard 8	Engineering requires implementation of MADEP SWMP Standard 8 for all construction projects > 1 acre.	Continue to require implementation of MADEP SWMP Standard 8 for all construction projects > 1 acre.

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 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
5.1	Explore Regulations for Post Construction Runoff	Engineering, J. Daghlian	Explore adaptation of post construction runoff ordinance/ regulation .	No action to date.	To be discussed at upcoming Stormwater Advisory Committee.
Revised					
5.2	Develop Stormwater Management Policy	Engineering, J. Daghlian	Explore policy to establish minimum BMPs for developers.	Engineering requires the use of stormwater BMPs for all construction > 1 acre.	Continue to require requires the use of stormwater BMPs for all construction > 1 acre.
Revised					
5.3	Develop Operations and Maintenance Policy	Engineering, J. Daghlian	Explore policy to establish minimum operations and maintenance plans.	Engineering requires the submittal of stormwater operations and maintenance plans for all construction > 1 acre.	Continue to require the submittal of stormwater operations and maintenance plans for all construction > 1 acre.
Revised					
5.4	Explore Controls to Minimize Impacts to Water Quality	Engineering, J. Daghlian	Explore use of structural and non-structural BMPs.	Engineering requires the use of stormwater BMPs for all construction > 1 acre.	Continue to require requires the use of stormwater BMPs for all construction > 1 acre.
Revised					
5.5	Explore Reducing Directly Connected Impervious Surfaces	Engineering, J. Daghlian	Explore the use of grass swales and filter strips.	No action to date.	To be discussed at upcoming Stormwater Advisory Committee.
Revised					
5.6	Determine Capacity of Stormwater System Elements	Engineering, J. Daghlian	Perform capacity analysis for wet weather events.	No action to date. Saw Mill Brook drainage system submitted to DEM and Army Corps for consideration of project study.	Perform capacity analysis for wet weather events, at certain "hot spots" where flooding is known to occur. Upcoming evaluation of Deborah Rd - Sevland Rd drainage system.
Revised					

5.7	Explore use of Regulations for Recharge to Groundwater	Engineering, J. Daghlian	Explore adaptation of ordinance/regulation for recharge to groundwater	No action to date.	To be discussed at upcoming Stormwater Advisory Committee.
5.8	Explore Use of Groundwater Recharge Rates	Engineering, J. Daghlian	Explore adaptation of MADEP SWMP Standard 3	Engineering requires implementation of MADEP SWMP Standard 3 for all construction projects > 1 acre.	Continue to require implementation of MADEP SWMP Standard 3 for all construction projects > 1 acre.
5.9	Explore Post Development Peak Discharge Rates	Engineering, J. Daghlian	Explore adaptation of MADEP SWMP Standard 2	Engineering requires implementation of MADEP SWMP Standard 2 for all construction projects > 1 acre.	Continue to require implementation of MADEP SWMP Standard 2 for all construction projects > 1 acre.
5.10	Explore Requirements for Removal of 80% TSS	Engineering, J. Daghlian	Explore adaptation of MADEP SWMP Standard 4 & 7	Engineering requires implementation of MADEP SWMP Standard 4 & 7 for all construction projects > 1 acre.	Continue to require implementation of MADEP SWMP Standard 4 & 7 for all construction projects > 1 acre.

