

Project File: LYF-1337
Zepaj Lane
Lynnfield, Massachusetts 01940

**OPERATION AND MAINTENANCE PLAN
AND LONG-TERM POLLUTION PREVENTION PLAN**

Zepaj Lane

Lynnfield, Massachusetts

Date: August 30, 2017

Revised February 27, 2018



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**OPERATION AND MAINTENANCE PLAN
ZEPAJ LANE
LYNNFIELD, MASSACHUSETTS**

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GENERAL

The management plan incorporates a combination of three or more of the following chain of structural Best Management Practices to improve the water quality of the stormwater runoff from the proposed roadway.

1. Deep Sump Catch Basin with hood
2. Proprietary Particle Separator
3. Roadway Sweeping

These stormwater management facilities have unique characteristics, uses, planning considerations and maintenance requirements. The maintenance requirements, as suggested by the DEP in "Volume 2 Chapter 2: Structural BMP Specifications for the Massachusetts Stormwater Handbook", and the suggested schedules, are summarized in the following sections. It is suggested that the following guidelines be adhered to for a one-year cycle following completion of the project, then adjusted, as necessary, based on the results of the required inspections, unless otherwise stated.

Deep Sump Catch Basin

- Deep Sump Catch Basins should be inspected and cleaned a minimum of four (4) times per year and at the end of foliage and snow removal seasons. If the roadway is accepted as a public way the catch basins will be inspected and cleaned once annually.
- Sediment must be removed whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.
- All sediments and hydrocarbons should be properly handled and disposed, in accordance with local, state and federal guidelines and regulations.

Stormwater Management Areas (Subsurface Detention Chambers)

Chamber maintenance is not generally required. However, Subsurface systems are prone to failure due to clogging. Regulating the sediment and petroleum product input to the proposed system is the priority maintenance activity. Sediments and any oil spillage should be trapped and removed before they reach the chambers. Catch basin and proprietary particle separator pre-treatment devices which flow into the infiltration system shall be regularly cleaned according to the maintenance schedules provided herein to prevent fine sediments and debris from entering and clogging the subsurface system.

To assist with the function of the infiltration chambers the first row in the system is an Isolator Row.

Isolator Row Inspection and Maintenance

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- Inspect the Isolator Row after the site is stabilized and twice annually for the first year thereafter.
- Inspection should be adjusted after the first year as needed but at a minimum annually.
- Maintenance is required if sediment exceeds three inches throughout the length of the Isolator Row.
- Clean the Isolator Row with a JetVac system with a rear facing nozzle.
- The nozzle should be fed down the length of the Isolator Row and retrieved while the manhole used to access the system is vacuumed.
- Repeat the process until the backflush is clean.

In addition, Hayes Engineering, Inc. recommends the following to ensure that the chambers function well into the future.

- The Contractor shall verify that the required crushed stone and geotechnical fabric materials are clean and free of sediments and petroleum residue prior to, during and after the chamber system installation.
- Inspections of the chamber system shall be made by a registered profession engineer after every major storm for the first few months after construction to verify that proper function has been achieved. During these initial inspections, water levels in the chambers should be measured and recorded in a permanent log over several days to check the drainage duration and verify that sediments are not accumulating. If ponded water is present after 24 hours or an accumulation of sediment or debris is noted within the chambers, the Homeowners Association (or designated property manager) and engineer shall determine the cause for this condition and devise an action plan to improve system functionality. Any required maintenance or major repair will be documented in the permanent log book and be completed within seven business days, with a report of such to the Towns Engineer.
- Once the chamber system has been verified to perform as designed, interior chamber conditions shall be inspected at least annually. Post construction inspections (to be conducted through inspection ports) shall consist of documenting interior chamber and bed conditions, measured water depth, and presence of sediment. If inspection indicates that the system is clogged (ponding water present after 24 hours or sediment accumulations present), replacement or major repair actions may be required as determined by a professional engineer. In this case, the Homeowners Association (or designated property manager) and engineer shall determine the cause for this condition and devise an action plan. Any required maintenance or major repair will be documented in the permanent log book and be completed within seven business days, with a report of such to the Town Engineer.
- The inspection and maintenance responsibility for the subsurface system shall belong to the Homeowners Association (or designated property manager).

Stormceptor STC 900 Water Quality Chamber

Regulating the input to the proposed water quality system is the priority maintenance activity. Sediments and any oil spillage should be trapped and removed before they reach the chambers.

- Stormceptor chamber maintenance shall be performed on a regular basis as recommended by the manufacturer (described in the attached excerpt from the Stormceptor Maintenance Brochure obtained from the Stormceptor website (www.stormceptor.com) and as summarized below.
- Sediment removal is recommended annually, but is likely to vary widely based on site conditions and loadings. Typical maintenance cleaning can be done with a vacuum truck. Inspection for each of the Stormceptor units will include a quantification of the sediment load and oil and grease volumes. This is easily made from the surface with a tube dipstick with ball valve inserted through the cleanout pipe or other access port. Depths of sediment indicating maintenance are presented in the following table for the various models. Inspection of the internal structure should be part of the routine inspection plan. The units are designed to accept 15% of their capacity in solids annually based on maximum drainage area loading. Removal of sediment, oils, and grease from the system will depend on rates of accumulation. All sediment and oil waste materials shall be disposed of in accordance with all Federal, State, and Local regulations.

REQUIRED MAINTENANCE *

<u>Model</u>	<u>Sediment Depth (in.)</u>
Stormceptor Model 900	8*

* based on 15% of the interceptor's sediment storage

Roadway Sweeping

In order to minimize the TSS load to the deep sump catch basins and those BMPs downstream it is planned to sweep the roadway four (4) times per year or more frequently if conditions require. Based upon actual experience and documentation a revised schedule may be submitted to the Town Engineer for approval. If the roadway is accepted as a public way the roadway will be swept once annually.

Removal of Siltation Controls

All siltation controls, including, but not limited to, hay bales and silt fence, shall be removed, with the approval of the Town Engineer, as soon as practical after paving, re-vegetation and total stabilization of the site. Unvegetated areas remaining in the area of the siltation controls shall be loamed and seeded with the appropriate groundcover to ensure re-vegetation as rapidly as possible after the removal of the siltation controls. In the case of all

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proposed stormwater management facilities, during construction of the proposed stormwater management system the developer shall be the owner and party responsible for maintenance.

Owner and Maintenance Responsibilities

Once the development is complete, the Homeowners Association will assume the responsibility of on-going maintenance, as well as the long-term pollution prevention plan, unless other legally-binding agreements are established with another entity.

