STATE OF GEORGIA **CITY OF POWDER SPRINGS**

Maintenance Agreement

WHEREAS, the Property Owner, The Douglas Assets Company, recognizes that the wet or extended detention facility or facilities (hereinafter referred to as "the facility" or "facilities") must be maintained for the development called, The Gates of Powder Springs Townhomes , located in Land Lot(s) 875 of the 19th District, 2nd Section in Cobb County, Georgia; and,

WHEREAS, the Property Owner is the owner of real property more particularly described on the attached Exhibit A (hereinafter referred to as "the Property"), and,

WHEREAS, City of Powder Springs (hereinafter referred to as "the City") and the Property Owner, or its administrators, executors, successors, heirs, or assigns, agree that the health, safety and welfare of the citizens of the County require that the facilities be constructed and maintained on the property, and,

WHEREAS, the Development Regulations require that facility or facilities as shown on the approved development plans and specifications be constructed and maintained by the Property Owner, its administrators, executors, successors, heirs, or assigns.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

SECTION 1.

The facility or facilities shall be constructed by the Property Owner in accordance with the plans and specifications for the development.

SECTION 2.

The Property Owner, its administrators, executors, successors, heirs or assigns shall maintain the facility or facilities in good working condition acceptable to the City and in accordance with the schedule of long term maintenance activities agreed hereto and attached as Exhibit B.

SECTION 3.

The Property Owner, its administrators, executors, successors, heirs or assigns hereby grants permission to the City, its authorized agents and employees, to enter upon the property and to inspect the facilities whenever the City deems necessary. Whenever possible, the City shall provide 3 days notice prior to entry. The Property Owner shall execute an access easement in favor of the City to allow the City to inspect, observe, maintain, and repair the facility as deemed neces-sary. A fully executed original easement is attached to this Agreement as Exhibit C and by refer-ence made a part hereof.

SECTION 4.

In the event the Property Owner, its administrators, executors, successors, heirs or assigns fails to maintain the facility or facilities as shown on the approved plans and specifications in good working order acceptable to the City and in accordance with the maintenance schedule incorporated in this Agreement, the City shall provide the Property Owner written notice of the failure. The City, with due notice, may enter the property and take all reasonable steps it deems necessary to return the facility or facilities to good working order in the event the Property Owner fails to remedy the failure(s) within 2 weeks of receipt of the City's written notice. This provision shall not be construed to allow the City to erect any structure of a permanent nature on the property. It is expressly understood and agreed that the City is under no obligation to maintain or repair the facility or facilities and in no event shall this Agreement be construed to impose any such obligation on the City.

SECTION 5.

In the event the City, pursuant to the Agreement, performs work of any nature, or expends any funds in the performance of said work for labor, use of equipment, supplies, materials, and the like, the Property Owner shall reimburse the City, or shall forfeit any required bond upon demand within thirty (30) days of receipt thereof for all the costs incurred by the City hereunder. If not paid within the prescribed time period, the City shall secure a lien against the real property in the amount of such costs. The actions described in this section are in addition to and not in lieu of any and all legal remedies available to the City as a result of the Property Owner's failure to maintain the facility or facilities.

SECTION 6.

It is the intent of this agreement to insure the proper maintenance of the facility or facilities by the Property Owner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability of any party for damage alleged to result from or caused by storm water runoff.

SECTION 7.

Sediment accumulation resulting from the normal operation of the facility or facilities will be catered for. The Property Owner will make accommodation for the removal and disposal of all accumulated sediments. Disposal will be provided onsite in a reserved area(s) or will be removed from the site. Reserved area(s) shall be sufficient to accommodate for a minimum of two dredging cycles.

SECTION 8.

The Property Owner shall provide the City with a bond or a letter of credit providing for the maintenance of the facility or facilities pursuant to the City's Development Regulations concerning Maintenance Agreements.

SECTION 9.

The Property Owner shall use the standard BMP Operation and Maintenance Inspection Report attached to this agreement as Exhibit D and by this reference made a part hereof for the purpose of a minimal annual inspection of the facility or facilities by a qualified inspector.

