



ChamberMaxx™ Inspection and Maintenance Guide



ChamberMaxx™

Safety

Before entering into any storm sewer or underground retention/detention system check to make sure all OH&S, confined space and local safety regulations and guidelines are observed during the maintenance process. Hard hats, safety glasses, steel-toed boots and any other appropriate personal protective equipment shall be worn at all times.

Inspection Frequency

Annual inspections are recommended for the ChamberMaxx system. Loading rates are very much dependant on specific site runoff factors such as pre-treatment, sediment and litter generating activity and organic loading from landscaping and leaf matter. The first year of operation may require more frequent inspections due to construction activity. Frequency of inspections will vary significantly on the local site conditions. An individual inspection schedule should be established for each site.

Inspections

Inspection is the key to effective maintenance and is easily performed. Inspections may need to be performed more often where operations may lead to rapid sediment accumulation. It is very useful to keep a record of each inspection. A sample inspection log is included for your use.

The entire treatment train should be inspected and maintained. The treatment train may consist of an upstream sump manhole, manifold system or pre-treatment device. Inspections should start at the upstream device and continue downstream to the discharge orifice if incorporated into the chamber system.

Pre-Treatment Device Inspection

Inspection and maintenance procedures provided by the manufacturer should be followed for pre-treatment systems such as a StormFilter™, VortCapture™, Vortechs®, VortSentry®HS or EnviroPod®. Expected pollutants will be floatable trash, sediment and oil and grease. Pre-treatment devices are recommended for all detention/retention devices regardless of type.

Containment Row™ Inspection

The optional Containment Row (if no pre-treatment installed) consists of a diversion concrete manhole with a weir and a drain down orifice, and a row of chambers wrapped in a impermeable 1mm HDPE liner. The diversion weir directs the first flush flows into the Containment Row of chambers. The majority of sediment will be captured in the Containment Row due to the extended detention time which allows the particles to settle out. Containment Row drains down via an orifice located in the diversion manhole weir allowing the remaining pollutants to

be contained. Higher flows overtop (bypass) the weir into the manifold system.

The Containment Row will typically be located in the first row of chambers connected to the diversion manhole. Inspection can be done through accessing the diversion manhole and visually inspecting the Containment Row through the inlet pipe. Inspection ports throughout the system can be used for visual observation and measurement of sediment accumulation using a stadia rod. When the depth of sediment accumulates over 100mm, cleanout is recommended.

Manifold System Inspection

The main manifold pipe can be inspected from the diversion manhole upstream. When a quarter of the pipe volume has been filled with sediment the header system should be maintained.

Visual Inspection

Maintenance or further investigation may be required if any of the following conditions exist:

- Evidence of an unusual amount of silt and soil build-up on the surface.
- Clogged outlet drainpipe.
- System does not drain to the elevation of the lowest pipe in dry conditions.
- Evidence of potholes or sinkholes

Maintenance

Underground stormwater retention/detention systems should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities rather than the size or configuration of the system. If accumulated silt is interfering with the operation of the detention system (i.e. blocking outlet pipes or deposits significantly reduce the storage capacity of the system) it should be removed.

It is easiest to maintain a system when there is no flow entering. For this reason, cleanout should be scheduled during dry weather.

A vacuum truck or other similar devices can be used to remove sediment from the treatment train. Starting upstream, maintain manholes with sumps and any pre-treatment devices (following manufacturer recommended procedures). Once maintenance is complete, replace all caps, lids and covers. It is important to document maintenance events on the Inspection and Maintenance Log.

Header System Maintenance:

If maintenance is required, use a high pressure nozzle with rear facing jets to wash the sediments and debris into the diversion manhole. Use the vacuum hose to remove the washed sediments from the sump of the diversion manhole.

Containment Row™ Maintenance

If maintenance is required, a hydrojetting truck utilising a high pressure nozzle (sledge dredging tool) with rear facing jets will be required. Insert the nozzle from the diversion manhole into the Containment Row through the inlet pipe. Turn the water feed hose on and feed the supply hose until the nozzle has reached the end of the Containment Row. Withdraw the nozzle



Figure 1— Containment Row shown with high pressure cleaning nozzle

slowly. The tool will backflush the Containment Row forcing debris into the diversion manhole sump. Use the vacuum hose to remove the sediments and debris from the sump of the diversion manhole. Multiple passes may be required to fully cleanout the Containment Row. Vacuum out the diversion manhole and remove all debris that may be clogging the drain down orifice. See Figure 1.

Standard Row Maintenance

Accessing through the diversion manhole or inspection ports, use a high pressure nozzle with rear facing jets to wash the sediment and debris into the the diversion manhole or header pipe, while inducting all material washed toward the diversion manhole.

Inspection & Maintenance Log Sample Template

ChamberMaxx		Location:		
Date	Depth of Sediment	Accumulated Trash	Name of Inspector	Maintenance Performed/Notes

Support

- Drawings and specifications are available at www.stormwater360.co.nz
- Site-specific support is available from our engineers.



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