INSPECTION AND MAINTENANCE REPORT FORM
Zepaj Lane
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TO BE COMPLETED FOR REQUIRED INSPECTIONS AND MAINTENANCE
 AT THE FREQUENCY SPECIFIED IN THE OPERATION AND MAINTENANCE PLAN

Inspector: _____ Date: _____

Inspector's Title: _____

Days Since Last Rainfall: _____ Amount of Last Rainfall: _____

	BMP	BMP Installed at Grade? (circle one)		BMP Maintenance Required or performed? (circle one)		Corrective Action Needed And Notes
		Yes	No	Yes	No	
1	Catch Basin inlets And gas traps	Yes	No	Yes	No	
2	Stormceptor STC900	Yes	No	Yes	No	
3	Isolator Row	Yes	No	Yes	No	
4	Subsurface Detention	Yes	No	Yes	No	
5		Yes	No	Yes	No	
6		Yes	No	Yes	No	
7		Yes	No	Yes	No	

Additional Comments:

LONG TERM POLLUTION PREVENTION PLAN
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- Good housekeeping practices: Prevent or reduce pollutant runoff from the project development through the use of street sweeping, erosion control and catch basin cleaning. It should be noted that we are not seeking credit for TSS removal with street sweeping for this project.
- Provisions for storing materials and waste products inside or under cover: All materials stored on site should be stored in a neat and orderly fashion in their appropriate containers and, if possible, under a roof or other secure enclosure. Waste products should be placed in secure receptacles until they are emptied by a licensed solid waste management company in Massachusetts.
- Vehicle washing controls: The project is comprised of single family house lots; therefore, the responsibility lies with the individual homeowners. The homeowners can prevent soap, scum and oily grit from entering the proposed drainage system by washing vehicles on the grass areas instead of the driveway or street.
- Requirements for routine inspections and maintenance of stormwater BMPs: Follow the guidelines outlined above.

- Spill prevention and response plans:

Prevention: All materials stored on site should be stored in a neat and orderly fashion in their appropriate containers and, if possible, under a roof or other secure enclosure. Products should be kept in their original containers with the original manufacturer's label. Products should not be mixed with one another unless recommended by the manufacturer. If possible, all of the product should be used up before disposing of the container. The Manufacturer's recommendations for proper use and disposal should be followed.

Response: Manufacturer's recommended methods for cleanup should be followed. Spills should be cleaned up immediately after discovery. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance. Spills of toxic or hazardous material shall be reported to the appropriate State and/or local authority in accordance with local and/or State regulations.

- Provisions for maintenance of lawns, gardens, and other landscaped areas: The project is comprised of single family house lots, therefore, these activities should be left up the individual homeowners to schedule and perform.
- Requirements for storage and use of fertilizers, herbicides, and pesticides (Should any questions arise about these materials the Order of Conditions for this project should be consulted if applicable):

Fertilizers: Fertilizers shall be applied in the minimum amounts recommended by the manufacturer. Once applied, fertilizers shall be worked into the soil to limit exposure to stormwater. Storage shall be stored under a roof or other secure enclosure. The contents of any partially used bags of fertilizers shall be transferred to a sealable plastic bag or bin to avoid spills.

Herbicides and Pesticides: Store herbicides and pesticides in original containers that are closed and labeled, in a secure area out of reach of children and pets. Avoid storing in damp areas where containers may become moist or rusty. Herbicides and Pesticides should not be stored near food. Follow the label instructions strictly about where and how much to apply. Do not put herbicides and pesticides in the trash or down the drain. Use rubber gloves when handling and use an appropriate cartridge mask if using products extensively.

- Pet waste management provisions: The project is comprised of single family house lots, therefore, the responsibility lies with the individual homeowners who own pets to perform the clean up and disposal of their pet waste.
- Provisions for operation and management of septic systems: The project is comprised of single family house lots; therefore, the septic systems are privately owned and the responsibility for these activities lies with the individual homeowners to schedule and perform.
- Provisions for solid waste management: Waste products should be placed in secure receptacles until they are emptied by a licensed solid waste management company in Massachusetts.
- Snow disposal and plowing plans relative to Wetland Resource Areas: Snow disposal should be in accordance with the Bureau of Resource Protection Snow Disposal Guidelines, Guideline No. BRPG01-01 effective December 21, 2015, a copy of which is attached.
- Winter Road Salt and/or Sand Use and Storage restrictions:

Road Salt: Use and storage should be in accordance with the Bureau of Resource Protection Drinking Water Program Guidelines on Deicing Chemical (Road Salt) Storage, Guideline No. DWSG97-1 effective December 19, 1997, a copy of which is attached.

Sand: Whenever possible, use of environmentally friendly alternatives, i.e. calcium chloride and sand instead of salt for melting ice should be considered.

- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan: The responsibility lies with the Homeowners Association.

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Effective Date: March 8, 2001

Guideline No. BRPG01-01

Applicability: Applies to all federal, state, regional and local agencies, as well as to private businesses.

Supersedes: BRP Snow Disposal Guideline BRPG97-1 issued 12/19/97, and all previous snow disposal guidance

Approved by: Glenn Haas, Assistant Commissioner for Resource Protection

PURPOSE: To provide guidelines to all government agencies and private businesses regarding snow disposal site selection, site preparation and maintenance, and emergency snow disposal options that are acceptable to the Department of Environmental Protection, Bureau of Resource Protection.

APPLICABILITY: These Guidelines are issued by the Bureau of Resource Protection on behalf of all Bureau Programs (including Drinking Water Supply, Wetlands and Waterways, Wastewater Management, and Watershed Planning and Permitting). They apply to public agencies and private businesses disposing of snow in the Commonwealth of Massachusetts.

INTRODUCTION

Finding a place to dispose of collected snow poses a challenge to municipalities and businesses as they clear roads, parking lots, bridges, and sidewalks. While we are all aware of the threats to public safety caused by snow, collected snow that is contaminated with road salt, sand, litter, and automotive pollutants such as oil also threatens public health and the environment.

As snow melts, road salt, sand, litter, and other pollutants are transported into surface water or through the soil where they may eventually reach the groundwater. Road salt and other pollutants can contaminate water supplies and are toxic to aquatic life at certain levels. Sand washed into waterbodies can create sand bars or fill in wetlands and ponds, impacting aquatic life, causing flooding, and affecting our use of these resources.

There are several steps that communities can take to minimize the impacts of snow disposal on public health and the environment. These steps will help communities avoid the costs of a contaminated water supply, degraded waterbodies, and flooding. Everything we do on the land has the potential to impact our water resources. Given the authority of local government over the use of the land, municipal officials and staff have a critically important role to play in protecting our water resources.

The purpose of these guidelines is to help municipalities and businesses select, prepare, and maintain appropriate snow disposal sites before the snow begins to accumulate through the winter.

RECOMMENDED GUIDELINES

These snow disposal guidelines address: (1) site selection; (2) site preparation and maintenance; and (3) emergency snow disposal.

1. SITE SELECTION

The key to selecting effective snow disposal sites is to locate them adjacent to or on pervious surfaces in upland areas away from water resources and wells. At these locations, the snow meltwater can filter in to the soil, leaving behind sand and debris which can be removed in the springtime. The following areas should be avoided:

- Avoid dumping of snow into any waterbody, including rivers, the ocean, reservoirs, ponds, or wetlands. In addition to water quality impacts and flooding, snow disposed of in open water can cause navigational hazards when it freezes into ice blocks.
- Do not dump snow within a Zone II or Interim Wellhead Protection Area (IWPA) of a public water supply well or within 75 feet of a private well, where road salt may contaminate water supplies.
- Avoid dumping snow on MassDEP-designated high and medium-yield aquifers where it may contaminate groundwater (see the next page for information on ordering maps from MassGIS showing the locations of aquifers, Zone II's, and IWPAs in your community).
- Avoid dumping snow in sanitary landfills and gravel pits. Snow meltwater will create more contaminated leachate in landfills posing a greater risk to groundwater, and in gravel pits, there is little opportunity for pollutants to be filtered out of the meltwater because groundwater is close to the land surface.
- Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A high volume of sand, sediment, and litter released from melting snow also may be quickly transported through the system into surface water.