SECTION 10.

The Property Owner, its administrators, executors, successors, heirs and assigns hereby indemnifies and holds harmless the City and its authorized agents and employees for any and all damages, accidents, casualties, occurrences or claims which might arise or be asserted against the City from the construction, presence, existence or maintenance of the facility or facilities by the Property Owner or the City. In the event a claim is asserted against the City, its authorized agents or employees, the City shall promptly notify the Property Owner and the Property Owner shall defend at its own expense any suit based on such claim. If any judgement or claims against the City, its authorized agents or employees shall be allowed, the Property Owner shall pay for all costs and expenses in connection herewith.

SECTION 11.

This Agreement shall be recorded among the deed records of the Clerk of Superior Court of Cobb County and shall constitute a covenant running with the land and shall be binding on the Property Owner, its administrators, executors, heirs, assigns and any other successors in interest.

SECTION 12.

This Agreement may be enforced by proceedings at law or in equity by or against the parties hereto and their respective successors in interest.

SECTION 13.

Invalidation of any one of the provisions of this Agreement shall in no way effect any other provisions and all other provisions shall remain in full force and effect.

MAINTENANCE AGREEMENT

SO AGREED this 25th day of May, 2023.

PROPERTY OWNER
CORPORATION

Name of Corporation: The Douglas Assets Company, A Georgia Corporation
Printed or Typed Name

BY: _____ Attest: _____
Signature Signature of Witness

JEFF XIE Jewel Liu
Typed or Printed Name Typed or Printed Name

Title: VP Title: _____
(President or Vice President) (Corporate Secretary or Corporate Secretary Assistant)

(CORPORATE SEAL)

LANH PHAN NOTARY PUBLIC GWINNETT COUNTY, GEORGIA MY COMMISSION EXPIRES NOVEMBER 16, 2024

_____
(Notary Public)

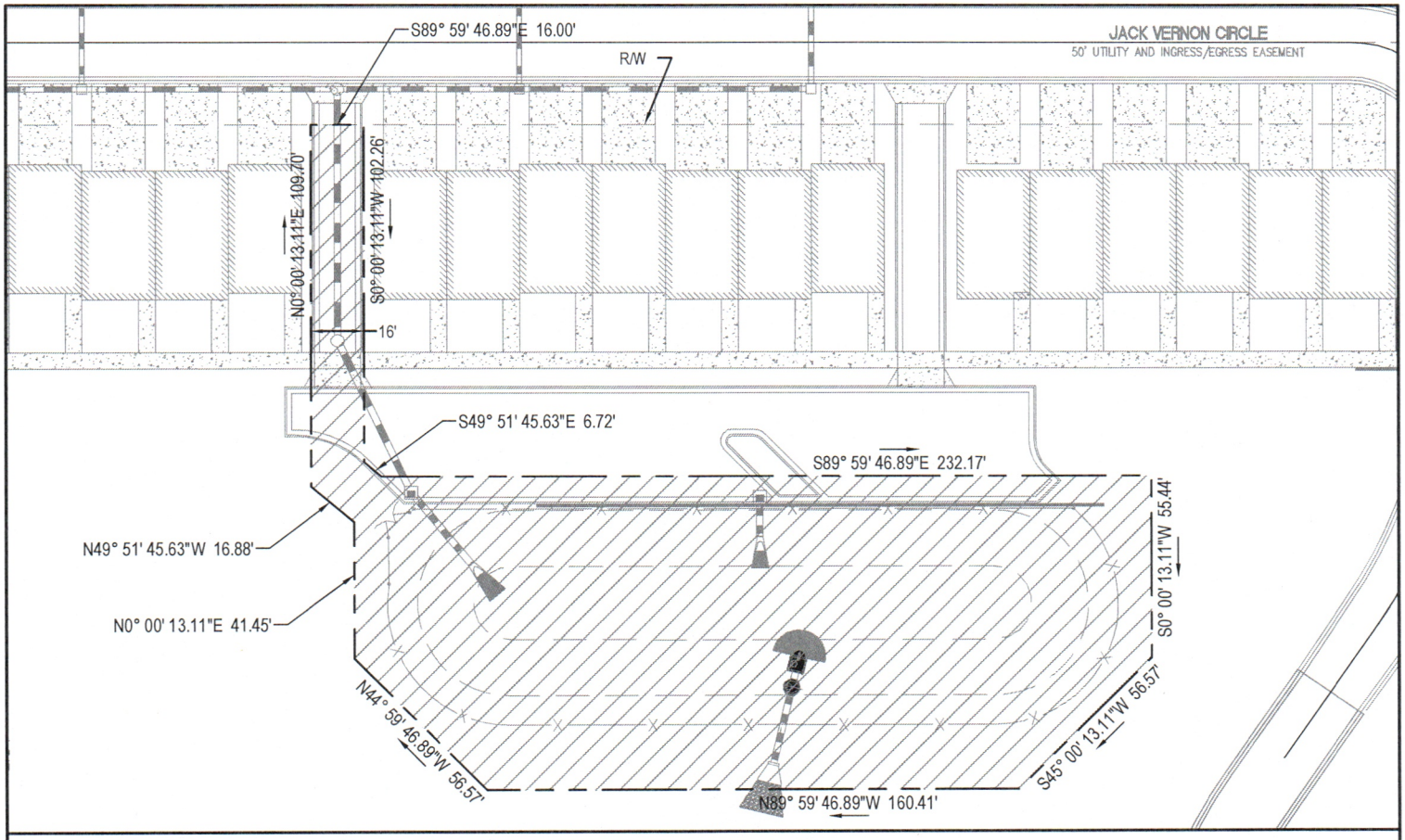
(Notary Seal)