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 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
6.1	Develop Staff Training Program	Utilities, L. Taverna	Train staff on spill prevention control, vehicle maintenance, lawn care.	Fire Department has staff trained in spill prevention control and response Vehicle maintenance staff trained in handling waste fluids. Parks and Recreation staff trained in lawn care.	Train Public Works staff on spill prevention and control.
Revised					
6.2	Develop Stormwater Pollution PreventionPlan	Utilities, L. Taverna	Develop spill prevention control procedures, pollution reduction plan.	Fire Department has a stormwater pollution prevention plan and a hazardous material spill response plan.	Environmental Affairs to develop pollution reduction plan.
Revised					
6.3	Develop Flood Mitigation Plan	Utilities, L. Taverna	Develop plan, perform tabletop exercises.	Stormwater Management Program has been developed. Flood Mitigation Plan has been developed. Plan used during flooding event of March 31-April 1, 2004.	Continue field exercises and update the stormwater and flood mitigation plan. Conduct tabletop exercise if necessary.
Revised					
6.4	Establish Inspection Procedures	Utilities, L. Taverna	Inspect storm drain system using visual inspection and CCTV.	CCTV truck purchased. Inspected and cleaned 10,000 linear feet of storm drain system.	Continue to inspect and clean 10,000 linear feet of storm drain system per year.
Revised					
6.5	Incorporate BMPs into Standard Procedures	Utilities, L. Taverna	Establish BMPs for municipal operations and maintenance.	Erosion control procedures used for municipal construction.	Establish BMPs for municipal operations and maintenance, upcoming winter 2005.
Revised					
6.6	Establish Maintenance Procedures	Utilities, L. Taverna	Vactor/flush storm drains to remove sedimentation	Vactor/flush 10,000 linear feet of storm drains to remove sedimentation.	Continue vactor/flush 10,000 linear feet of storm drains to remove sedimentation.
Revised					

6.7	Establish Maintenance Procedures	Utilities, L. Taverna	Clean drainage brooks to remove sedimentation.	Cleaned 5,000 linear feet of drainage brooks.	Continue to clean 5,000 linear feet of drainage brooks.

6.8	Establish Maintenance Procedures	Utilities, L. Taverna	Clean catch basins every 2 years.	6000 catch basins cleaned in 2003.	6500 catch basins to be cleaned in 2004.

6.9	Establish Maintenance Procedures	Utilities, L. Taverna	Sweep streets 2 times per year.	Streets were swept 5 times in 2003.	Continue to sweep streets at least 2 times per year.

6.10	Establish Maintenance Procedures	Utilities, L. Taverna	Calibrate salt spreaders annually.	Salt spreaders calibrated fall 2002.	Calibrate salt spreaders fall 2004.

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 1 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 2
7.1	Check Criteria for Meeting TMDL	Utilities, L. Taverna	EPA criteria for TMDLs checked.	No action to date.	No action planned.
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions –N/A

7b. WLA Assessment – N/A

Part IV. Summary of Information Collected and Analyzed

Charles River Watershed Association monitors the water quality of the Charles River, and reports water quality results on a monthly basis. Data is available at www.crwa.org. Data summary for calendar year 2003 is attached, and includes Fecal Coliform Bacteria (#/100 mL) and Escherichia Coli (E. Coli) Bacteria (#/100 mL), for sampling sites along the Charles River.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures (catch basin cleaning + material)	($)	$100,000

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	unknown
Stormwater management committee established	(y/n)	Y
Stream teams established or supported	(# or y/n)	N
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y, 1 mile
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	6
▪ community participation	(%)	5%
▪ material collected	(tons ~~or gal~~)	875
School curricula implemented	(y/n)	N

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	Adopted
Regulatory Mechanism Status (indicate with "X")				
▪ 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

Outfall mapping complete (last completed in 1997, to be verified summer 2004)	(%)	0
Estimated or actual number of outfalls (Charles River)	(#)	86
System-Wide mapping complete	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	0
▪ CADD	(%)	0
▪ GIS	(%)	100%
Outfalls inspected/screened (summer 2004)	(# or %)	0
Illicit discharges identified	(#)	0
Illicit connections removed	(#) (est. gpd)	0
% of population on sewer	(%)	98.5%
% of population on septic systems	(%)	1.5%

Construction

Number of construction starts (>1-acre)	(#)	5
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	(#)	30

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100%
Site inspections completed	(# or %)	100%
Estimated volume of stormwater recharged	(gpy)	unknown

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	once per two years
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	once per two years
Total number of structures cleaned	(#)	6,000
Storm drain cleaned	(LF or mi.)	10,000 lf
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	1,900 cy
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		offsite
Cost of screenings disposal (catch basin cleaning, included in cost)	($)	$71,000

