BAYSEPARATOR™
FULLY CUSTOMIZABLE
FOR ANY PROJECT
HANCOR BAYSEPARATOR
STORMWATER TREATMENT SYSTEM

Through extensive testing and mathematical modeling, the BaySeparator was developed to deliver predictable, reliable, and scalable performance with efficiency, ease of maintenance, and cost effectiveness. Using fully customizable systems, BaySeparator removes over 80% of oils, suspended solids, and floatable debris as soon as runoff enters the system.

COMPONENTS:
The BaySeparator system utilizes a unique polyethylene structure to route stormwater and separate pollutants into two standard precast manholes. The entire system consist of three main components: the BaySeparator unit, the primary manhole, and the storage manhole. The BaySeparator is purchased from BaySaver through Hancor. The manholes are purchased from the precast manufacturer of your choice.

THREE DISTINCT TREATMENT FLOWS:
During low flows, the BaySeparator treats all the runoff through both manholes. This occurs for small storms and the beginning of more intense storms. Coarse sediments immediately fall to the floor of the primary manhole. The remaining floatables and finer sediments flow through the separator and are conveyed to the storage manhole. Sediments fall to the floor of the storage manhole and floatables rise leaving clean water which is taken from the center of the water column to be discharged.

For larger storms the flow rate continues to increase. The BaySeparator continues to divert surface flows which contain the majority of the pollutants from the primary manhole to the storage manhole. The incremental flow associated with the large flows are treated by separation in the primary manhole. Treated water leaves the primary manhole through the center of the water column.

During large peak flow storms the BaySeparator bypasses the flow. The offline storage of contaminants prevents scour and resuspension of the material. The bypass function of the unit prevents upstream flooding and allows the peak design flow to be maintained.
### DESIGN:

The BaySeparator is available in six (6) standard sizes as shown below:

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Diameter (inches)</th>
<th>Maximum Treatment Rate (cfs)</th>
<th>Maximum Hydraulic Rate (cfs)</th>
<th>Manhole Diameter (inches)</th>
<th>Manhole Vault Depth (feet)</th>
<th>Sediment Storage (cf)</th>
<th>Storage Oil (cf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 K</td>
<td>24</td>
<td>1.5</td>
<td>9.4</td>
<td>48</td>
<td>4</td>
<td>38-61</td>
<td>25-41</td>
</tr>
<tr>
<td>1 K</td>
<td>30</td>
<td>2.3</td>
<td>15.2</td>
<td>48-60</td>
<td>4-6</td>
<td>50-61</td>
<td>36-61</td>
</tr>
<tr>
<td>3 K</td>
<td>36</td>
<td>7.8</td>
<td>30</td>
<td>60-72</td>
<td>5-8</td>
<td>78-116</td>
<td>59-87</td>
</tr>
<tr>
<td>5 K</td>
<td>48</td>
<td>11.1</td>
<td>50</td>
<td>72-120</td>
<td>6-10</td>
<td>113-177</td>
<td>85-133</td>
</tr>
<tr>
<td>10 K</td>
<td>60</td>
<td>21.8</td>
<td>100</td>
<td>96-144</td>
<td>10-12</td>
<td>314</td>
<td>235</td>
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<tr>
<td>X K</td>
<td>Custom</td>
<td>Custom</td>
<td>Custom</td>
<td>Custom</td>
<td>Custom</td>
<td>Custom</td>
<td>Custom</td>
</tr>
</tbody>
</table>

The sizes of both Primary and Storage Manholes in the BaySeparator may be varied to suit specific site conditions and treatment requirements as necessary. By selecting the appropriate separator unit size and the manhole diameters, the design engineer has the freedom to adapt the BaySeparator unit to the needs of a particular site. The XK unit can be specifically designed to handle larger flows on a site by site basis.

### HYDRAULIC PERFORMANCE:

The BaySeparator has two flow rates, the maximum treatment rate and the maximum hydraulic rate. The maximum treatment rate is the maximum flow that can be fully treated by the BaySeparator unit without any bypass. The maximum hydraulic rate is the maximum flow rate that can be conveyed through the BaySeparator. The ability of the BaySeparator to bypass flows allows the system to installed online without the need for a separate diversion structure.