City of Powder Springs, GEORGIA.

By: _____
Stormwater Management

Attachments:

Exhibit A (Plat)
Exhibit B (Maintenance and Inspection Schedule)
Exhibit C (Access Easement)
Exhibit D (Standard BMP Operation and Maintenance Inspection Report)



GEORGIA
REGISTERED
No. 019675
PROFESSIONAL
ENGINEER
NGAN M. KONG

qTech Engineering
330 NEWINGTON CT.
JOHNS CREEK, GA 30022

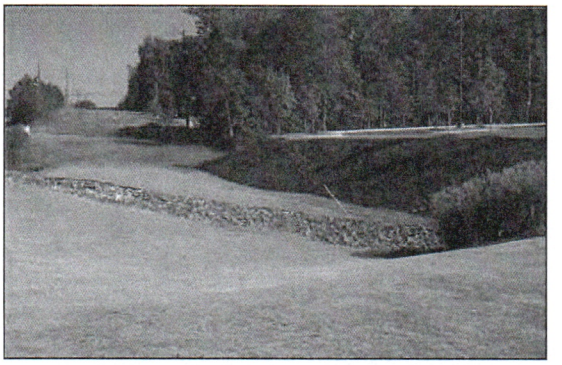
ACCESS EASEMENT PLAT FOR DETENTION FACILITY
THE GATE OF POWDER SPRINGS TOWNHOMES

4401 PINEVIEW DR.
POWDER SPRINGS, GA 30127
LL 875, 19th District
Cobb County, Georgia
ZONE CBD

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

EXHIBIT B
Maintenance and Inspection Schedule

Dry Extended Detention Basins



A dry extended detention basin provides temporary storage of stormwater runoff to control the peak rate of runoff by allowing the stored water to release slowly over a period of time. This practice is mostly used to control water quantity, although some water quality benefits can be obtained by the settling of floatables and sediment. This extended version of a dry detention basin is designed to maximize water quality benefits.