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	5
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	5
Qty. of sand/debris collected by sweeping	(lbs. or tons)	unknown
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	offsite
Cost of sweepings disposal	($)	0
Vacuum street sweepers purchased/leased	(#)	6
Vacuum street sweepers specified in contracts	(y/n)	0

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

Anti-/De-Icing products and ratios	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	97% 1% 0 0 0 0 2%
Pre-wetting techniques utilized	(y/n)	N
Manual control spreaders used	(y/n)	N
Automatic or Zero-velocity spreaders used	(y/n)	Y
Estimated net reduction in typical year salt application	(lbs. or %)	unknown
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N

2003 Fertilizer and Pesticide Amounts
Department of Parks and Recreation
City of Newton

There have been 6 fertilizer applications made in the 2004 FY. The fertilizer analysis, application rate, bags/acre, tonage, acreage, and dates are as follows:

FERTILIZER	APPLICATION RATE	BAGS/ACRE	TONS	ACRES	DATE
1. 10-2-8	1 lbs. Nitrogen/1000 sq. ft.	10	21.25 tons	85	June 2003
2. 10-2-8	.75 lbs. Nitrogen/1000 sq. ft.	7.5	15.9375 tons	85	August 2003
3. 8-5-5	1 lbs. Nitrogen/1000 sq. ft.	12.5	26.5625 tons	85	November 2003
4. 0-0-50	1.15 lbs. Potassium/1000 sq. ft.	2	4.25 tons	85	November 2003
5. Pelletized lime	1000 lbs./acre	20	4.5 tons	9	November 2003
6. 15-2-8	1 lbs. Nitrogen/1000 sq. ft.	6.67	14.5 tons	87	April 2004

Each fertilizer is all natural and organic. All bags are 50 pounds.

One pesticide application occurred at two locations: Newton South High School Football Field (1 acre) and the Russ Halloran Sports Complex (4 acres).

HERBICIDE	APPLICATION RATE	AMOUNT USED	ACRES	DATE
1. Drive 75DF Herbicide	1 lb./acre	5 lbs.	5	7/31/03
2. Power Zone Broadleaf Herbicide	80 fluid ounces/acre	400 fluid ounces	5	7/31/03

This pesticide application occurred with the approval of the City of Newton Integrated Pest Management Commission and was in non regulated area for the Conservation Commission.

Charles River Monthly Water Quality Sampling Data 2003 and 2004

Fecal Coliform Bacteria (#/100 mL)

For years 1995-2001 in a Microsoft Excel Spreadsheet click here.

Site #	Description	Town	River mile	1/21/03*	02/11/03*	3/18/03	4/15/03	5/20/03	6/10/03	7/15/03	8/19/03*	9/16/03*	10/21/03*	11/
35CS	Central Street Bridge	Milford	3.5			<10	20	200	110	1100				
35CD	Discharge Pipe @ Central St	Milford	3.5			1800	1800	290	540	2000				2
35C2	2nd Discharge Pipe @ Central St	Milford	3.5					<10						2
59CS	Mellen St. Bridge	Bellingham	5.9			225 (a)	70		120	170				3
90CS	Rt. 126, N. Main St.	Bellingham	9.0			10 (a)	10	20	220	280				
13CS	Maple St. Bridge	Bellingham	12.9			10	8 (a)	20	50	30				
165S	Shaw St. Bridge	Franklin	16.5											
199S	Populatic Pond Boat Launch	Norfolk	19.9					20	90					
229S	Rt. 115, Baltimore St.	Norfolk/Millis	22.9			60	40	60	130 (a)	80				
267S	Dwight St. Bridge	Millis	26.7											
269T	Causeway St. Stop River	Medfield	26.9											
290S	Old Bridge St.	Medfield	29.0			10	<10	50	70	20				
318S	Rt. 27 Bridge	Medfield	31.8			50	<10	<10	50	50				
343S	Farm Rd./Bridge St.	Sherborn/Dover	34.3											

