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December 23, 2014

Stormwater Permit Coordinator
Water Permitting and Enforcement
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06103

RE: 2014 Annual Report
Town of Windsor
GSM #000066

Dear Permit Coordinator:

Enclosed is a copy of the Town of Windsor's 2014 Annual Report prepared in accordance with the General Permit for the Discharge of Stormwater from Small Municipal Separate Stormwater Sewer Systems (MS4 General Permit).

The fee for the annual report review has been forwarded under separate cover.

Sincerely,

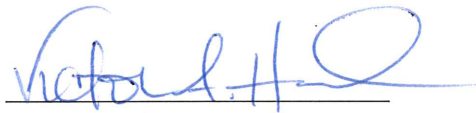
Victoria A. Houle, P.E.
Project Engineer

c: Peter Souza

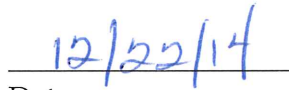
CERTIFICATIONS

Preparer:

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.



Victoria A. Houle, P.E.




Date

Principal Executive Officer:

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.



Peter Souza, Town Manager



Date

TOWN OF WINDSOR
STORMWATER MANAGEMENT PLAN



2014 Annual Report

December 23, 2014

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 EXECUTIVE SUMMARY	1
2.0 PUBLIC EDUCATION AND OUTREACH.....	1
2.1 Catch Basin Markers.....	1
2.2 Educational Materials Distributed.....	1
2.3 Citizen Groups	2
2.4 School and Other Educational Programs.....	2
2.5 Activities Scheduled for Next Year.....	3
3.0 PUBLIC PARTICIPATION.....	3
3.1 Community Clean-Ups.....	3
3.2 School Programs	4
3.3 Stormwater Management Committee.....	4
3.4 Public Information.....	4
3.5 Activities Planned for Next Year.....	5
4.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION	5
4.1 Outfall Mapping.....	5
4.2 Illicit Discharge Detection Ordinance.....	5
4.3 Activities Planned for Next Year.....	6
5.0 CONSTRUCTION SITE RUNOFF CONTROL.....	6
5.1 Erosion and Sediment Control Ordinance	6
5.2 Development Reviews	7
5.3 Activities Planned for Next Year.....	7
6.0 POST-CONSTRUCTION STORMWATER MANAGEMENT.....	7
6.1 Stormwater Management Ordinance	7
6.2 Development Reviews	9
6.3 Best Management Practices	9
6.4 Activities Planned for Next Year.....	10
7.0 POLLUTION PREVENTION/GOOD HOUSEKEEPING	10
7.1 Employee Training	10
7.2 Street Sweeping	10
7.3 Catch Basin Cleaning.....	10
7.4 Preventative Maintenance.....	11
7.5 Windsor-Bloomfield Landfill	11
7.6 Activities Planned for Next Year.....	11
8.0 STORMWATER QUALITY TESTING.....	11

APPENDICES

END OF REPORT

A Stormwater Discharge Monitoring Reports

1.0 EXECUTIVE SUMMARY

In 2004, the Town of Windsor prepared a five-year Phase II Stormwater Management Plan (SWMP) as required by the Connecticut Department of Energy & Environmental Protection's General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit). The SWMP has remained in effect since 2004, as the CT DEEP General permit was reissued a number of times.

This document constitutes the Town's Annual Report for 2014 and summarizes the activities conducted to satisfy the permit requirements, modifications to the SWMP, and activities scheduled for the upcoming year, 2015.

2.0 PUBLIC EDUCATION AND OUTREACH

2.1 Catch Basin Markers

To date, more than 750 catch basin markers have been marked with a placard stating "Drains to Waterways and the Long Island Sound, No Dumping!" These markers warn people that discharging harmful contaminants into a catch basin has a negative impact on the local wetlands and waterways as well as the Long Island Sound. Additionally, residents received an educational flyer explaining the purpose of the catch basin markers installed in their neighborhood.

In 2012, the Engineering Department changed the Town Standard for precast concrete catch basin tops to include tops stamped with the words "Drains to Watercourse". The catch basin tops are available locally, and will be used when Public Works replaces catch basin tops throughout Town. New developments have also been requested to use these tops.

2.2 Educational Materials Distributed

Copies of the SWMP and Annual Reports are available for public review at the Windsor Main Library, the Wilson Branch Library, and the Town Clerk's Office. The Town's website also contains a stormwater page which includes links to a copy of the SWMP and Annual Reports. A variety of other media outlets have been used to provide stormwater management information to Windsor residents over the past year. Feature articles and photos were published in local

newspapers regarding Earth Day and Connecticut River community clean-up efforts. These newspapers include the *Hartford Courant*, *Windsor Journal*, and *Reminder News*. Promotional information on these events as well as other stormwater management educational information has also been broadcast on Windsor's Government Access Television Channel, WGTV.

In addition, the Town of Windsor publication, *There's a lot to do in Windsor*, includes many activities throughout the year focused on environmental preservation. Household Hazardous Waste Day, Earth Day, and Connecticut River Clean-up programs were also publicized in the magazine to educate all citizens. This town magazine, published three times per year, is mailed to every household and business in Windsor for a total distribution of 12,500.

Furthermore, this year's annual report and previous annual reports are made available to the public on the Town's website.

2.3 Citizen Groups

Various local citizen groups and organizations have assisted the Town in developing partnerships with the public and increasing stormwater awareness. These groups include ING Community Service Volunteers, Griffin Land, Four Seasons Landscaping, United Healthcare, Windsor Independent Living Association, the Rotary Club of Windsor/Windsor Locks, Windsor High School Honors Society, and Sage Park 6th grade. These groups continue to provide and/or have the capacity to provide public education resources on stormwater quality issues and continue to exist as support for future stormwater education programs in Windsor.

2.4 School and Other Educational Programs

In past years, a number of educational activities have been conducted with Windsor students. A recycling and watershed lesson has historically been given to sixth grade students at Sage Park Middle School by the Town Environmental Planner. Lessons and other projects continue each year. Town staff has also assisted the Loomis Chaffee School's Environmental Science students with their annual recycling unit of study by visiting classes and offering consultation.

Furthermore, Northwest Park continues to offer environmental education for students through the school system and also nature camp during the summer. Solar energy, cycle of life, plants and soils, pond study, geology of Connecticut, erosion, mammals, vernal pools, and the utilization of the STARLAB planetarium are some of the many classes offered. These programs focus on engaging the children and participants in hands on experiences to promote environmental stewardship. There are opportunities for adults and families to experience the same hands on environmental education through public workshops and special events. Natural holiday decorations, Owl Prowl, and Build a Bluebird Box are few workshops that are taking place this year while special events are offered each season at the Park.