There are some common problems to be aware of when maintaining a dry extended detention basin. They include, but are not limited to, the following:

- Sediment build-up
- Trash, litter, and debris accumulation
- Clogging in the inlet and outlet structures
- Erosion
- Structural repairs to inlets and outlets
- Mowers compacting and rutting the basin bottom
- Clogging in the emergency spillway
- Mosquitoes breeding in the practice

Routine maintenance should be performed on dry extended detention basins to ensure that the structure is properly functioning. Note that during the first year the dry extended detention basin is built, maintenance may be required at a higher frequency to ensure the proper establishment of vegetation in the practice. In the event of snow, check to make sure that the materials used to de-ice the surrounding areas stay out of the practice to avoid clogging and further pollution.

Inspect the dry extended detention basin after a large rainstorm. Keep drainage paths (both to and from the BMP) clean so that the water can properly flow into the basin. If the dry extended detention basin is not draining properly, check for clogging of the inflow and outflow structures.

If the forebay or dry detention basin has received a significant amount of sediment over a period of time, then the sediment at the bottom of the forebay or dry detention basin may need to be removed. Accumulated sediment in the practice decreases the available storage volume and affects the basin's ability to function as it was designed.

The table on the next page shows a schedule for when different maintenance activities should be performed on the dry extended detention basin.

Dry Extended Detention Basin Typical Routine Maintenance Activities and Schedule

Activity	Schedule
• Remove trash, sediment, and debris from forebay and inlet and outlet structures. • Mow the embankment and maintenance access. Periodically mow along maintenance rights-of-ways and the embankment. Remove grass clippings.	Monthly or as needed
• Repair and re-vegetate eroded areas. • Remove and dispose of vegetation that may hinder the operation of the pond. • Perform structural repairs to pond, outlet structures, embankments, control gates, valves, or other mechanical devices.	As needed
• Remove sediment when volume of pond is significantly reduced.	As needed (roughly every 20-50 years, but will vary based on the characteristics of the drainage area and amount of sediment entering the practice)

Dry Extended Detention Basin					
Inspection Item	Condition				Comment
	Good	Marginal	Poor	N/A*	
General Inspection					
Access to the site is adequately maintained for inspection and maintenance.					
Area is clean (trash, debris, grass clippings, etc. removed).					
Inlet/Outlet Structure					
Drainage ways to and from the practice is free of trash, debris, large branches, etc.					
Area around the inlet/outlet structure is mowed and grass clippings are removed.					
No evidence of gullies, rills, or excessive erosion around the inlet/outlet structure.					
Water is going through structure (i.e. no evidence of water going around the structure).					
No signs of significant sediment accumulation.					
Concrete is in good condition. No signs of cracks.					
Main Treatment					
Main treatment area is free of trash, debris, and sediment.					
Vegetation seems healthy. No signs of bare spots or dead vegetation.					
No signs of undesirable vegetation growth.					
No signs of excessive sedimentation.					
No signs of pollution draining into the practice (oil sheens, discolored or unnatural water, odor, etc.).					
Embankment and Emergency Overflow					
Emergency overflow is free of trash, debris, and sediment.					
No evidence of erosion, scour, or flooding around the structure.					
Erosion protection is present on site (i.e. turf reinforcement mats). Comment on types of erosion protection and evaluate condition.					
No signs of animal activity in embankment.					
No signs of seepage on downstream side of embankment.					

Dry Extended Detention Basin					
Inspection Item	Condition				Comment
	Good	Marginal	Poor	N/A*	
No signs structural deformation of embankment.					
No obstructions in spillway.					
Results					
Overall condition of Dry Extended Detention Basin:					
Additional Comments					
Notes: *If a specific maintenance item was not checked, please explain why in the appropriate comment box.					

EXHIBIT 'C'

PERMANENT WATER QUALITY BMP AND ACCESS EASEMENT AGREEMENT

STATE OF GEORGIA

City of Powder Springs

THIS EASEMENT granted this ____ day of _____, 20___

between the property owner The Douglas Assets Company as party of the first part, hereinafter referred to as Grantor, and City of Powder Springs, a political subdivision of the State of Georgia, as party of the second part, hereinafter referred to as Grantee.