387S	Cheney Bridge	Wellesley	38.7	10	30	85 (a)	40	120	
400S	Charles River Road Bridge	Dover	40.0						
447S	Dover Gage	Dover	44.7			10	80	55 (a)	
484S	Dedham Medical Center	Dedham	48.4	40	10	40	50	40	
521S	Ames St. Bridge	Dedham	52.1						
534S	Rt. 109 Bridge	Dedham	53.4	<10	30	30	50	100	
567S	Nahanton Park	Newton	56.7			20			
591S	Rt. 9 Gaging Station	Newton	59.1						
609S	Washington St. Hunnewell Bridge	Wellesley	60.9	50	20	130	100		
621S	Leo J. Martin Golf Course/Park Rd.	Weston	62.1						
635S	2391 Commonwealth Ave.	Newton	63.5		<10	60	170	270	3(
648S	Lakes Region	Waltham	64.8						
662S	Moody St. Bridge	Waltham	66.2	<10	10	20	100	280	
675S	North St.	Waltham	67.6						
012S	Watertown Dam Footbridge	Watertown	69.3	70	10	260	210	840	
700S	N. Beacon St.	Newton	70.9						
715S	Arsenal St.	Brighton	71.5	130	90		280	670	3
729S	Eliot Bridge	Cambridge	72.9						
743S	Western Ave	Cambridge	74.3	160	50	30	360	250	

760S	Muddy River at Comm. Ave.	Boston	76.0	1300	1000	130	190	180	2
763S	Mass. Ave. at Harvard Bridge	Boston	76.3	200	100	30	260	140	3
773S	Longfellow Bridge	Boston	77.3						
784S	New Charles River Dam	Boston	78.4	160	200	10	160	100	2
QA/QC Samples									
	Equipment Blank			<1	<1	<1	<1	<1	
	Site No.			229S	715S	567S	763S	387S	9(
	Equipment Blank			<1					
	Site No.			743S					
Rainfall At Logan International Airport (inches)									
	3 Days Prior to Sampling			0	0.45	0	0	trace	0
	2 Days Prior to Sampling			0	0	0	0	0	
	1 Day Prior to Sampling			0	0	0	0	0	
	Day of Sampling			0	0	0	0	0	

* January and February sampling was cancelled due to harsh, frozen temperatures, frozen river, and inaccessible sampling sites. August, September, and October samples were cancelled due to laboratory shutdown.

(a) Average of duplicates

(b) No sampling was conducted during these months because the river was frozen.

Charles River Monthly Water Quality Sampling Data 2003

Escherichia Coli (E. coli) Bacteria (#/100 mL)

Site #	Description	Town	River mile	1/21/03*	2/11/03*	3/18/03	4/15/03	5/20/03	6/10/03	7/15/03	8/19/03	9/16/03	10/21/03	11/18/03	12/16
35CS	Central Street Bridge	Milford	3.5			10	40	180	30	1200		13900	690	160	70
35CD	Discharge Pipe @ Central St	Milford	3.5			1300	2400	220	360	1400		1280	580	2000	2700
35C2	2nd Discharge Pipe @ Central St	Milford	3.5					<10	230				630	1670	
59CS	Mellen St. Bridge	Bellingham	5.9			355 (a)	130		50	120	2180		310	1790	270
90CS	Rt. 126, N. Main St.	Bellingham	9.0			12 (a)	10	30	120	200	190	12000	30	60	480
13CS	Maple St. Bridge	Bellingham	12.9			10	<10 (a)	<10	40	60	20	1440	10	10	100
165S	Shaw St. Bridge	Franklin	16.5				20	90		470	1440	6280	10	50	90
199S	Populatic Pond Boat Launch	Norfolk	19.9					10	90		180	240			
229S	Rt. 115, Baltimore St.	Norfolk/Millis	22.9			40	10	50	145 (a)	30	220		100	10	
267S	Dwight St. Bridge	Millis	26.7					30	130	60		375 (a)	20	30	
269T	Causeway St. Stop River	Medfield	26.9			<10	<10	40	20	40	40	1020			
290S	Old Bridge St.	Medfield	29.0			<10	10	20	10	10	50	60	15 (a)	30	220
318S	Rt. 27 Bridge	Medfield	31.8			10	<10	20	40	30	55 (a)	90		20	
343S	Farm Rd./Bridge St.	Sherborn/Dover	34.3			20	<10	20	20			110			240
387S	Cheney Bridge	Wellesley	38.7			40	<10	130 (a)	50	50	40	250	20		