2.5 Activities Scheduled for Next Year

Activities planned for next year include:

- Continue the installation of new catch basin tops stamped with “Drains to Watercourse”.
- Continue expanding educational resources.
- Continue soliciting assistance from various citizen groups to help with education and outreach.
- Continue participating in school programs.

3.0 **PUBLIC PARTICIPATION**

3.1 Community Clean-Ups

A community event called “Earth Funtastic” was held in honor of Earth Day 2014. The event was held on the town green and people turned out to learn about gardening, ground water, and recycling. They came to see birds of prey and touch reptiles in the touch tanks. There was even a musical performance from Tom Weber. Participants included such organizations as the Audubon Society, Mystic Marine Life Aquarium, Sierra Club, and Horizons birds of prey. Fun was had by all.

In September 2014, a number of clean-ups associated with the Connecticut River Watershed Council annual Source to Sea Cleanup efforts occurred within the Town of Windsor. One such effort was spearheaded by Milone & MacBroom, Inc. (MMI) a consulting engineering firm with which the Town periodically works with on projects. The MMI clean-up effort included teaming

up with volunteers from the Kids' Service Team. The project included the cleanup of over 1,000 feet of riverbank and approximately 1,020 pounds of trash was collected.

3.2 School Programs

Students in Windsor public schools are encouraged to volunteer in environmental activities over the summer vacation, in addition to after-school activities. Some of these ongoing programs include:

- Recycling programs
- Earth Day celebration
- Community clean-up events
- Science fairs

3.3 Stormwater Management Committee

In 2004 the Town established a Stormwater Management Committee to develop and implement the SWMP. Since that time, new members have joined the Committee. The Committee consists of members from a number of departments including Engineering, Planning (including the Environmental Planner), Public Works, Health Department, and Public Relations.

Members and subcommittees of the Stormwater Management Committee meet throughout the year to discuss existing programs and identify improvements or suggest new activities for the upcoming year.

3.4 Public Information

In April 2014, Windsor Project Engineer, Victoria Houle, presented at a seminar regarding stormwater management hosted by the Farmington River Watershed Association. The topic presented by Ms. Houle included the development of the Town of Windsor's Stormwater Management Plan, particularly the adoption and implementation of the various stormwater ordinances.

3.5 Activities Planned for Next Year

Activities planned for next year include:

- Conduct community clean-up events in spring and fall.
- Recruit student volunteers and/or interested citizens to assist in the illicit discharge detection and elimination efforts within the Phase II regulated areas.

4.0 **ILLICIT DISCHARGE DETECTION AND ELIMINATION**

4.1 Outfall Mapping

In 2005, the Town completed the mapping of all stormwater outfalls of 12” or greater throughout town. The outfall maps include information on over 550 outfalls. The outfall maps include:

- Type, material, and size of the conveyance, outfall or channelized flow; and
- The name of the watershed in which the discharge is located.

In 2010 these maps were updated to include additional structures installed and/or upgraded since the original mapping. Additionally, the name and Surface Water Quality Classification of surface waterbodies and wetlands were also added to the maps.

The maps are available for review at Town Hall in the Engineering Department.

4.2 Illicit Discharge Detection Ordinance

An Illicit Discharges and Connections Ordinance was adopted by Town Council on April 6, 2009 and became effective on April 20, 2009. The objectives of the ordinance are:

- To regulate the contribution of pollutants to the MS4 by stormwater discharges by any user.
- To prohibit illicit connection and discharges to the MS4.
- To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with the ordinance.

The Town is also in the process of developing and implementing a formal plan to detect and address future non-stormwater discharges, including illegal dumping, to the MS4. In conjunction with the existing mosquito-control program conducted throughout Town, town investigate instances of visible discharges during dry weather.

4.3 Activities Planned for Next Year

Activities planned for next year include:

- Update outfall mapping to include new outfall locations.
- Develop and implement a formal plan to detect and address future non-stormwater discharges, including illegal dumping, to the MS4.
- Train employees to help them identify illicit discharges and properly report and address such discharges.

5.0 CONSTRUCTION SITE RUNOFF CONTROL

5.1 Erosion and Sediment Control Ordinance

An ordinance on Erosion and Sediment Control was adopted by Town Council and became effective on February 2, 2009. The objectives of this ordinance are to safeguard persons, protect property, and prevent damage to the environment in the Town of Windsor by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that involves land disturbing activities of greater than 0.5-acre. The ordinance formalizes the previous Town staff review of erosion and sediment control measures by requiring an Erosion & Sediment Control Permit to be required for all sites disturbing greater than 0.5-acre. Approval of this permit must be received prior to the commencement of any land disturbing activity.

In addition to the Erosion & Sediment Control Ordinance, a Stormwater Manual was developed and became effective on February 4, 2009 to provide guidance on the requirements of an Erosion & Sediment Control Permit application as well as preferred appropriate erosion and sediment control measures and the design parameters for each type of erosion and sediment control measures.

In 2014, there were five (5) Erosion & Sediment Control Permits received and reviewed by Engineering.

5.2 Development Reviews

Approximately nineteen (19) applications for new development or redevelopment projects town-wide were reviewed and approved in 2014. Thirteen (13) of these applications were site plan revisions and reviewed by Town staff, the remaining thirteen (6) were reviewed by the Planning & Zoning Commission. Town staff reviews all proposed developments with respect to stormwater quantity and quality impacts. Erosion and sediment control plans are required to be submitted for all development applications greater than 0.5-acre. The Town's Zoning Regulations require the approval of an Erosion & Sediment Control Permit prior to the approval of the pending application. This practice will continue in following years.

5.3 Activities Planned for Next Year

Activities planned for next year include:

- Continue the review of development and redevelopment applications with respect to stormwater impacts and erosion and sediment control measures.

6.0 POST-CONSTRUCTION STORMWATER MANAGEMENT

6.1 Stormwater Management Ordinance

An ordinance on Stormwater Management was adopted by Town Council and became effective on February 2, 2009. The objectives of this ordinance are to:

- Establish decision-making processes surrounding land development activities that protect the integrity of the watershed and preserve the health of water resources;
- Require that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as nearly as practicable in order to reduce flooding, streambank erosion, non-point source pollution and increases in stream temperature, and to maintain the integrity of stream channels and aquatic habitats;

- Establish minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;
- Establish design and application criteria for the construction and use of structural stormwater control facilities that can be used to meet the minimum post-development stormwater management standards;
- Encourage the use of non-structural stormwater management and stormwater best site design practices, such as the preservation of greenspace and other conservation areas, to the maximum extent practicable, coordinate site design plans, which include greenspace, with the Town's Open Space and Agricultural Preservation Plans;
- Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and non-structural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety; and
- Establish administrative procedures for the submission, review, approval and disapproval of stormwater management plans, for the inspection of approved active projects, and for long-term follow-up.