WITNESSETH THAT: Grantor, for and in consideration of the sum of ONE DOLLAR ($1.00) in hand paid at and before the sealing and delivery of this easement and in consideration of the agreements and covenants contained in this document and the Maintenance Agreement between Grantor and Grantee, hereby grants unto the Grantee an easement in and to that portion of the property shown on Exhibit "A" to the Maintenance Agreement, as shown and identified on the plat attached hereto as Exhibit "1".

The purpose of this easement is to allow Grantee, or its agents, access for maintenance activities to the Water Quality Best Management Practice (BMP) facility, and to prevent development of the property within the easement following issuance of the Certificate of Occupancy or in the case of a residential subdivision, the approval of the Final Plat, without written permission from the Gwinnett County Department of Public Utilities. This easement is required by the provisions of the Maintenance Agreement executed by and between the Grantor and Grantee.

PERMANENT WATER QUALITY BMP AND ACCESS EASEMENT AGREEMENT

SO AGREED this _____ day of _____, 20_____.

PROPERTY OWNER
CORPORATION

Name of Corporation: The Douglas Assets Company, A Georgia Corporation
Printed or Typed Name

By: _____
Signature

_____
Printed or Typed Name

Title: _____
(President or Vice President)

Attest: _____
Signature of Witness

_____
Printed or Typed Name

Title: _____
(Corporate Secretary or
Corporate Secretary Assistant

(CORPORATE SEAL)

_____
(Notary Public)

(Notary Seal)

Attachments: Exhibit 1 (Plat of Easement)

EXHIBIT 'D'

City of Powder Springs

BMP Facility Operation and Maintenance Inspection Report for Pond Facilities

Inspector Name _____ Community _____

Inspection Date _____ Address _____

Type of BMP _____

Watershed _____ Tax Map _____

ITEM INSPECTED	CHECKED Yes	CHECKED No	MAINTENANCE Reqd.	MAINTENANCE Not Reqd.	OBSERVATIONS & REMARKS
I. POND FACILITIES A. Pond Dam Embankments					
1. Vegetation and Ground Cover Adequate					
2. Surface Erosion					
3. Animal Burrows					
4. Unauthorized Planting					
5. Cracking, Bulging, or Sliding of Dam					
a. Upstream Face					
b. Downstream Face					
c. At or Beyond Toe					
Upstream					
Downstream					
d. Riser Weir Opening					
6. Pond, Toe & Chimney Drains Clear & Funct.					
7. Seeps/Leaks on Downstream Face.					

ITEM INSPECTED	CHECKED Yes	No	MAINTENANCE Reqd.	Not Reqd.	OBSERVATIONS & REMARKS
8. Slope Protection or Riprap Failures					
9. Vertical and Horizontal Alignment of Top of Dam as Per "As-Built" Plans					
10. Riser Weir Opening Clear of Obstructions and Debris					
11. Other (Specify)					
B. Riser and Principal Spillway Type: Reinforced Concrete Corrugated Pipe Masonry *Indicates Dry Ponds Only 1.* Low Flow Orifice Obstructed					
2.* Low Flow Trash Rack					
a. Debris Removal Necessary b. Corrosion Control					
3. Weir Trash Rack Maintenance					
a. Debris Removal Necessary					
b. Corrosion Control					
4. Excessive Sediment Accumulation Inside Riser					
5. Concrete/Masonry Condition Riser & Barrels					
a. Cracks or Displacement					
b. Minor Spalling (<1")					
c. Major Spalling (Rebars Exposed)					
d. Joint Failures					
e. Water Tightness					
6. Metal Pipe Condition					
7. Control Valve					
a. Operational/Exercised					
b. Chained and Locked					