400S	Charles River Road Bridge	Dover	40.0	40	8 (a)	40	60	210	110	160		20	
447S	Dover Gage	Dover	44.7			<10	70	40 (a)	30	260	20	30	
484S	Dedham Medical Center	Dedham	48.4	10	10	70	10	50	140	280	30	10	230
521S	Ames St. Bridge	Dedham	52.1	<10	20	35 (a)	30	50	380	20	10	<10	130
534S	Rt. 109 Bridge	Dedham	53.4	20	10	30	30 (a)	30	50	30		<10	250
567S	Nahanton Park	Newton	56.7	20	20	<10	50	15 (a)	50	10	10		370
591S	Rt. 9 Gaging Station	Newton	59.1			10	80	210	40 (a)	290	<10	40	
609S	Washington St. Hunnewell Bridge	Wellesley	60.9		50	120	90	150	110	1180	20	40	
621S	Leo J. Martin Golf Course/Park Rd.	Weston	62.1	10	30	60		150	130	360	<10 (a)	60	320
635S	2391 Commonwealth Ave.	Newton	63.5		20	60	170	180	940		<10	50	
648S	Lakes Region	Waltham	64.8			<10	50	80			<10	80	
662S	Moody St. Bridge	Waltham	66.2	<10	30	50	50	240	50	80	30	60	270 (a)
675S	North St.	Waltham	67.6	20	30	40	110	250	220	1480	110	50	360
012S	Watertown Dam Footbridge	Watertown	69.3	40	20	300	210	250	280	1240	60	120	400
700S	N. Beacon St.	Newton	70.9	80	40	180		380	790	310	330	230	
715S	Arsenal St.	Brighton	71.5	20	80		350	530	3170		220	1860	
729S	Eliot Bridge	Cambridge	72.9	130	20	50	240	190	220	90	250		510
743S	Western Ave	Cambridge	74.3	100	40	20	210	130	100	60	70	280	650

760S	Muddy River at Comm. Ave.	Boston	76.0	1300	1140	110	150	100	200	5200	340	100	350
763S	Mass. Ave. at Harvard Bridge	Boston	76.3	140	160	10	180	30	70	30	400	250	
773S	Longfellow Bridge	Boston	77.3	70	120	170	120	50	<10	10	350	150	970
784S	New Charles River Dam	Boston	78.4	110	140	10	60	60	<10	30	20	120	
QA/QC Samples													
	Equipment Blank			<1	<1	<1	<1	<1	<1	3	<1	<1	<10
	Site No.			229S	269T	567S	343S	387S	784S	447S	59CS	90CS	130C
	Equipment Blank			<1	<1	<1	<1	<1		30	<1	<1	<10
	Site No.			743S	715S	700S	763S	773S		35CS	484S		534S
Rainfall At Logan International Airport (inches)													
	3 Days Prior to Sampling			0	0.45	0	0	trace	trace	0.53	0.05	0.03	0
	2 Days Prior to Sampling			0	0	0	0	0	0.03	0	trace	0	0.66
	1 Day Prior to Sampling			0	0	0	0	0	trace	0	0	0	0.83
	Day of Sampling			0	0	0	0	0	0	0.2	0.02	0	0

Samples are analyzed at MWRA Central Laboratory.

* Sampling was cancelled due to harsh, freezing temperatures, frozen river and inaccessible sampling sites.

(a) Average of duplicates