Site Selection Procedures

1. It is important that the municipal Department of Public Works or Highway Department, Conservation Commission, and Board of Health work together to select appropriate snow disposal sites. The following steps should be taken:
 2. Estimate how much snow disposal capacity is needed for the season so that an adequate number of disposal sites can be selected and prepared.

3. Identify sites that could potentially be used for snow disposal such as municipal open space (e.g., parking lots or parks).
4. Sites located in upland locations that are not likely to impact sensitive environmental resources should be selected first.
5. If more storage space is still needed, prioritize the sites with the least environmental impact (using the site selection criteria, and local or MassGIS maps as a guide).

MassGIS Maps of Open Space and Water Resources

If local maps do not show the information you need to select appropriate snow disposal sites, you may order maps from MassGIS (Massachusetts Geographic Information System) which show publicly owned open spaces and approximate locations of sensitive environmental resources (locations should be field-verified where possible). Different coverages or map themes depicting sensitive environmental resources are available from MassGIS on the map you order. At a minimum, you should order the Priority Resources Map. The Priority Resources Map includes aquifers, public water supplies, MassDEP-approved Zone II's, Interim Wellhead Protection Areas, Wetlands, Open Space, Areas of Critical Environmental Concern, NHESP Wetlands Habitats, MassDEP Permitted Solid Waste facilities, Surface Water Protection areas (Zone A's) and base map features. The cost of this map is \$25.00. Other coverages or map themes you may consider, depending on the location of your city or town, include Outstanding Resource Waters and MassDEP Eelgrass Resources. These are available at \$25.00 each, with each map theme being depicted on a separate map. Maps should be ordered from [MassGIS](#). Maps may also be ordered by fax at 617-626-1249 (order form available from the MassGIS web site) or mail. For further information, contact MassGIS at 617-626-1189.

2. SITE PREPARATION AND MAINTENANCE

In addition to carefully selecting disposal sites before the winter begins, it is important to prepare and maintain these sites to maximize their effectiveness. The following maintenance measures should be undertaken for all snow disposal sites:

- A silt fence or equivalent barrier should be placed securely on the downgradient side of the snow disposal site.
- To filter pollutants out of the meltwater, a 50-foot vegetative buffer strip should be maintained during the growth season between the disposal site and adjacent waterbodies.
- Debris should be cleared from the site prior to using the site for snow disposal.
- Debris should be cleared from the site and properly disposed of at the end of the snow season and no later than May 15.

3. EMERGENCY SNOW DISPOSAL

As mentioned earlier, it is important to estimate the amount of snow disposal capacity you will need so that an adequate number of upland disposal sites can be selected and prepared.

If despite your planning, upland disposal sites have been exhausted, snow may be disposed of near waterbodies. A vegetated buffer of at least 50 feet should still be maintained between the site and the waterbody in these situations. Furthermore, it is essential that the other guidelines for preparing and maintaining snow disposal sites be followed to minimize the threat to adjacent waterbodies.

Under extraordinary conditions, when all land-based snow disposal options are exhausted, disposal of snow that is not obviously contaminated with road salt, sand, and other pollutants may be allowed in certain waterbodies under certain conditions. In these dire situations, notify your Conservation Commission and the appropriate MassDEP Regional Service Center before disposing of snow in a waterbody.

Use the following guidelines in these emergency situations:

- Dispose of snow in open water with adequate flow and mixing to prevent ice dams from forming.
- Do not dispose of snow in saltmarshes, vegetated wetlands, certified vernal pools, shellfish beds, mudflats, drinking water reservoirs and their tributaries, Zone IIs or IWPA's of public water supply wells, Outstanding Resource Waters, or Areas of Critical Environmental Concern.
- Do not dispose of snow where trucks may cause shoreline damage or erosion.
- Consult with the municipal Conservation Commission to ensure that snow disposal in open water complies with local ordinances and bylaws.

FOR MORE INFORMATION

If you need more information, contact one of MassDEP's Regional Service Centers:

Northeast Regional Office, Wilmington, 978-694-3200
Southeast Regional Office, Lakeville, 508-946-2714
Central Regional Office, Worcester, 508-792-7683
Western Regional Office, Springfield, 413-755-2214

or

Call Thomas Maguire of DEP's Bureau of Resource Protection in Boston at 617-292-5602.

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Effective Date: December 19, 1997

Guideline No. DWSG97-1

Applicability: Applies to all parties storing road salt or other chemical deicing agents.

Supersedes: Fact Sheet: DEICING CHEMICAL (ROAD SALT) STORAGE (January 1996)

Approved by: Arleen O'Donnell, Asst. Commissioner for Resource Protection

PURPOSE: To summarize salt storage prohibition standards around drinking water supplies and current salt storage practices.

APPLICABILITY: These guidelines are issued on behalf of the Bureau of Resource Protection's Drinking Water Program. They apply to all parties storing road salt or other chemical deicing agents.

I. The Road Salt Problem:

Historically, there have been incidents in Massachusetts where improperly stored road salt has polluted public and private drinking water supplies. Recognizing the problem, state and local governments have taken steps in recent years to remediate impacted water supplies and to protect water supplies from future contamination. As a result of properly designing storage sheds, new incidents are uncommon. These guidelines summarize salt storage prohibition standards around drinking water supplies and current salt storage practices.

II. Salt Pile Restrictions in Water Supply Protection Areas:

Uncovered storage of salt is forbidden by Massachusetts General Law Chapter 85, section 7A in areas that would threaten water supplies. The Drinking Water Regulations, 310 CMR 22.21(2)(b), also restrict deicing chemical storage within wellhead protection areas (Zone I and Zone II) for public water supply wells, as follows: "storage of sodium chloride, chemically treated abrasives or other chemicals used for the removal of ice and snow on roads [are prohibited], unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate." For drinking water reservoirs, 310 CMR 22.20C prohibits, through local bylaw, uncovered or uncontained storage of road or parking lot de-icing and sanding materials within Zone A at new reservoirs and at those reservoirs increasing their withdrawals under MGL Chapter 21G, the Water Management Act.

For people on a low-sodium diet, 20 mg/L of sodium in drinking water is consistent with the bottled water regulations' meaning of "sodium free." At 20 mg/L, sodium contributes 10% or less to the sodium level in people on a sodium-restricted diet. For more information contact: Catherine Sarafinas at 617-556-1070 or catherine.sarafinas@state.ma.us, or Suzanne Robert at 617-292-5620 or suzanne.robert@state.ma.us.

III. Salt Storage Best Management Practices (BMP):

Components of an "environment-friendly" roadway deicing salt storage facility include:

- the right site = a flat site;
- adequate space for salt piles;
- storage on a pad (impervious/paved area);
- storage under a roof; and
- runoff collection/containment.

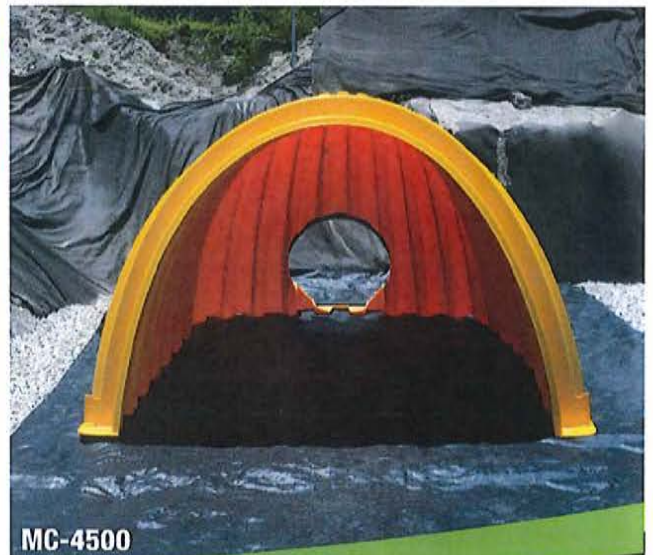
For more information, see The Salt Storage Handbook, 6th ed. Virginia: Salt Institute, 2006 (phone 703-549-4648 or <http://www.saltinstitute.org/publication/safe-and-sustainable-snowfighting/>).