The BaySeparator has been extensively tested in both laboratory and field conditions. The lab testing verified by field testing provides data establishing 80% annual aggregate removal efficiency for stand alone treatment applications. In addition the system can be designed for pretreatment applications in combination with other treatment technologies such as the BayFilter.

Sizing can be accomplished based on flow based, annual aggregate removal, or local design regulations. In pretreatment applications the unit is typically sized to remove 50% of the TSS on an annual aggregate removal basis. The pretreatment separator is usually part of a treatment train. The stand alone separator usually is designed to remove 80% of the TSS on an annual aggregate removal basis.
INSTALLATION:
BaySeparators are installed as part of the stormwater treatment system. The BaySeparator unit and inlet pipe are grouted into the primary manhole. The connecting pipes to the storage manhole require watertight connections. Connections can be made using standard boots or other approved seals. The pipes extending down from the separator and the separator itself should be backfilled with a Class 1 material. Minimum burial depths for each separator are 12 inches for 24–48 inch units and 18 inches for 60-inch diameter units. For more detailed installation instructions contact your local Hancor sales representative.

MAINTENANCE:
A big advantage of the BaySeparator system is the ease of maintenance. Like any system that collects pollutants, the system must be periodically maintained for continued effectiveness. Maintenance is a simple procedure performed using a vacuum truck or similar equipment. The system is designed to minimize the volume of water removed during routine maintenance which reduces disposal costs.

The pollutants stored in each manhole are accessed through a 30" manhole cover. This allows an unobstructed ability to reach the full depth of the system. No confined space entry is required for inspection or maintenance.

Periodic inspection is required to determine the need for maintenance. Inspection should be performed initially every six (6) months. Typically the system will require maintenance every 12 to 36 months depending on site conditions. The system requires cleaning when the sediment has accumulated to within one foot of the bottom of the connecting pipes.
SPECIFICATIONS

MATERIALS AND DESIGN

- Concrete structures shall be designed for H-20 loading traffic and applicable earth loads or as otherwise determined by a Licensed Professional Engineer. The materials and structural design of the devices shall be per ASTM C478.
- The separator structure shall be substantially constructed of HDPE or equivalent corrosion-resistant material meeting ASTM F2306.
- Smooth wall pipes within the unit, (i.e. tee pipes, connector pipes and down pipes) shall be constructed of SDR 32.5 HDPE pipe of standard ASTM F412.
- Pipe and fitting material shall be high-density polyethylene meeting ASTM F2306 minimum cell classification 435400C for 24-inch through 60-inch diameters.
- The reducer/adaptor shall be installed with an exterior joining coupler. The joint coupler shall be Mar-Mac® couplers and shall be installed according to the manufacturer’s recommendations.
- The connector pipes shall be connected with the down pipes using flexible couplings that have been manufactured to conform to ASTM C425.

PERFORMANCE

- The stormwater treatment unit shall be an online unit capable of conveying 100% of the peak design flow.
- The stormwater treatment unit shall be designed to remove at least 80% of the suspended solids load on an annual aggregate removal basis. Said removal shall be based on full-scale third party testing using F-95 media gradation (manufactured by US Silica®) or equivalent. Said full scale testing shall have included sediment capture based on actual total mass collected by the Stormwater Treatment Unit(s).
- The stormwater treatment unit shall consist of one (1) prefabricated separator structure, one (1) on-line coarse sediment capture structure, and one (1) offline sediment capture structure. The separator structure shall be substantially constructed of HDPE or equivalent corrosion resistant material. The offline sediment storage structure must provide for offline sediment storage of sediments and floatables that are isolated from high intensity storms. The said capture structures or manholes shall be of standard concrete construction.
- The Stormwater Treatment Unit(s) head loss at the Peak Design Flow Rate shall not exceed the head loss specified by the Engineer.
- The unit shall be designed to remove sediment particles as well as floating oils and debris.

INSTALLATION

Installation of the Stormwater Treatment Unit(s) shall be performed per manufacturer’s Installation Instructions.