The ordinance formalizes the previous Town staff review of stormwater management by requiring a Stormwater Management Permit for all sites creating greater than 5,000 SF of impervious area or that involves other land development activities of 1.0 acre or more. Approval of this permit must be received prior to the commencement of any land disturbing activity. The main requirements of a Stormwater Management Permit are:

1. To demonstrate compliance with the established post-development performance criteria.
2. To execute an Inspection & Maintenance Agreement which identifies the person(s) responsible for inspection and maintenance as well as a schedule for routine inspection and maintenance to ensure proper function of all stormwater management facilities and/or practices. The Inspection and Maintenance Agreement must be recorded in the Land Records maintained by the Windsor Town Clerk.

Additionally, applicants required to obtain a Stormwater Management Permit are also required to conduct inspections of the post-development stormwater management systems throughout

construction and to submit “as-built” plans of the system after final inspection by the Town Engineer.

The Town Stormwater Manual provides guidance on the requirements of a Stormwater Management Permit as well as the post-development stormwater management performance criteria applicable to all stormwater management plans.

In 2014, six (6) Stormwater Management Permit Applications were reviewed. To date, there have been twenty-one (21) post-construction Inspection & Maintenance Agreements in accordance with the Town’s Stormwater Management Ordinance recorded on land records.

6.2 Development Reviews

Approximately nineteen (19) applications for new development or redevelopment projects town-wide were reviewed and approved in 2014. Thirteen (13) of these applications were site plan revisions and reviewed by Town staff, the remaining thirteen (6) were reviewed by the Planning & Zoning Commission. Town staff reviews all proposed developments with respect to proposed stormwater management. The Town’s Zoning Regulations require the approval of a Stormwater Management Permit prior to the approval of the pending application. This practice will continue in following years.

6.3 Best Management Practices

The Town of Windsor currently utilizes guidance from the 2004 Connecticut Stormwater Quality Manual for evaluating and selecting both structural and non-structural stormwater management measures. The Town’s Stormwater Manual includes the specifications and standards for post-construction stormwater management. Additionally, town staff continue to evaluate the use of new Low Impact Development Practices and their suitability at various locations in town.

6.4 Activities Planned for Next Year

Activities planned for next year include:

- Continue the review of development and redevelopment applications with respect to proposed post-construction stormwater management design.
- Continue to evaluate the suitability of Low Impact Development Practices for implementation at various sites in town.

7.0 POLLUTION PREVENTION/GOOD HOUSEKEEPING

7.1 Employee Training

Approximately 25 Department of Public Works (DPW) staff (representing administrative and highway staff) received environmental-related training this year. The training included Chemical Hazard and Emergency Response and Right-to-Know training.

Select members of town staff also attended additional environmental seminars held by the CT DEEP, CT Floodplain Manager's Association, and various watershed associations.

7.2 Street Sweeping

All Town-owned roadways and parking areas were swept at least once during this year. Visual inspections and historical knowledge of roadways are used to identify streets within Town that require sweeping more than once per year. In addition, the use of sand during snow and ice removal activities in the winter was significantly reduced. This resulted in reduced quantities of sand being swept up during spring street sweeping and will have an ongoing impact on the amount of material requiring removal during catch basin cleaning.

7.3 Catch Basin Cleaning

The Town's current catch basin cleaning schedule is designed so that each catch basin is cleaned at least once during a three-year period. Additionally, the Health Department treats town-owned catch basins for mosquito's two to three times per year. If it is found that a catch basin is found to

be in need of cleaning, this information is forwarded to the Public Works Department. Typically, approximately 1,500 catch basins are cleaned per year.

7.4 Preventative Maintenance

Routine preventative maintenance on the Town's fleet of equipment and vehicles is performed at the town's maintenance garage.

7.5 Windsor-Bloomfield Landfill

The Windsor-Bloomfield Landfill officially closed in mid-2014. Until that point, the landfill accepted household trash, recyclables, yard waste, waste motor oil, tires, appliances and bulky items such as furniture and mattresses. Approximately 1,000 tons of municipal solid waste was collected in 2014. Approximately 8,500 tons of bulky waste and 185 tons of scrap metal were collected. Over 620 tons of leaves and brush were composted. Furthermore, the 2014 MDC Household Hazardous Waste Collection Day included the collection of acids, aerosols, batteries (alkaline, lead-acid, lithium, and Ni-Cad), flammable liquids, fluorescent bulbs, mercury-containing items, pesticides, and PCB ballasts.

7.6 Activities Planned for Next Year

Activities planned for next year include:

- Continue providing environmental-related and stormwater management training to DPW and other Town staff.
- Continue sweeping Town-owned streets in spring after snowmelt.
- Continue cleaning catch basins.

8.0 STORMWATER QUALITY TESTING

In accordance with the requirements of the MS4 General Permit, the following locations have been sampled annually since 2004. The outfall locations represent different land use types, geographic locations, watersheds, and receiving waters.

- 800 Marshall Phelps Road (Industrial)
- 615 Day Hill Road (Industrial)

TOWN OF WINDSOR – 2014 ANNUAL REPORT

- 1075 Kennedy Road (Commercial)
- 555 Day Hill Road (Commercial)
- 124/128 Harvest Lane (Residential)
- 21-27 Philip Henry Circle (Residential)

Stormwater sampling was conducted on October 1, 2014. Stormwater discharge monitoring reports for the event are included in Appendix A.

APPENDIX A

**Stormwater Discharge Monitoring Reports
October 1, 2014**



MASSACHUSETTS
100 Fifth Avenue, 5th Floor
Waltham, Massachusetts 02451
p 781.419.7698

RHODE ISLAND
10 Hemingway Drive, 2nd Floor
East Providence, Rhode Island 02915
p 401.434.5580

VIRGINIA
999 Waterside Drive, Suite 2525
Norfolk, Virginia 23510
p 757.777.3777

October 21, 2014

Ms. Victoria Houle
Project Engineer
275 Broad Street
Windsor, Connecticut 06095

**Re: 2014 MS4 Stormwater Monitoring Results
ESS Project No. W306-002**

Dear Ms. Houle:

ESS Group, Inc. (ESS) is pleased to provide you with the Municipal Separate Storm Sewer System (MS4) stormwater monitoring results for the Town of Windsor.

