



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Nonpoint Pollution Control  
Division of Water Quality

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[http://www.state.nj.us/dep/dwq/bnpc\\_home.htm](http://www.state.nj.us/dep/dwq/bnpc_home.htm)

PHILIP D. MURPHY  
*Governor*

SHEILA Y. OLIVER  
*Lt. Governor*

CATHERINE R. MCCABE  
*Commissioner*

**June 5, 2020**

Becky Graf, President  
Ray Graf, Vice President  
S&M Precast, Incorporated  
7515 Old Highway 111  
Memphis, IN 47143

Re: MTD Lab Certification  
Ocean Guardian Stormwater Treatment Device  
On-line Installation

### **TSS Removal Rate 50%**

Dear Mr. and Mrs. Graf:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7(c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). S&M Precast, Inc. (S&M) has requested an MTD Laboratory Certification for the Ocean Guardian stormwater treatment system (Ocean Guardian).

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated May 2020) for this device is published online at <http://www.njcat.org/verification-process/technology-verification-database.html>.

**The NJDEP certifies the use of the Ocean Guardian stormwater treatment system at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:**

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.
2. The Ocean Guardian shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.
3. This Ocean Guardian cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.
4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at [www.njstormwater.org](http://www.njstormwater.org).
5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Ocean Guardian. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at <https://www.smprecast.net/> for any changes to the maintenance requirements.
6. Sizing Requirement:

The example below demonstrates the sizing procedure for the Ocean Guardian:

Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using an Ocean Guardian treatment unit. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

Maximum Treatment Flow Rate (MTFR) Evaluation:

The site runoff (Q) was based on the following:

time of concentration = 10 minutes

$i = 3.2$  in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)

$c = 0.99$  (runoff coefficient for impervious)

$Q = ciA = 0.99 \times 3.2 \times 0.25 = 0.79$  cfs

Given the site runoff is 0.79 cfs and based on Table A-1 below, the Ocean Guardian Model OG-84 with an MTFR of 0.90 cfs would be the smallest model that could be used for this site to remove 50% of the TSS from the impervious area without exceeding the MTFR.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the NJCAT Technology Verification Appendix under Tables A-1 and A-2.

**Table A-1 Ocean Guardian Models and Associated MTFRs**

<b>Model</b>	<b>Diameter (ft)</b>	<b>Maximum Treatment Flow Rate (cfs)</b>	<b>50% Maximum Sediment Storage Area Volume (ft<sup>3</sup>)</b>
OG-48	4	0.29	11.5
OG-60	5	0.46	18.0
OG-72	6	0.66	25.9
OG-84	7	0.90	35.3
OG-96	8	1.18	46.1
OG-120	10	1.84	72.0
OG-144	12	2.65	103.7

A detailed maintenance plan is mandatory for any project with a stormwater BMP subject to the Stormwater Management rules under N.J.A.C. 7:8. The plan must include all of the items identified in the Maintenance requirements section of the Stormwater Management rules under N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Brian Salvo of my office at (609) 633-7021.

Sincerely,



Gabriel Mahon, Chief  
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

cc: Chron File  
Richard Magee, NJCAT  
Jim Murphy, NJDEP-BNPC  
Vince Mazzei, NJDEP - DLUR  
Brian Salvo, NJDEP - BNPC



**NPCA Certified**

**S&M Precast, Inc.**

*Serving Indiana & Kentucky*

# OCEAN GUARDIAN INSPECTION AND MAINTENANCE MANUAL

Plant Location:  
16700 Sima Gray Road  
Henryville, IN 47126

Phone: (812) 246-6258  
Fax: (812) 294-4862  
E-mail: [sales@smprecast.com](mailto:sales@smprecast.com)

## Maintenance Plan

The OG captures floatables and sediment from stormwater runoff during rain events. The unit needs to be cleaned of the collected pollutants so the unit can efficiently remove sediment and floatables for many years to come. Frequency for cleaning depends on installation site. There may be state or local guidelines in place for SQU's maintenance. Certain sites may be more prone to hydrocarbon runoff, trash, or sediment therefore additional sediment storage can be provided. S&M Precast Inc. recommends bimonthly inspection for the first year which will give good insight to the maintenance interval for the following years. The inspections can be reduced after an expected pollutant capture rate is determined. If a hydrocarbon spill has occurred, the OG must be cleaned. Cleaning of the impervious surfaces treated by the unit will decrease the amount of cleanouts needed. A maintenance plan can be found below.

## Inspection

The OG can be offered with several types of lids but the most common will be a manhole lid or aluminum hatch. This allows easy access to the internals without the use of special tools. All internal parts are non-moving and does not require filters or bags to be replaced.