IV. Salt Storage Practices of the Massachusetts Highway Department:

The Massachusetts Highway Department (MHD) has 216 permanent salt storage sheds at 109 locations in the state. On leased land and state land under arteries and ramps, where the MHD cannot build sheds, salt piles are stored under impermeable material. This accounts for an additional 15 sites. The MHD also administers a program to assist municipalities with the construction of salt storage sheds. Of 351 communities, 201 municipalities have used state funds for salt storage facilities.

For more information about MHD's salt storage facilities, contact Paul Brown at the Massachusetts Highway Department, 10 Park Plaza, Boston, MA 02116 (phone 617-973-7792).

Isolator[®] Row O&M Manual



THE ISOLATOR[®] ROW

INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-160LP, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160LP, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the “first flush” and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

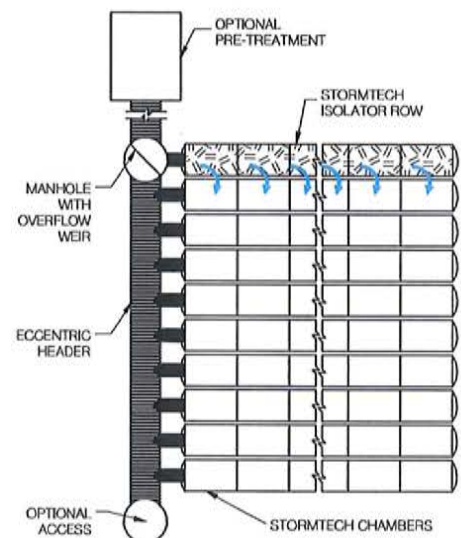
Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.



Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.



StormTech Isolator Row with Overflow Spillway (not to scale)





ISOLATOR ROW INSPECTION/MAINTENANCE

INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

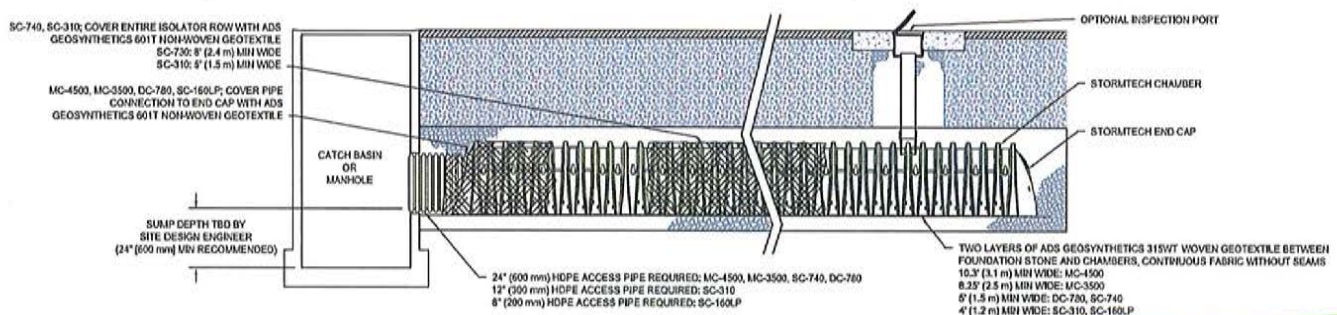
MAINTENANCE

The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45° are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.

StormTech Isolator Row (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row.



ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

STEP 1

Inspect Isolator Row for sediment.

A) Inspection ports (if present)

- i. Remove lid from floor box frame
- ii. Remove cap from inspection riser
- iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.
- iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Rows

- i. Remove cover from manhole at upstream end of Isolator Row
- ii. Using a flashlight, inspect down Isolator Row through outlet pipe
 1. Mirrors on poles or cameras may be used to avoid a confined space entry
 2. Follow OSHA regulations for confined space entry if entering manhole
- iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

STEP 2

Clean out Isolator Row using the JetVac process.

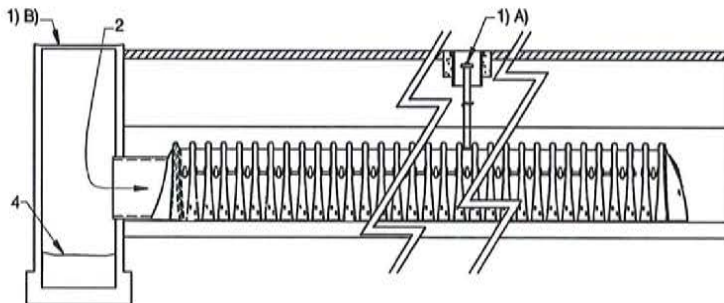
- A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B) Apply multiple passes of JetVac until backflush water is clean
- C) Vacuum manhole sump as required

STEP 3

Replace all caps, lids and covers, record observations and actions.

STEP 4

Inspect & clean catch basins and manholes upstream of the StormTech system.

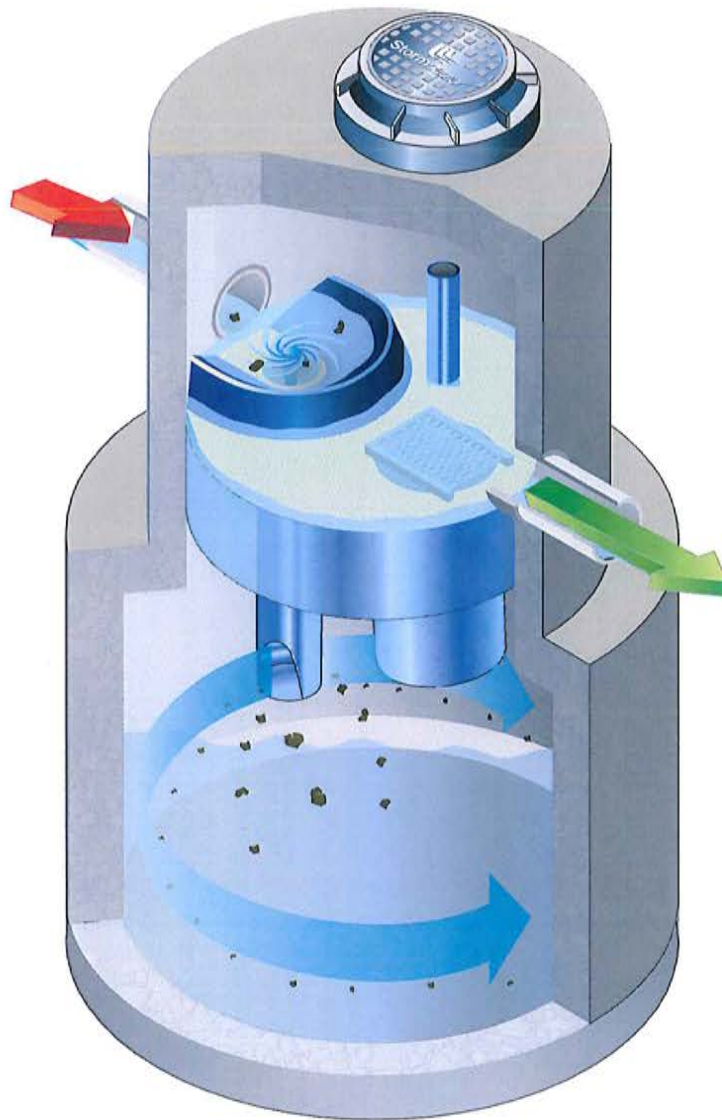


SAMPLE MAINTENANCE LOG

Date	Stadia Rod Readings		Sediment Depth (1)-(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/16/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		6.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