Stormwater from the Town's six (6) annual monitoring outfalls was collected on October 1, 2014. Two (2) locations representative of each required land use category (residential, industrial and commercial) were sampled. Additionally, rainfall pH was collected and analyzed in the field. Samples were collected in accordance with the General Permit requirements.

Stormwater samples were sent for analysis to Phoenix Environmental Laboratory of Manchester, Connecticut, a state-certified laboratory. Sample pH, hardness, conductivity, oil and grease, chemical oxygen demand (COD), turbidity, total suspended solids, total phosphorus, ammonia, total Kjeldahl nitrogen (TKN), nitrate/nitrite, and *E. coli* were analyzed in accordance with 40 CFR 136, as required by the General Permit.

Monitoring results from each outfall are presented in the attached Stormwater Monitoring Report forms. These results are presented for you to review and sign. After signing, the results should be submitted to the Connecticut Department of Energy and Environmental Protection with your annual report, in accordance with the General Permit requirements.

Please do not hesitate to contact me at (401) 330-1204 with any questions.

Sincerely,

ESS GROUP, INC.

Matt Ladewig, CLM
Project Scientist

Attachments



www.essgroup.com

environmental consulting & engineering services

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
 BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Windsor

Mailing Address: 275 Broad Street, Windsor, CT 06095

Contact Person: Robert Jarvis Title: Town Engineer

Phone: 860-285-1804 Permit Registration #GSM: 000066

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): W-1 - 124/128 Harvest Lane

Please check the appropriate area description: Industrial Commercial Residential

Receiving Water (name, basin): Farmington River

Time of Start of Discharge: 09:30

Date/Time Collected: 10/1/14 14:30 Water Temperature: 60.0 F

Person Collecting Sample: Collin Smythe (ESS Group, Inc.)

Storm Magnitude (inches): 0.59 Storm Duration (hours): 26 hours

Date of Previous Storm Event: 9/25/2014

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500-H+B	7.25 pH units	Phoenix Labs - Manchester, CT
Rain pH	Field	6.0 pH units	NA
Hardness	SM-2340B	14.9 mg/L	Phoenix Labs - Manchester, CT
Conductivity	SM2510B	52 umhos/cm	Phoenix Labs - Manchester, CT
Oil & Grease	1664A	< 1.4 mg/L	Phoenix Labs - Manchester, CT
COD	SM5220-D/Hach 8000	25 mg/L	Phoenix Labs - Manchester, CT
Turbidity	SM2130B	5.17 NTU	Phoenix Labs - Manchester, CT
TSS	SM2540D	<5.0 mg/L	Phoenix Labs - Manchester, CT
TP	365.1	0.21 mg/L	Phoenix Labs - Manchester, CT
Ammonia	350.1	0.98 mg/L	Phoenix Labs - Manchester, CT
TKN	351.1	1.95 mg/L	Phoenix Labs - Manchester, CT
NO ₃ +NO ₂	SM4500-NO3F	0.56 mg/L	Phoenix Labs - Manchester, CT
E. coli	EPA Mod 1603	3450 col/100 mL	Phoenix Labs - Manchester, CT

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Victoria Houle
 (Print Name)

Signature: Victoria Houle Date: 10/22/14



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: <u>Windsor</u>
Mailing Address: <u>275 Broad Street, Windsor, CT 06095</u>
Contact Person: <u>Robert Jarvis</u> Title: <u>Town Engineer</u>
Phone: <u>860-285-1804</u> Permit Registration #GSM: <u>000066</u>

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): <u>W-2 - 1075 Kennedy Road</u>
Please check the appropriate area description: <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Residential
Receiving Water (name, basin): <u>Farmington River</u>
Time of Start of Discharge: <u>09:30</u>
Date/Time Collected: <u>10/1/14 15:30</u> Water Temperature: <u>64.6 F</u>
Person Collecting Sample: <u>Collin Smythe (ESS Group, Inc.)</u>
Storm Magnitude (inches): <u>0.59 inches</u> Storm Duration (hours): <u>26 hours</u>
Date of Previous Storm Event: <u>9/25/2014</u>

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500-H+B	7.07 pH units	Phoenix Labs - Manchester, CT
Rain pH	Field	6.0 pH units	NA
Hardness	SM-2340B	9.8 mg/L	Phoenix Labs - Manchester, CT
Conductivity	SM2510B	74 umhos/cm	Phoenix Labs - Manchester, CT
Oil & Grease	1664A	11 mg/L	Phoenix Labs - Manchester, CT
COD	SM5220-D/Hach 8000	57 mg/L	Phoenix Labs - Manchester, CT
Turbidity	SM2130B	40.1 NTU	Phoenix Labs - Manchester, CT
TSS	SM2540D	19 mg/L	Phoenix Labs - Manchester, CT
TP	365.1	0.12 mg/L	Phoenix Labs - Manchester, CT
Ammonia	350.1	0.62 mg/L	Phoenix Labs - Manchester, CT
TKN	351.1	1.67 mg/L	Phoenix Labs - Manchester, CT
NO ₃ +NO ₂	SM4500-NO3F	0.06 mg/L	Phoenix Labs - Manchester, CT
E. coli	EPA Mod 1603	910 col/100 mL	Phoenix Labs - Manchester, CT

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.	
Authorized Official: <u>Victoria Houle</u> (Print Name)	Date: <u>12/22/14</u>
Signature: <u>Victoria Houle</u>	



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Windsor
Mailing Address: 275 Broad Street, Windsor, CT 06095
Contact Person: Robert Jarvis Title: Town Engineer
Phone: 860-285-1804 Permit Registration #GSM: 000066

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): W-3 - 555 Day Hill Road
Please check the appropriate area description: Industrial Commercial Residential
Receiving Water (name, basin): Mill Brook
Time of Start of Discharge: 09:30
Date/Time Collected: 10/1/14 14:05 Water Temperature: 61.7 F
Person Collecting Sample: Collin Smythe (ESS Group, Inc.)
Storm Magnitude (inches): 0.59 Storm Duration (hours): 26 hours
Date of Previous Storm Event: 9/25/14