ITEM INSPECTED	CHECKED Yes	No	MAINTENANCE Reqd.	Not Reqd.	OBSERVATIONS & REMARKS
8. Pond Drain Valve					
a. Operational/Exercised					
b. Chained and Locked					
9. Outfall Channels Functioning					
10. Other (Specify)					
C. Permanent Pool - Wet Ponds					
1. Undesirable Vegetative Growth					
2. Floating or Floatable Debris Removal Required					
3. Visible Pollution					
4. Shoreline Problems					
5. Other (Specify)					
D. Dry Pool Areas - Dry Pond					
1. Vegetation Adequate					
2. Undesirable Vegetative Growth					
3. Undesirable Woody Growth					
4. Low Flow Channels Clear of Obstructions					
5. Standing Water or Wet Spots					
6. Sediment and/or Trash Accumulation					
7. Other (Specify)					
E. Condition of Outfalls into Pond Area					
1. Rip Rap Failures					
2. Slope Invert Erosion					
3. Storm Drain Pipes					
4. Endwalls/Headwalls					
5. Other (Specify)					

ITEM INSPECTED	CHECKED Yes	No	MAINTENANCE Reqd.	Not Reqd.	OBSERVATIONS & REMARKS
F. Other					
1. Encroachments on Pond or Easement Area (Be Specific)					
2. Complaints from Local Residents (Describe on Back)			N/A	N/A	
3. Aesthetics					
a. Grass Mowing Reqd.					
b. Graffiti Removal Reqd.					
c. Other					
4. Public Hazards (Be Specific)					
5. Maintenance Access					

SUMMARY

1. Inspector's Remarks:_____

_____

_____

_____

_____

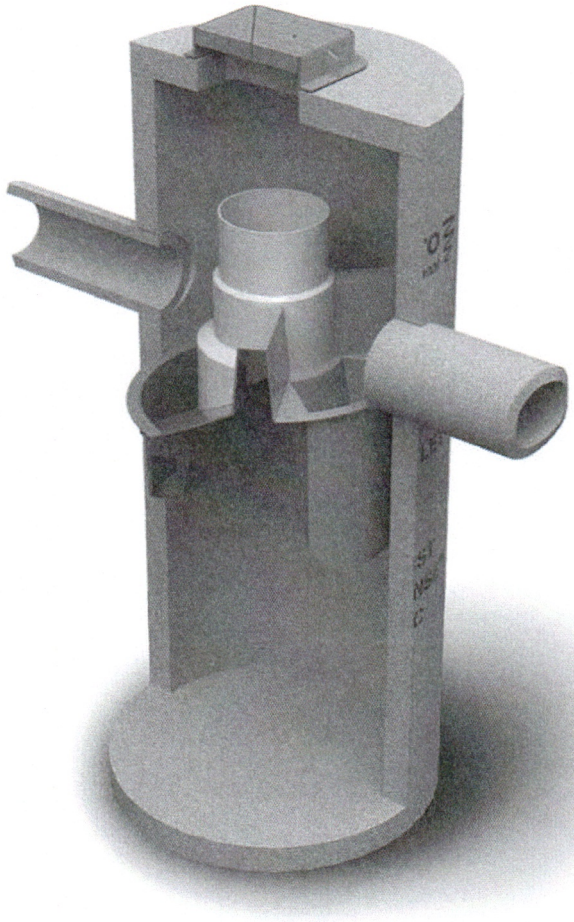
2. Overall Condition of Facility (Check One) Acceptable _____

Unacceptable _____

3. I hereby certify under penalty of perjury that I have performed the inspections and made a good faith effort to identify the items that need maintenance. I further certify that failure to inspect or misrepresent the need for maintenance could result in my liability for personal or property damage.

Signed: _____ Date: _____

Inspector



Operation and Maintenance Manual

First Defense® and First Defense®-HC

Vortex Separator for Stormwater Treatment

Stormwater Solutions

Turning Water Around ...®

Table of Contents

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

I. First Defense® by Hydro International

Introduction

The First Defense® is an enhanced vortex separator that combines an effective and economical stormwater treatment chamber with an integral peak flow bypass. It efficiently removes total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense® is available in several model configurations (refer to *Section II. Model Sizes & Configurations*, page 4) to accommodate a wide range of pipe sizes, peak flows and depth constraints.

Operation

The First Defense® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The First Defense® has been designed to allow for easy and safe access for inspection, monitoring and clean-out procedures. Neither entry into the unit nor removal of the internal components is necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the First Defense® have been designed to optimize pollutant capture. Sediment is captured and retained in the base of the unit, while oil and floatables are stored on the water surface in the inner volume (Fig.1).