Stormceptor[®]

Owner's Manual



Stormceptor is protected by one or more of the following patents:

Canadian Patent No. 2,137,942

Canadian Patent No. 2,175,277

Canadian Patent No. 2,180,305

Canadian Patent No. 2,180,338

Canadian Patent No. 2,206,338

Canadian Patent No. 2,327,768

U.S. Patent No. 5,753,115

U.S. Patent No. 5,849,181

U.S. Patent No. 6,068,765

U.S. Patent No. 6,371,690

U.S. Patent No. 7,582,216

U.S. Patent No. 7,666,303

Australia Patent No. 693,164

Australia Patent No. 707,133

Australia Patent No. 729,096

Australia Patent No. 779,401

Australia Patent No. 2008,279,378

Australia Patent No. 2008,288,900

Indonesia Patent No. 0007058

Japan Patent No. 3581233

Japan Patent No. 9-11476

Korean Patent No. 0519212

Malaysia Patent No. 118987

New Zealand Patent No. 314,646

New Zealand Patent No. 583,008

New Zealand Patent No. 583,583

South African Patent No. 2010/00682

South African Patent No. 2010/01796

Other Patents Pending

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1 – Stormceptor Overview

2 – Stormceptor Operation & Components

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 Recommended Stormceptor Inspection Procedure

 Recommended Stormceptor Maintenance Procedure

5 – Contact Information (Stormceptor Licensees)

Congratulations!

Your selection of a Stormceptor® means that you have chosen the most recognized and efficient stormwater oil/sediment separator available for protecting the environment. Stormceptor is a pollution control device often referred to as a “Hydrodynamic Separator (HDS)” or an “Oil Grit Separator (OGS)”, engineered to remove and retain pollutants from stormwater runoff to protect our lakes, rivers and streams from the harmful effects of non-point source pollution.

1 – Stormceptor Overview

Stormceptor is a patented stormwater quality structure most often utilized as a treatment component of the underground storm drain network for stormwater pollution prevention. Stormceptor is designed to remove sediment, total suspended solids (TSS), other pollutants attached to sediment, hydrocarbons and free oil from stormwater runoff. Collectively the Stormceptor provides spill protection and prevents non-point source pollution from entering downstream waterways.

Key benefits of Stormceptor include:

- Removes sediment, suspended solids, debris, nutrients, heavy metals, and hydrocarbons (oil and grease) from runoff and snowmelt.
- Will not scour or re-suspend trapped pollutants.
- Provides sediment and oil storage.
- Provides spill control for accidents, commercial and industrial developments.
- Easy to inspect and maintain (vacuum truck).
- “STORMCEPTOR” is *clearly* marked on the access cover (excluding inlet designs).
- Relatively small footprint.
- 3rd Party tested and independently verified.
- Dedicated team of experts available to provide support.

Model Types:

- STC (Standard)
- STF (Fiberglass)
- EOS (Extended Oil Storage)
- OSR (Oil and Sand Removal)
- MAX (Custom designed unit, specific to site)

Configuration Types:

- Inlet unit (accommodates inlet flow entry, and multi-pipe entry)
- In-Line (accommodates multi-pipe entry)
- Submerged Unit (accommodates the site’s tailwater conditions)
- Series Unit (combines treatment in two systems)

Please Maintain Your Stormceptor

To ensure long-term environmental protection through continued performance as originally designed for your site, **Stormceptor must be maintained**, as any stormwater treatment practice does. The need for maintenance is determined through inspection of the Stormceptor. Procedures for inspection are provided within this document. Maintenance of the Stormceptor is performed from the surface via vacuum truck.

If you require information about Stormceptor, or assistance in finding resources to facilitate inspections or maintenance of your Stormceptor please call your local Stormceptor Licensee or Imbrium® Systems.

2 – Stormceptor Operation & Components

Stormceptor is a flexibly designed underground stormwater quality treatment device that is unparalleled in its effectiveness for pollutant capture and retention using patented flow separation technology.

Stormceptor creates a non-turbulent treatment environment below the insert platform within the system. The insert diverts water into the lower chamber, allowing free oils and debris to rise, and sediment to settle under relatively low velocity conditions. These pollutants are trapped and stored below the insert and protected from large runoff events for later removal during the maintenance procedure.

With thousands of units operating worldwide, Stormceptor delivers reliable protection every day, in every storm. The patented Stormceptor design prohibits the scour and release of captured pollutants, ensuring superior water quality treatment and protection during even the most extreme storm events. Stormceptor's proven performance is backed by the longest record of lab and field verification in the industry.

Stormceptor Schematic and Component Functions

Below are schematics of two common Stormceptor configurations with key components identified and their functions briefly described.

Figure 1.

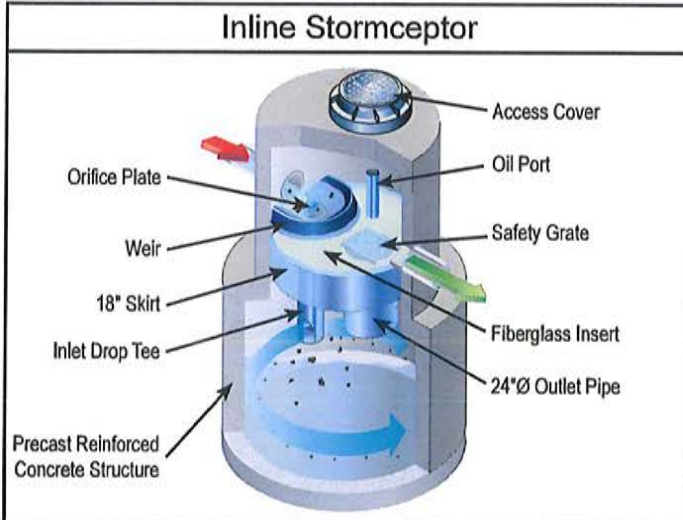
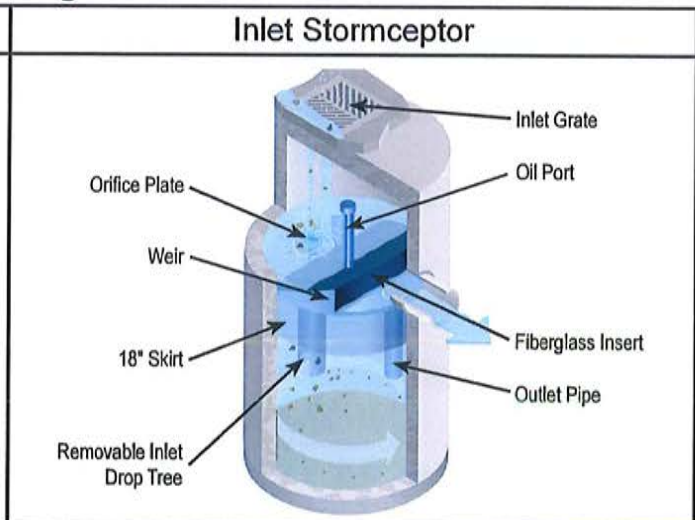


Figure 2.