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500-H+B	6.79 pH units	Phoenix Labs Manchester, CT
Rain pH	Field	6.6 pH units	NA
Hardness	SM-2340B	6.4 mg/L	Phoenix Labs Manchester, CT
Conductivity	SM2510B	28 umhos/cm	Phoenix Labs Manchester, CT
Oil & Grease	1664A	<1.4 mg/L	Phoenix Labs Manchester, CT
COD	SM5220-D/Hach 8000	12 mg/L	Phoenix Labs Manchester, CT
Turbidity	SM2130B	3.96 NTU	Phoenix Labs Manchester, CT
TSS	SM2540D	<5.0 mg/L	Phoenix Labs Manchester, CT
TP	365.1	0.16 mg/L	Phoenix Labs Manchester, CT
Ammonia	350.1	0.29 mg/L	Phoenix Labs Manchester, CT
TKN	351.1	0.82 mg/L	Phoenix Labs Manchester, CT
NO ₃ +NO ₂	SM4500-NO3F	0.49 mg/L	Phoenix Labs Manchester, CT
E. coli	EPA Mod 1603	360 col/100 mL	Phoenix Labs Manchester, CT

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Victoria Houle
(Print Name)
Signature: Victoria Houle Date: 12/22/14



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
 BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Windsor

Mailing Address: 275 Broad Street, Windsor, CT 06095

Contact Person: Robert Jarvis Title: Town Engineer

Phone: 860-285-1804 Permit Registration #GSM: 000066

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): W-4 - 615 Day Hill Road

Please check the appropriate area description: Industrial Commercial Residential

Receiving Water (name, basin): Mill Brook

Time of Start of Discharge: 09:30

Date/Time Collected: 10/1/14 13:55 Water Temperature: 61.9 F

Person Collecting Sample: Collin Smythe (ESS Group, Inc.)

Storm Magnitude (inches): 0.59 Storm Duration (hours): 26 hours

Date of Previous Storm Event: 9/25/14

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500-H+B	6.86 pH units	Phoenix Labs - Manchester, CT
Rain pH	Field	6.6 pH units	NA
Hardness	SM-2340B	8.6 mg/L	Phoenix Labs - Manchester, CT
Conductivity	SM2510B	40 umhos/cm	Phoenix Labs - Manchester, CT
Oil & Grease	1664A	<1.4 mg/L	Phoenix Labs - Manchester, CT
COD	SM5220-D/Hach 8000	27 mg/L	Phoenix Labs - Manchester, CT
Turbidity	SM2130B	16.7 NTU	Phoenix Labs - Manchester, CT
TSS	SM2540D	7.5 mg/L	Phoenix Labs - Manchester, CT
TP	365.1	0.11 mg/L	Phoenix Labs - Manchester, CT
Ammonia	350.1	0.10 mg/L	Phoenix Labs - Manchester, CT
TKN	351.1	0.63 mg/L	Phoenix Labs - Manchester, CT
NO ₃ +NO ₂	SM4500-NO3F	0.49 mg/L	Phoenix Labs - Manchester, CT
E. coli	EPA Mod 1603	1080 col/100 mL	Phoenix Labs - Manchester, CT

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: Victoria Houle
 (Print Name)

Signature: Victoria Houle Date: 10/22/14



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
 BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: <u>Windsor</u>	
Mailing Address: <u>275 Broad Street, Windsor, CT 06095</u>	
Contact Person: <u>Robert Jarvis</u>	Title: <u>Town Engineer</u>
Phone: <u>860-285-1804</u>	Permit Registration #GSM: <u>000066</u>

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): <u>W-5 - 800 Marshall Phelps Road</u>	
Please check the appropriate area description: <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Residential	
Receiving Water (name, basin): <u>Mill Brook</u>	
Time of Start of Discharge: <u>09:30</u>	
Date/Time Collected: <u>11/27/2013 08:45</u>	Water Temperature: <u>64.8 F</u>
Person Collecting Sample: <u>Collin Smythe (ESS Group, Inc.)</u>	
Storm Magnitude (inches): <u>0.59</u>	Storm Duration (hours): <u>26 hours</u>
Date of Previous Storm Event: <u>9/25/14</u>	

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500-H+B	6.94 pH units	Phoenix Labs - Manchester, CT
Rain pH	Field	6.6 pH units	NA
Hardness	SM-2340B	6.8 mg/L	Phoenix Labs - Manchester, CT
Conductivity	SM2510B	42 umhos/cm	Phoenix Labs - Manchester, CT
Oil & Grease	1664A	1.7 mg/L	Phoenix Labs - Manchester, CT
COD	SM5220-D/Hach 8000	25 mg/L	Phoenix Labs - Manchester, CT
Turbidity	SM2130B	19.9 NTU	Phoenix Labs - Manchester, CT
TSS	SM2540D	15 mg/L	Phoenix Labs - Manchester, CT
TP	365.1	0.22 mg/L	Phoenix Labs - Manchester, CT
Ammonia	350.1	0.45 mg/L	Phoenix Labs - Manchester, CT
TKN	351.1	1.30 mg/L	Phoenix Labs - Manchester, CT
NO ₃ +NO ₂	SM4500-NO3F	0.056 mg/L	Phoenix Labs - Manchester, CT
E. coli	EPA Mod 1603	580 col/100mL	Phoenix Labs - Manchester, CT

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the MS4 General Permit. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.	
Authorized Official: <u>Victoria Houle</u>	
(Print Name)	
Signature: <u>Victoria Houle</u>	Date: <u>12/22/14</u>



General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Stormwater Monitoring Report Form

Please send completed form to: STORMWATER GROUP
 BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

PERMITTEE INFORMATION

Town: Windsor

Mailing Address: 275 Broad Street, Windsor, CT 06095

Contact Person: Robert Jarvis Title: Town Engineer

Phone: 860-285-1804 Permit Registration #GSM: 000066

SAMPLING INFORMATION

Discharge Location (Lat/Long or other description): W-6 - 21/27 Philip Henry Circle

Please check the appropriate area description: Industrial Commercial Residential

Receiving Water (name, basin): Decker's Brook/Connecticut River

Time of Start of Discharge: 09:30

Date/Time Collected: 10/1/2014 13:00 Water Temperature: 62.9 F

Person Collecting Sample: Collin Smythe (ESS Group, Inc.)