The pollutant storage volumes are isolated from the built-in bypass chamber to prevent washout during high-flow storm events. The sump of the First Defense® retains a standing water level between storm events. This ensures a quiescent flow regime at the onset of a storm, preventing resuspension and washout of pollutants captured during previous events.

Accessories such as oil absorbent pads are available for enhanced oil removal and storage. Due to the separation of the oil and floatable storage volume from the outlet, the potential for washout of stored pollutants between clean-outs is minimized.

Applications

- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- Pretreatment for filters, infiltration and storage

Advantages

- Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for "offline" arrangements using separate junction manholes
- Proven to prevent pollutant washout at up to 500% of its treatment flow
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation

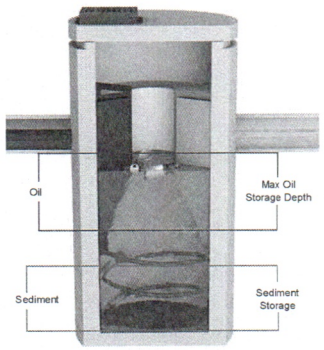


Fig.1 Pollutant storage volumes in the First Defense®.

II. Model Sizes & Configurations

The First Defense® inlet and internal bypass arrangements are available in several model sizes and configurations. The components of the First Defense®-4HC and First Defense®-6HC have modified geometries as to allow greater design flexibility needed to accommodate various site constraints.

All First Defense® models include the internal components that are designed to remove and retain total suspended solids (TSS), gross solids, floatable trash and hydrocarbons (Fig.2a - 2b). First Defense® model parameters and design criteria are shown in Table 1.

First Defense® Components

1. **Built-In Bypass**
2. **Inlet Pipe**
3. **Inlet Chute**
4. **Floatables Draw-off Port**
5. **Outlet Pipe**
6. **Floatables Storage**
7. **Sediment Storage**
8. **Inlet Grate or Cover**

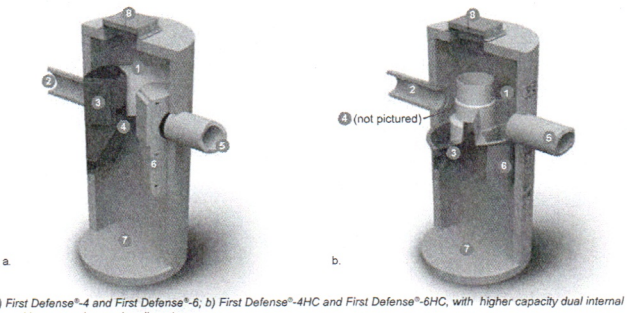


Fig.2a) First Defense®-4 and First Defense®-6; b) First Defense®-4HC and First Defense®-6HC, with higher capacity dual internal bypass and larger maximum pipe diameter.

Table 1. First Defense® Pollutant Storage Capacities and Maximum Clean out Depths

First Defense® Model Number	Diameter	Oil Storage Capacity	Oil Clean Out Depth	Maximum Sediment Storage Capacity[1]		Recommended Sediment Clean-out Capacity	
				Volume	Depth	Volume	Depth
	(ft / m)	(gal / L)	(in / cm)	(yd^3 / m^3)	(in / cm)	(yd^3 / m^3)	(in / cm)
FD-4	4 / 1.2	180 / 681	<23.5 / 60	1.3 / 1.0	33 / 84	0.7 / 0.5	18 / 46
FD-4HC		191 / 723	<24.4 / 62				
FD-6	6 / 1.8	420 / 1,590	<23.5 / 60	3.3 / 2.5	37.5 / 95	1.6 / 1.2	18 / 46
FD-6HC		496 / 1,878	<28.2 / 72				

NOTE

[1] Sediment storage capacity and clean out depth may vary, as larger sediment storage sump volumes are provided when required.