- **Manhole access cover** – provides access to the subsurface components
- **Precast reinforced concrete structure** – provides the vessel's watertight structural support
- **Fiberglass insert** – separates vessel into upper and lower chambers
- **Weir** – directs incoming stormwater and oil spills into the lower chamber
- **Orifice plate** – prevents scour of accumulated pollutants
- **Inlet drop tee** – conveys stormwater into the lower chamber
- **Fiberglass skirt** – provides double-wall containment of hydrocarbons
- **Outlet riser pipe** – conveys treated water to the upper chamber; primary vacuum line access port for sediment removal
- **Oil inspection port** – primary access for measuring oil depth and oil removal
- **Safety grate** – safety measure to cover riser pipe in the event of manned entry into vessel

3 – Stormceptor Identification

Stormceptor is available in both precast concrete and fiberglass vessels, with precast concrete often being the dominant material of construction.

In the Stormceptor, a patented, engineered fiberglass insert separates the structure into an upper chamber and lower chamber. The lower chamber will remain full of water, as this is where the pollutants are sequestered for later removal. Multiple Stormceptor model (STC, OSR, EOS, MAX and STF) configurations exist, each to be inspected and maintained in a similar fashion.

Each unit is easily identifiable as a Stormceptor by the trade name "Stormceptor" embossed on each access cover at the surface. To determine the location of "inlet" Stormceptor units with horizontal catch basin inlet, look down into the grate as the Stormceptor insert will be visible. The name "Stormceptor" is not embossed on inlet models due to the variability of inlet grates used/ approved across North America.

Once the location of the Stormceptor is determined, the model number may be identified by comparing the measured depth from the fiberglass insert level at the outlet pipe's invert (water level) to the bottom of the tank using **Table 1**.

In addition, starting in 1996 a metal serial number tag containing the model number has been affixed to the inside of the unit, on the fiberglass insert. If the unit does not have a serial number, or if there is any uncertainty regarding the size of the unit using depth measurements, please contact your local Stormceptor Representative for assistance.

Sizes/Models

Typical general dimensions and capacities of the standard precast STC, EOS & OSR Stormceptor models in both USA and Canada/International (excluding South East Asia and Australia) are provided in **Tables 1 and 2**. Typical rim to invert measurements are provided later in this document. The total depth for cleaning will be the sum of the depth from outlet pipe invert (generally the water level) to rim (grade) and the depth from outlet pipe invert to the precast bottom of the unit. Note that depths and capacities may vary slightly between regions.

Table 1A. (US) Stormceptor Dimensions – Insert to Base of Structure

STC Model	Insert to Base (in.)	EOS Model	Insert to Base (in.)	OSR Model	Insert to Base (in.)	Typical STF m (in.)
450	60	4-175	60	65	60	1.5 (60)
900	55	9-365	55	140	55	1.5 (61)
1200	71	12-590	71			1.8 (73)
1800	105	18-1000	105			2.9 (115)
2400	94	24-1400	94	250	94	2.3 (89)
3600	134	36-1700	134			3.2 (127)
4800	128	48-2000	128	390	128	2.9 (113)
6000	150	60-2500	150			3.5 (138)
7200	134	72-3400	134	560	134	3.3 (128)
11000*	128	110-5000*	128	780*	128	
13000*	150	130-6000*	150			
16000*	134	160-7800*	134	1125*	134	

Notes:

1. Depth Below Pipe Inlet Invert to the Bottom of Base Slab can vary slightly by manufacturing facility, and can be modified to accommodate specific site designs, pollutant loads or site conditions. Contact your local representative for assistance.

*Consist of two chamber structures in series.

Table 1B. (CA & Int'l) Stormceptor Dimensions – Insert to Base of Structure

STC Model	Insert to Base (m)	EOS Model	Insert to Base (m)	OSR Model	Insert to Base (m)	Typical STF m (in.)
300	1.5	300	1.5	300	1.7	1.5 (60)
750	1.5	750	1.5	750	1.6	1.5 (61)
1000	1.8	1000	1.8			1.8 (73)
1500	2.8					2.9 (115)
2000	2.8	2000	2.8	2000	2.6	2.3 (89)
3000	3.7	3000	3.7			3.2 (127)
4000	3.4	4000	3.4	4000	3.6	2.9 (113)
5000	4.0	5000	4.0			3.5 (138)
6000	3.7	6000	3.7	6000	3.7	3.3 (128)
9000*	3.4	9000*	3.4	9000*	3.6	
11000*	4.0	10000*	4.0			
14000*	3.7	14000*	3.7	14000*	3.7	

Notes:

1. Depth Below Pipe Inlet Invert to the Bottom of Base Slab can vary slightly by manufacturing facility, and can be modified to accommodate specific site designs, pollutant loads or site conditions. Contact your local representative for assistance.

*Consist of two chamber structures in series.

Table 2A. (US) Storage Capacities

STC Model	Hydrocarbon Storage Capacity gal	Sediment Capacity ft ³	EOS Model	Hydrocarbon Storage Capacity gal	OSR Model	Hydrocarbon Storage Capacity gal	Sediment Capacity ft ³
450	86	46	4-175	175	065	115	46
900	251	89	9-365	365	140	233	58
1200	251	127	12-590	591			
1800	251	207	18-1000	1198			
2400	840	205	24-1400	1457	250	792	156
3600	840	373	36-1700	1773			
4800	909	543	48-2000	2005	390	1233	465
6000	909	687	60-2500	2514			
7200	1059	839	72-3400	3418	560	1384	690
11000*	2797	1089	110-5000*	5023	780*	2430	930
13000*	2797	1374	130-6000*	6041			
16000*	3055	1677	160-7800*	7850	1125*	2689	1378

Notes:

1. Hydrocarbon & Sediment capacities can be modified to accommodate specific site design requirements, contact your local representative for assistance.

*Consist of two chamber structures in series.

Table 2B. (CA & Int'l) Storage Capacities

STC Model	Hydrocarbon Storage Capacity L	Sediment Capacity L	EOS Model	Hydrocarbon Storage Capacity L	OSR Model	Hydrocarbon Storage Capacity L	Sediment Capacity L
300	300	1450	300	662	300	300	1500
750	915	3000	750	1380	750	900	3000
1000	915	3800	1000	2235			
1500	915	6205					
2000	2890	7700	2000	5515	2000	2790	7700
3000	2890	11965	3000	6710			
4000	3360	16490	4000	7585	4000	4700	22200
5000	3360	20940	5000	9515			
6000	3930	26945	6000	12940	6000	5200	26900
9000*	10555	32980	9000*	19010	9000*	9300	33000
11000*	10555	37415	10000*	22865			
14000*	11700	53890	14000*	29715	14000*	10500	53900

Notes:

1. Hydrocarbon & Sediment capacities can be modified to accommodate specific site design requirements, contact your local representative for assistance.

*Consist of two chamber structures in series.

4 – Stormceptor Inspection & Maintenance

Regular inspection and maintenance is a proven, cost-effective way to maximize water resource protection for all stormwater pollution control practices, and is required to insure proper functioning of the Stormceptor. Both inspection and maintenance of the Stormceptor is easily performed from the surface. Stormceptor's patented technology has no moving parts, simplifying the inspection and maintenance process.