Storm Magnitude (inches): 0.59 Storm Duration (hours): 26 hours

Date of Previous Storm Event: 9/25/14

MONITORING RESULTS

Parameter	Method	Results (units)	Laboratory
Sample pH	SM 4500-H+B	6.98 pH units	Phoenix Labs - Manchester, CT
Rain pH	Field	6.6 pH units	NA
Hardness	SM-2340B	8.0 mg/L	Phoenix Labs - Manchester, CT
Conductivity	SM2510B	42 umhos/cm	Phoenix Labs - Manchester, CT
Oil & Grease	1664A	<1.4 mg/L	Phoenix Labs - Manchester, CT
COD	SM5220-D/Hach 8000	16 mg/L	Phoenix Labs - Manchester, CT
Turbidity	SM2130B	6.80 mg/L	Phoenix Labs - Manchester, CT
TSS	SM2540D	<5.0 mg/L	Phoenix Labs - Manchester, CT
TP	365.1	0.09 mg/L	Phoenix Labs - Manchester, CT
Ammonia	350.1	0.25 mg/L	Phoenix Labs - Manchester, CT
TKN	351.1	1.55 mg/L	Phoenix Labs - Manchester, CT
NO ₃ +NO ₂	SM4500-NO3F	0.34 mg/L	Phoenix Labs - Manchester, CT
E. coli	EPA Mod 1603	1780 col/100mL	Phoenix Labs - Manchester, CT

STATEMENT OF ACKNOWLEDGMENT

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Authorized Official: Victoria Houle
 (Print Name)

Signature: Victoria Houle Date: 12/22/14



Friday, October 10, 2014

Attn: Mr Matt Ladewig
ESS Group Inc.
10 Hemingway Drive 2nd Floor
Riverside, RI 02915-2224

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
Sample ID#s: BH21803 - BH21808

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

A handwritten signature in cursive script that reads "Phyllis Shiller".

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report
 October 10, 2014

FOR: Attn: Mr Matt Ladewig
 ESS Group Inc.
 10 Hemingway Drive 2nd Floor
 Riverside, RI 02915-2224

Sample Information

Matrix: STORM WATER
 Location Code: ESSGRPRI
 Rush Request: Standard
 P.O.#:

Custody Information

Collected by:
 Received by: LB
 Analyzed by: see "By" below

Date Time
 10/01/14 13:00
 10/01/14 16:55

Laboratory Data

SDG ID: GBH21803
 Phoenix ID: BH21803

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
 Client ID: W-6

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Hardness (CaCO3)	8.0	0.1	mg/L	10/08/14		E200.7
Escherichia Coli	1780	10	MPN/100 mls	10/01/14 18:25	RS/KDB	SM 9223B
Total Coliforms	>24200	10	MPN/100 mls	10/01/14 18:25	RS/KDB	9223B
C.O.D.	16	10	mg/L	10/02/14	ESG	SM5220 D
Conductivity	42	5	umhos/cm	10/02/14	RWR/KDBSM	2510B
Ammonia as Nitrogen	0.25	0.02	mg/L	10/06/14	WHM	E350.1
Nitrite-N	< 0.01	0.01	mg/L	10/02/14 02:38	BS	E353.2
Nitrate-N	0.33	0.01	mg/L	10/02/14 02:38	BS	E353.2
Oil and Grease by EPA 1664	< 1.4	1.4	mg/L	10/03/14	MA	EPA 1664A
pH	6.98	0.10	pH Units	10/02/14 03:28	RWR/KDB	4500-H B/9040
Nitrogen Tot Kjeldahl	1.55	0.10	mg/L	10/06/14	WHM	E351.1
Phosphorus, as P	0.09	0.01	mg/L	10/03/14	JR	SM4500P E
Total Suspended Solids	< 5.0	5.0	mg/L	10/03/14	CL	SM2540D
Turbidity	6.80	0.20	NTU	10/02/14 03:28	RWR/KDBSM	2130B
Total Metals Digestion	Completed			10/07/14	AG	SW846 - 3050

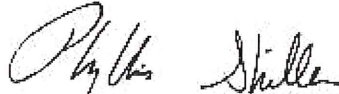
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director

October 10, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 10, 2014

FOR: Attn: Mr Matt Ladewig
 ESS Group Inc.
 10 Hemingway Drive 2nd Floor
 Riverside, RI 02915-2224

Sample Information

Matrix: STORM WATER
 Location Code: ESSGRPRI
 Rush Request: Standard
 P.O.#:

Custody Information

Collected by:
 Received by: LB
 Analyzed by: see "By" below

Date

10/01/14
 10/01/14

Time

13:30
 16:55

Laboratory Data

SDG ID: GBH21803
 Phoenix ID: BH21804

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
 Client ID: W-5

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Hardness (CaCO3)	6.8	0.1	mg/L	10/08/14		E200.7
Escherichia Coli	580	10	MPN/100 mls	10/01/14 18:25	RS/KDB	SM 9223B
Total Coliforms	>24200	10	MPN/100 mls	10/01/14 18:25	RS/KDB	9223B
C.O.D.	25	10	mg/L	10/02/14	ESG	SM5220 D
Conductivity	42	5	umhos/cm	10/02/14	RWR/KDBSM	2510B
Ammonia as Nitrogen	0.45	0.02	mg/L	10/06/14	WHM	E350.1
Nitrite-N	0.02	0.01	mg/L	10/02/14 02:39	BS	E353.2
Nitrate-N	0.54	0.01	mg/L	10/02/14 02:39	BS	E353.2
Oil and Grease by EPA 1664	1.7	1.4	mg/L	10/03/14	MA	EPA 1664A
pH	6.94	0.10	pH Units	10/02/14 03:38	RWR/KDB	4500-H B/9040
Nitrogen Tot Kjeldahl	1.30	0.10	mg/L	10/06/14	WHM	E351.1
Phosphorus, as P	0.22	0.01	mg/L	10/03/14	JR	SM4500P E
Total Suspended Solids	15	5.0	mg/L	10/03/14	CL	SM2540D
Turbidity	19.9	0.20	NTU	10/02/14 03:38	RWR/KDBSM	2130B
Total Metals Digestion	Completed			10/07/14	AG	SW846 - 3050

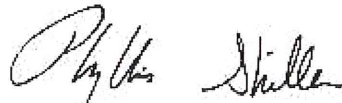
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

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Phyllis Shiller, Laboratory Director

October 10, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 10, 2014

FOR: Attn: Mr Matt Ladewig
 ESS Group Inc.
 10 Hemingway Drive 2nd Floor
 Riverside, RI 02915-2224

Sample Information

Matrix: STORM WATER
 Location Code: ESSGRPRI
 Rush Request: Standard
 P.O.#:

Custody Information

Collected by:
 Received by: LB
 Analyzed by: see "By" below

Date

10/01/14
 10/01/14

Time

13:55
 16:55

Laboratory Data

SDG ID: GBH21803
 Phoenix ID: BH21805

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
 Client ID: W-4

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Hardness (CaCO3)	8.6	0.1	mg/L	10/08/14		E200.7
Escherichia Coli	1080	10	MPN/100 mls	10/01/14 18:25	RS/KDB	SM 9223B
Total Coliforms	>24200	10	MPN/100 mls	10/01/14 18:25	RS/KDB	9223B
C.O.D.	27	10	mg/L	10/02/14	ESG	SM5220 D
Conductivity	40	5	umhos/cm	10/02/14	RWR/KDBSM2510B	
Ammonia as Nitrogen	0.10	0.02	mg/L	10/06/14	WHM	E350.1
Nitrite-N	0.02	0.01	mg/L	10/02/14 02:40	BS	E353.2
Nitrate-N	0.47	0.01	mg/L	10/02/14 02:40	BS	E353.2
Oil and Grease by EPA 1664	< 1.4	1.4	mg/L	10/03/14	MA	EPA 1664A
pH	6.86	0.10	pH Units	10/02/14 03:48	RWR/KDB4500-H B/9040	
Nitrogen Tot Kjeldahl	0.63	0.10	mg/L	10/06/14	WHM	E351.1
Phosphorus, as P	0.11	0.01	mg/L	10/03/14	JR	SM4500P E
Total Suspended Solids	7.5	5.0	mg/L	10/03/14	CL	SM2540D
Turbidity	16.7	0.20	NTU	10/02/14 03:48	RWR/KDBSM2130B	
Total Metals Digestion	Completed			10/07/14	AG	SW846 - 3050

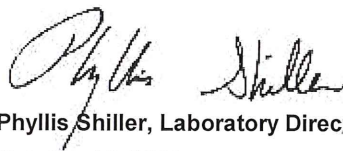
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director

October 10, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report
 October 10, 2014

FOR: Attn: Mr Matt Ladewig
 ESS Group Inc.
 10 Hemingway Drive 2nd Floor
 Riverside, RI 02915-2224

Sample Information

Matrix: STORM WATER
 Location Code: ESSGRPRI
 Rush Request: Standard
 P.O.#:

Custody Information

Collected by:
 Received by: LB
 Analyzed by: see "By" below

Date

10/01/14
 10/01/14

Time

14:05
 16:55

Laboratory Data

SDG ID: GBH21803
 Phoenix ID: BH21806

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
 Client ID: W-3

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Hardness (CaCO3)	6.4	0.1	mg/L	10/09/14		E200.7
Escherichia Coli	360	10	MPN/100 mls	10/01/14 18:25	RS/KDB	SM 9223B
Total Coliforms	>24200	10	MPN/100 mls	10/01/14 18:25	RS/KDB	9223B
C.O.D.	12	10	mg/L	10/02/14	ESG	SM5220 D
Conductivity	28	5	umhos/cm	10/02/14	RWR/KDBSM	2510B
Ammonia as Nitrogen	0.29	0.02	mg/L	10/06/14	WHM	E350.1
Nitrite-N	0.02	0.01	mg/L	10/02/14 02:41	BS	E353.2
Nitrate-N	0.47	0.01	mg/L	10/02/14 02:41	BS	E353.2
Oil and Grease by EPA 1664	< 1.4	1.4	mg/L	10/03/14	MA	EPA 1664A
pH	6.79	0.10	pH Units	10/02/14 04:08	RWR/KDB	4500-H B/9040
Nitrogen Tot Kjeldahl	0.82	0.10	mg/L	10/06/14	WHM	E351.1
Phosphorus, as P	0.16	0.01	mg/L	10/03/14	JR	SM4500P E
Total Suspended Solids	< 5.0	5.0	mg/L	10/03/14	CL	SM2540D
Turbidity	3.96	0.20	NTU	10/02/14 04:08	RWR/KDBSM	2130B
Total Metals Digestion	Completed			10/07/14	AG	SW846 - 3050

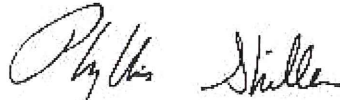
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

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Phyllis Shiller, Laboratory Director

October 10, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report
 October 10, 2014

FOR: Attn: Mr Matt Ladewig
 ESS Group Inc.
 10 Hemingway Drive 2nd Floor
 Riverside, RI 02915-2224

Sample Information

Matrix: STORM WATER
 Location Code: ESSGRPRI
 Rush Request: Standard
 P.O.#:

Custody Information

Collected by:
 Received by: LB
 Analyzed by: see "By" below

Date

10/01/14
 10/01/14

Time

14:30
 16:55

Laboratory Data

SDG ID: GBH21803
 Phoenix ID: BH21807

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
 Client ID: W-1

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Hardness (CaCO3)	14.9	0.1	mg/L	10/08/14		E200.7
Escherichia Coli	3450	10	MPN/100 mls	10/01/14 18:25	RS/KDB	SM 9223B
Total Coliforms	>24200	10	MPN/100 mls	10/01/14 18:25	RS/KDB	9223B
C.O.D.	25	10	mg/L	10/02/14	ESG	SM5220 D
Conductivity	52	5	umhos/cm	10/02/14	RWR/KDBSM2510B	
Ammonia as Nitrogen	0.98	0.02	mg/L	10/06/14	WHM	E350.1
Nitrite-N	0.07	0.01	mg/L	10/02/14 02:42	BS	E353.2
Nitrate-N	0.49	0.01	mg/L	10/02/14 02:42	BS	E353.2
Oil and Grease by EPA 1664	< 1.4	1.4	mg/L	10/03/14	MA	EPA 1664A
pH	7.25	0.10	pH Units	10/02/14 04:23	RWR/KDB4500-H B/9040	
Nitrogen Tot Kjeldahl	1.95	0.10	mg/L	10/06/14	WHM	E351.1
Phosphorus, as P	0.21	0.01	mg/L	10/03/14	JR	SM4500P E
Total Suspended Solids	< 5.0	5.0	mg/L	10/03/14	CL	SM2540D
Turbidity	5.17	0.20	NTU	10/02/14 04:23	RWR/KDBSM2130B	
Total Metals Digestion	Completed			10/07/14	AG	SW846 - 3050

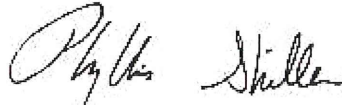
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

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Phyllis Shiller, Laboratory Director

October 10, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report
 October 10, 2014

FOR: Attn: Mr Matt Ladewig
 ESS Group Inc.
 10 Hemingway Drive 2nd Floor
 Riverside, RI 02915-2224

Sample Information

Matrix: STORM WATER
 Location Code: ESSGRPRI
 Rush Request: Standard
 P.O.#:

Custody Information

Collected by:
 Received by: LB
 Analyzed by: see "By" below

Date

10/01/14
 10/01/14

Time

15:30
 16:55

Laboratory Data

SDG ID: GBH21803
 Phoenix ID: BH21808

Project ID: CONNECTICUT MS4 STORMWATER WINDSOR, CT
 Client ID: W-2

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Hardness (CaCO3)	9.8	0.1	mg/L	10/08/14		E200.7
Escherichia Coli	910	10	MPN/100 mls	10/01/14 18:25	RS/KDB	SM 9223B
Total Coliforms	>24200	10	MPN/100 mls	10/01/14 18:25	RS/KDB	9223B
C.O.D.	57	10	mg/L	10/02/14	ESG	SM5220 D
Conductivity	74	5	umhos/cm	10/02/14	RWR/KDBSM	2510B
Ammonia as Nitrogen	0.62	0.04	mg/L	10/06/14	WHM	E350.1
Nitrite-N	0.05	0.01	mg/L	10/02/14 01:32	BS	E353.2
Nitrate-N	< 0.01	0.01	mg/L	10/02/14 01:32	BS	E353.2
Oil and Grease by EPA 1664	11	1.4	mg/L	10/03/14	MA	EPA 1664A
pH	7.07	0.10	pH Units	10/02/14 04:33	RWR/KDB	4500-H B/9040
Nitrogen Tot Kjeldahl	1.67	0.20	mg/L	10/06/14	WHM	E351.1
Phosphorus, as P	0.12	0.01	mg/L	10/03/14	JR	SM4500P E
Total Suspended Solids	19	5.0	mg/L	10/03/14	CL	SM2540D
Turbidity	40.1	0.20	NTU	10/02/14 04:33	RWR/KDBSM	2130B
Total Metals Digestion	Completed			10/07/14	AG	SW846 - 3050

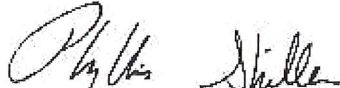
Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200. This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director

October 10, 2014

Reviewed and Released by: Bobbi Aloisa, Vice President



Environmental Laboratories, Inc.
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QA/QC Report

October 10, 2014

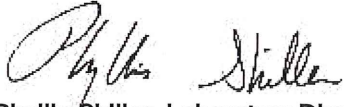
QA/QC Data

SDG I.D.: GBH21803

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 288084, QC Sample No: BH21590 (BH21803, BH21804, BH21805, BH21806)												
Total Suspended Solids	BRL	<5.0	<5.0	NC	97.0						85 - 115	20
QA/QC Batch 288086, QC Sample No: BH21599 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)												
Oil and Grease by EPA 1664	BRL				99.0						85 - 115	20
QA/QC Batch 288078, QC Sample No: BH21642 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)												
Phosphorus, as P	BRL	0.18	0.18	0	106			101			85 - 115	20
QA/QC Batch 288115, QC Sample No: BH21649 (BH21803)												
Ammonia as Nitrogen	BRL	0.77	0.77	0	100			84.1			85 - 115	20
Nitrogen Tot Kjeldahl	BRL	3.32	3.45	3.80	104			NC			85 - 115	20
Comment:												
During TKN digestion, a residue formed on the bottom of the TKN sample tubes resulting in a low spike matrix recovery. However, all other QC passed including the blank, LCS, and TKN blank spike.												
QA/QC Batch 287988, QC Sample No: BH21657 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)												
Conductivity	BRL	183	183	0	97.0						85 - 115	20
QA/QC Batch 287973, QC Sample No: BH21657 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)												
pH		7.29	7.29	0	96.6						85 - 115	20
QA/QC Batch 287983, QC Sample No: BH21657 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)												
Turbidity	BRL	<0.20	<0.20	NC	93.8						85 - 115	20
QA/QC Batch 288006, QC Sample No: BH21796 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)												
C.O.D.	BRL	14	12	NC	95.5			102			85 - 115	20
QA/QC Batch 287928, QC Sample No: BH21807 (BH21803, BH21804, BH21805, BH21806, BH21807)												
Nitrate-N	BRL	0.49	0.49	0	105			110			85 - 115	20
Nitrite-N	BRL	0.07	0.07	0	103			103			85 - 115	20
QA/QC Batch 288087, QC Sample No: BH21807 (BH21807, BH21808)												
Total Suspended Solids	BRL	<5.0	<5.0	NC	95.0						85 - 115	20
QA/QC Batch 287926, QC Sample No: BH21878 (BH21808)												
Nitrate-N	BRL	<0.01	<0.01	NC	104			112			85 - 115	20
Nitrite as Nitrogen	BRL	<0.01	<0.01	NC	102			104			85 - 115	20
QA/QC Batch 288185, QC Sample No: BH21954 (BH21804, BH21805, BH21806, BH21807, BH21808)												
Ammonia as Nitrogen	BRL	0.08	0.08	NC	109			105			85 - 115	20
Nitrogen Tot Kjeldahl	BRL	0.83	0.87	4.70	102			102			85 - 115	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

- RPD - Relative Percent Difference
- LCS - Laboratory Control Sample
- LCSD - Laboratory Control Sample Duplicate
- MS - Matrix Spike
- MS Dup - Matrix Spike Duplicate
- NC - No Criteria
- Intf - Interference


 Phyllis Shiller, Laboratory Director
 October 10, 2014

QA/QC Data

SDG I.D.: GBH21803

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
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Sample Criteria Exceedences Report

Criteria: None

State: CT

GBH21803 - ESSGRPRI

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL	Analysis Units
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*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Reasonable Confidence Protocol Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** ESS Group Inc.

Project Location: CONNECTICUT MS4 STORMWA **Project Number:**

Laboratory Sample ID(s): BH21803, BH21804, BH21805, BH21806, BH21807, BH21808

Sampling Date(s): 10/1/2014

RCP Methods Used:

1311/1312 6010 7000 7196 7470/7471 8081 EPH TO15
 8082 8151 8260 8270 ETPH 9010/9012 VPH

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1a.	Were the method specified preservation and holding time requirements met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5b.	Were these reporting limits met?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
7.	Are project-specific matrix spikes and laboratory duplicates included in the data set?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized
Signature: _____

Ethan Lee

Date: Friday, October 10, 2014

Printed Name: Ethan Lee

Position: Project Manager



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RCP Certification Report

October 10, 2014

SDG I.D.: GBH21803

ICP Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Blue 10/07/14-1 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 10/7/2014

Instrument: Blue 10/08/14-1 (BH21803, BH21804, BH21805, BH21806, BH21807, BH21808)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 10/8/2014

Instrument: Blue 10/09/14-1 (BH21806)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 10/9/2014

Temperature Narration

The samples in this delivery group were received at 1°C.
(Note acceptance criteria is above freezing up to 6°C)



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RCP Certification Report

October 10, 2014

SDG I.D.: GBH21803