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

III. Maintenance

Overview

The First Defense® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the First Defense®. The First Defense® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the First Defense® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

The First Defense® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the First Defense®, nor do they require the internal components of the First Defense® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Maintenance Equipment Considerations

The internal components of the First Defense®-HC have a centrally located circular shaft through which the sediment storage sump can be accessed with a sump vac hose. The open diameter of this access shaft is 15 inches in diameter (Fig.3). Therefore, the nozzle fitting of any vactor hose used for maintenance should be less than 15 inches in diameter.

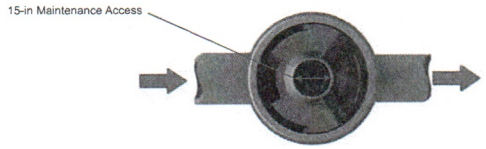


Fig.3 The central opening to the sump of the First Defense®-HC is 15 inches in diameter.

Determining Your Maintenance Schedule

The frequency of clean out is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge-Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil / flotables removal, for a 6-ft First Defense® typically takes less than 30 minutes and removes a combined water/oil volume of about 765 gallons.

Inspection Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the grate or lid to the manhole.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularites. Fig.4 shows the standing water level that should be observed.
4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the components and water surface.
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel.
6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
7. Securely replace the grate or lid.
8. Take down safety equipment.
9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Clean Out

Floatables clean out is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.5).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling

- Floatables and sump clean out are typically conducted once a year during any season.
- Floatables and sump clean out should occur as soon as possible following a spill in the contributing drainage area.

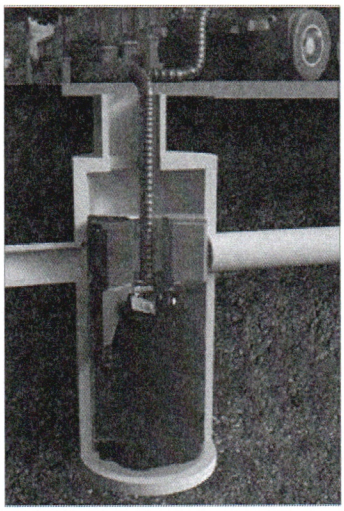


Fig.4 Floatables are removed with a vactor hose (First Defense model FD-4, shown).

Recommended Equipment

- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (flexible hose recommended)
- First Defense® Maintenance Log

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Floatables and sediment Clean Out Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense© as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the grate or lid to the manhole.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
4. Remove oil and floatables stored on the surface of the water with the vactor hose (Fig.5) or with the skimmer or net (not pictured).
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (page 9).
6. Once all floatables have been removed, drop the vactor hose to the base of the sump. Vactor out the sediment and gross debris off the sump floor (Fig.5).
7. Retract the vactor hose from the vessel.
8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components, blockages, or irregularly high or low water levels.
9. Securely replace the grate or lid.

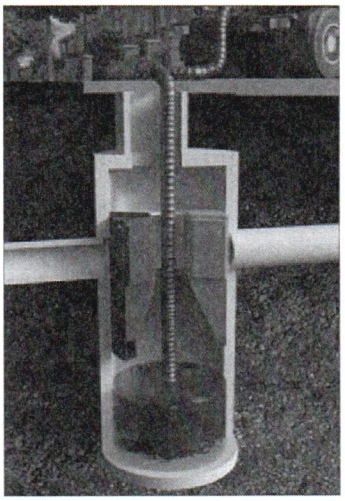


Fig.5 Sediment is removed with a vactor hose (First Defense model FD-4, shown).

Maintenance Schedule for First Defence

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area
NOTE: For most clean outs the entire volume of liquid does not need to be removed from the manhole. Only remove the first few inches of oils and floatables from the water surface to reduce the total volume of liquid removed during a clean out.	

Hydro International

First Defense® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL SIZE (CIRCLE ONE): FD-4 FD-4HC FD-6 FD-6HC

INLET (CIRCLE ALL THAT APPLY): GRATED INLET (CATCH BASIN) INLET PIPE (FLOW THROUGH)

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Hydro International

First Defense® Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment Depth Measured	Volume of Sediment Removed	Site Activity and Comments

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