Please refer to the following information and guidelines before conducting inspection and maintenance activities.

When is inspection needed?

- Post-construction inspection is required prior to putting the Stormceptor into service.
- Routine inspections are recommended during the first year of operation to accurately assess the sediment accumulation.
- Inspection frequency in subsequent years is based on the maintenance plan developed in the first year.
- Inspections should also be performed immediately after oil, fuel, or other chemical spills.

When is maintenance cleaning needed?

- For optimum performance, the unit should be cleaned out once the sediment depth reaches the recommended maintenance sediment depth, which is approximately 15% of the unit's total storage capacity (see **Table 2**). The frequency should be adjusted based on historical inspection results due to variable site pollutant loading.

- Sediment removal is easier when removed on a regular basis at or prior to the recommended maintenance sediment depths, as sediment build-up can compact making removal more difficult.
- The unit should be cleaned out immediately after an oil, fuel or chemical spill.

What conditions can compromise Stormceptor performance?

- If construction sediment and debris is not removed prior to activating the Stormceptor unit, maintenance frequency may be reduced.
- If the system is not maintained regularly and fills with sediment and debris beyond the capacity as indicated in **Table 2**, pollutant removal efficiency may be reduced.
- If an oil spill(s) exceeds the oil capacity of the system, subsequent spills may not be captured.
- If debris clogs the inlet of the system, removal efficiency of sediment and hydrocarbons may be reduced.
- If a downstream blockage occurs, a backwater condition may occur for the Stormceptor and removal efficiency of sediment and hydrocarbons may be reduced.

What training is required?

The Stormceptor is to be inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. For typical inspection and maintenance activities, no specific supplemental training is required for the Stormceptor. Information provided within this Manual (provided to the site owner) contains sufficient guidance to maintain the system properly.

In unusual circumstances, such as if a damaged component needs replacement or some other condition requires manned entry into the vessel, confined space entry procedures must be followed. Only professional maintenance service providers trained in these procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

What equipment is typically required for inspection?

- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones and caution tape
- Hard hat, safety shoes, safety glasses, and chemical-resistant gloves

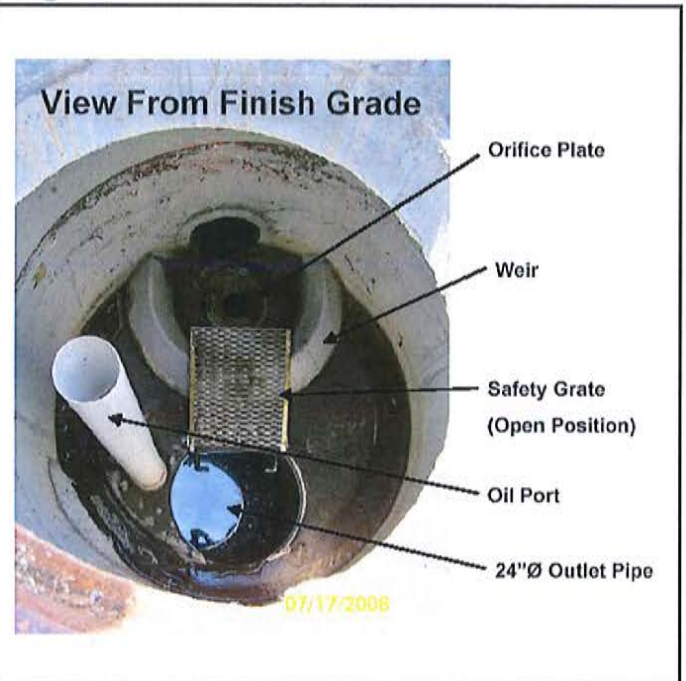
Recommended Stormceptor Inspection Procedure:

- Stormceptor is to be inspected from grade through a standard surface manhole access cover.
- Sediment and oil depth inspections are performed with a sediment probe and oil dipstick.
- Oil depth is measured through the oil inspection port, either a 4-inch (100 mm) or 6-inch (150 mm) diameter port.
- Sediment depth can be measured through the oil inspection port or the 24-inch (610 mm) diameter outlet riser pipe.
- Inspections also involve a visual inspection of the internal components of the system.

Figure 3.



Figure 4.



What equipment is typically required for maintenance?

- Vacuum truck equipped with water hose and jet nozzle
- Small pump and tubing for oil removal
- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically 3/4-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones
- Hard hats, safety shoes, safety glasses, chemical-resistant gloves, and hearing protection for service providers
- Gas analyzer, respiratory gear, and safety harness for specially trained personnel if confined space entry is required

Recommended Stormceptor Maintenance Procedure

Maintenance of Stormceptor is performed using a vacuum truck.

No entry into the unit is required for maintenance. **DO NOT ENTER THE STORMCEPTOR CHAMBER** unless you have the proper personal safety equipment, have been trained and are qualified to enter a confined space, as identified by local Occupational Safety and Health Regulations (e.g. 29 CFR 1910.146 or Canada Occupational Safety and Health Regulations – SOR/86-304). Without the proper equipment, training and permit, entry into confined spaces can result in serious bodily harm and potentially death. Consult local, provincial, and/or state regulations to determine the requirements for confined space entry. Be aware, and take precaution that the Stormceptor fiberglass insert may be slippery. In addition, be aware that some units do not have a safety grate to cover the outlet riser pipe that leads to the submerged, lower chamber.

- Ideally maintenance should be conducted during dry weather conditions when no flow is entering the unit.
- Stormceptor is to be maintained through a standard surface manhole access cover.
- Insert the oil dipstick into the oil inspection port. If oil is present, pump off the oil layer into separate containment using a small pump and tubing.
- Maintenance cleaning of accumulated sediment is performed with a vacuum truck.
 - For 6-ft (1800 mm) diameter models and larger, the vacuum hose is inserted into the lower chamber via the 24-inch (610 mm) outlet riser pipe.
 - For 4-ft (1200 mm) diameter model, the removable drop tee is lifted out, and the vacuum hose is inserted into the lower chamber via the 12-inch (305 mm) drop tee hole.

Figure 5.