Inspection is very simple to accomplish with the easy access lid. After the hatch has been opened or the manhole lid has been removed, there is a clear line of sight to the bottom of the unit. A few tools may be needed for a proper inspection: tape measure, pen, paper, manhole hook, measuring stick, sludge sampler, net for trash, flashlight, etc. All inspections do not require someone to enter the unit but it is important to visually inspect the baffles. Although the unit has more capacity, it is recommended to pump-out the OG once it has reached a 50% sediment depth of the max capacity. Hydrocarbons and floatables should be removed when they reach 9-3/8" (larger units will be deeper) regardless of sediment depth. If a hydrocarbon spill has occurred, immediate cleanout is required. Additional information can be available by request from S&M Precast Inc.

## Maintenance Cleanout

Maintenance should take place after an inspection has occurred requiring the unit to be cleaned. Do not clean the unit while stormwater is flowing through the OG. Trash will be skimmed off of the top with a net or other apparatus. A vacuum truck may then dewater the unit till all pollutants have been emptied. A wash down may be required to fully clean and breakaway all debris. Due to the two baffle system of the OG, cleaning is easy with the open design. The unit

does not need to be refilled with water after maintenance has been completed.

Sorbent pads maybe placed in some units depending on site requirements. They should be fished out from the surface not requiring entry into the unit. If entry is required, the OSHA confined space guidelines are required. Reach out to S&M Precast Inc. safety personnel before entry.

All materials that have been removed must be disposed of in accordance with local regulations.

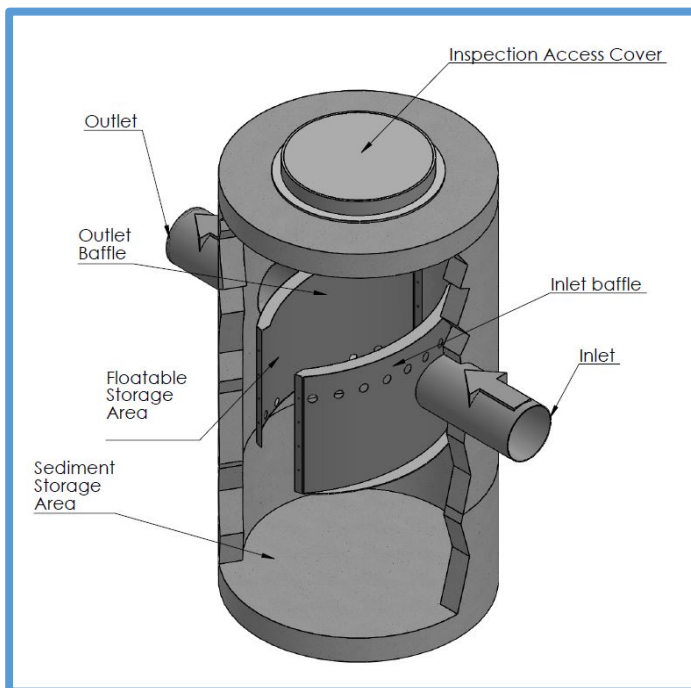


Figure 1: OG Detail View

Table 1: This table shows capacities and heights for standard units, custom units are available with larger storage capabilities.

Ocean Guardian™ Sediment Storage Capacities and Depth					
Model	Diameter (ft)	Sediment Storage Capacity 50% (yd <sup>3</sup> )	Depth from water level to 50% sediment (in)	Sediment Storage Capacity 100% (yd <sup>3</sup> )	Depth from water level to 100% sediment (in)
OG-48	4	0.427	37.9	0.853	26.9
OG-60	5	0.667	37.9	1.333	26.9
OG-72	6	0.960	37.9	1.920	26.9
OG-84	7	1.307	56.3	2.613	45.3
OG-96	8	1.707	64.3	3.413	53.3
OG-120	10	2.666	80.4	5.333	69.4
OG-144	12	3.840	96.5	7.679	85.5

Table 2: This table shows capacities and heights for standard units, custom units are available with larger storage capabilities.

Ocean Guardian™ Floatables Storage Capacities and Depth			
Model	Diameter (ft)	Hydrocarbon Storage Capacity 100% (gal)	Max Depth for Hydrocarbons (in)
OG-48	4	59	9 3/8
OG-60	5	92	9 3/8
OG-72	6	132	9 3/8
OG-84	7	268	14
OG-96	8	401	16
OG-120	10	783	19 7/8
OG-144	12	1354	23 7/8

**Ocean Guardian™ Maintenance Record**

Model:			Location:		
Date	Depth from water level/invert to sediement (in)	Floatable Level Thickness (in)	Inspection or Cleanout?	Name	Notes

1. This table should be used to track maintenance records for every Ocean Guardian
2. Measure from outlet invert (water level in the unit) to the top of the sediment. This determines when a cleanout is required.
3. If a hydrocarbon spill has occurred, the unit should be cleaned immediately