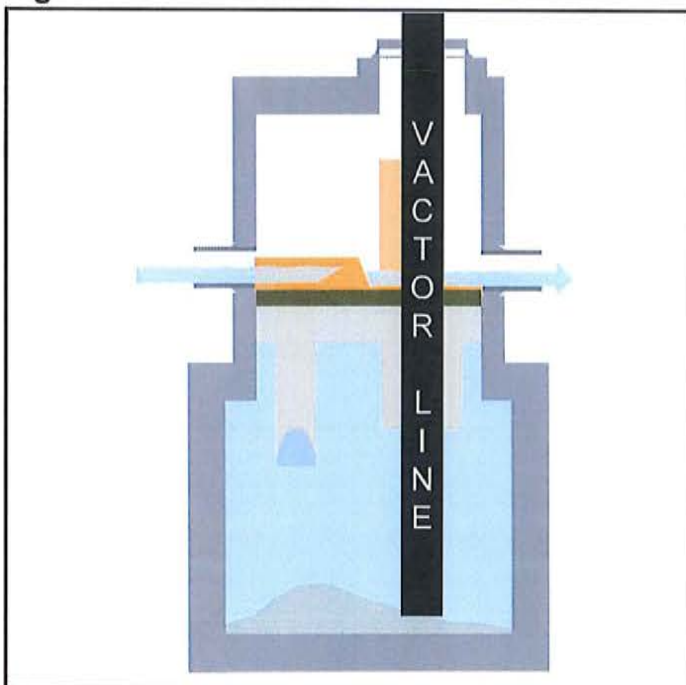
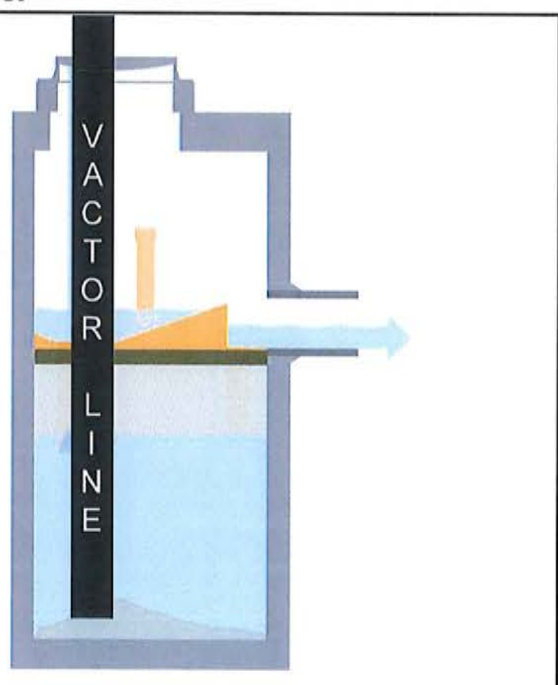


Figure 6.



- Using the vacuum hose, decant the water from the lower chamber into a separate containment tank or to the sanitary sewer, if permitted by the local regulating authority.
- Remove the sediment sludge from the bottom of the unit using the vacuum hose. For large Stormceptor units, a flexible hose is often connected to the primary vacuum line for ease of movement in the lower chamber.
- Units that have not been maintained regularly, have surpassed the maximum recommended sediment capacity, or contain damaged components may require manned entry by trained personnel using safe and proper confined space entry procedures.

Figure 7.



Figure 8.



A maintenance worker stationed at the above ground surface uses a vacuum hose to evacuate water, sediment, and debris from the system.

What is required for proper disposal?

The requirements for the disposal of material removed from Stormceptor units are similar to that of any other stormwater treatment Best Management Practices (BMP). Local guidelines should be consulted prior to disposal of the separator contents. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste. This could be site and pollutant dependent. In some cases, approval from the disposal facility operator/agency may be required.

What about oil spills?

Stormceptor is often implemented in areas where there is high potential for oil, fuel or other hydrocarbon or chemical spills. Stormceptor units should be cleaned immediately after a spill occurs by a licensed liquid waste hauler. You should also notify the appropriate regulatory agencies as required in the event of a spill.

What if I see an oil rainbow or sheen at the Stormceptor outlet?

With a steady influx of water with high concentrations of oil, a sheen may be noticeable at the Stormceptor outlet. This may occur because a hydrocarbon rainbow or sheen can be seen at

very small oil concentrations (< 10 ppm). Stormceptor is effective at removing 95% of free oil, and the appearance of a sheen at the outlet with high influent oil concentrations does not mean that the unit is not working to this level of removal. In addition, if the influent oil is emulsified, the Stormceptor will not be able to remove it. The Stormceptor is designed for free oil removal and not emulsified or dissolved oil conditions.

What factors affect the costs involved with inspection/maintenance?

The Vacuum Service Industry for stormwater drainage and sewer systems is a well-established sector of the service industry that cleans underground tanks, sewers and catch basins. Costs to clean Stormceptor units will vary. Inspection and maintenance costs are most often based on unit size, the number of units on a site, sediment/oil/hazardous material loads, transportation distances, tipping fees, disposal requirements and other local regulations.

What factors predict maintenance frequency?

Maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, site activity and use, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. If the sediment load is high from an unstable site or sediment loads transported from upstream catchments, maintenance may be required semi-annually. Conversely once a site has stabilized, maintenance may be required less frequently (for example: two to seven year, site and situation dependent). Maintenance should be performed immediately after an oil spill or once the sediment depth in Stormceptor reaches the value specified in **Table 3** based on the unit size.

Table 3A. (US) Recommended Sediment Depths Indicating Maintenance

STC Model	Maintenance Sediment depth (in)	EOS Model	Maintenance Sediment depth (in)	Oil Storage Depth (in)	OSR Model	Maintenance Sediment depth (in)
450	8	4-175	9	24	065	8
900	8	9-365	9	24	140	8
1200	10	12-590	11	39		
1800	15					
2400	12	24-1400	14	68	250	12
3600	17	36-1700	19	79		
4800	15	48-2000	16	68	390	17
6000	18	60-2500	20	79		
7200	15	72-3400	17	79	560	17
11000*	17	110-5000*	16	68	780*	17
13000*	20	130-6000*	20	79		
16000*	17	160-7800*	17	79	1125*	17

Note:

1. The values above are for typical standard units.

*Per structure.

Table 3B. (CA & Int'l) Recommended Sediment Depths Indicating Maintenance

STC Model	Maintenance Sediment depth (mm)	EOS Model	Maintenance Sediment depth (mm)	Oil Storage Depth (mm)	OSR Model	Maintenance Sediment depth (mm)
300	225	300	225	610	300	200
750	230	750	230	610	750	200
1000	275	1000	275	990		
1500	400					
2000	350	2000	350	1727	2000	300
3000	475	3000	475	2006		
4000	400	4000	400	1727	4000	375
5000	500	5000	500	2006		
6000	425	6000	425	2006	6000	375
9000*	400	9000*	400	1727	9000*	425
11000*	500	10000*	500	2006		
14000*	425	14000*	425	2006	14000*	425

Note:

1. The values above are for typical standard units.

*Per structure.

Replacement parts

Since there are no moving parts during operation in a Stormceptor, broken, damaged, or worn parts are not typically encountered. Therefore, inspection and maintenance activities are generally focused on pollutant removal. However, if replacements parts are necessary, they may be purchased by contacting your local Stormceptor Representative, or Imbrium Systems.

The benefits of regular inspection and maintenance are many – from ensuring maximum operation efficiency, to keeping maintenance costs low, to the continued protection of natural waterways – and provide the key to Stormceptor’s long and effective service life.

Stormceptor Inspection and Maintenance Log

Stormceptor Model No: _____

Allowable Sediment Depth: _____

Serial Number: _____

Installation Date: _____

Location Description of Unit: _____

Other Comments: _____

Contact Information

Questions regarding the Stormceptor can be addressed by contacting your area Stormceptor Licensee, Imbrium Systems, or visit our website at www.stormceptor.com.

Stormceptor Licensees:

CANADA

Lafarge Canada Inc.
www.lafargepipe.com
403-292-9502 / 1-888-422-4022
780-468-5910
204-958-6348

Calgary, AB
Edmonton, AB
Winnipeg, MB, NW, ON, SK

Langley Concrete Group
www.langleyconcretegroup.com
604-502-5236

BC

Hanson Pipe & Precast Inc.
www.hansonpipeandprecast.com
519-622-7574 / 1-888-888-3222

ON

Lécuyer et Fils Ltée.
www.lecuyerbeton.com
450-454-3928 / 1-800-561-0970

QC

Strescon Limited
www.strescon.com
902-494-7400
506-633-8877

NS, NF
NB, PE

UNITED STATES

Rinker Materials
www.rinkerstormceptor.com
1-800-909-7763

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www.stormceptor.com