Above Ground Sewer Discharge or Water Recovery Pretreatment Systems (Clarifiers)

What do these systems do?

Multi-Compartment Sewer Discharge Systems or Water Recovery Pretreatment Systems (classified as Above Ground Clarifiers) are essential in many water recovery system applications. These systems aid as either a first-step in a water treatment process where the water is intended for reuse, or they act as an above ground sand/oil water separator for discharge to sanitary sewer applications. Functionally, these systems force the water to dwell or pass slowly for a period of time through multiple chambers and have a clarifying effect cleaning the water as the water moves through the system and changes direction of the flow path. This process forces sediment to drop out and allows free oils to separate from the water and rise to the surface. Solids and oils are thereby trapped in the compartments for later removal.

The traditional method for adapting a below ground clarifier to an application is to locate a concrete vault, which is separated into a minimum of three compartments, in the ground and allow the water to approach, pass through and exit the clarifier by gravity flow. The water can then flow downstream and be discharged to sewer or be pulled from the cleanest chamber for further filtration for reuse.

Disadvantages associated with Below Ground Clarifier Systems:

1. Clarifiers require permitting for installations and permits to operate.
2. Clarifiers require frequent inspection by a responsible government agency.
3. Clarifiers are large, heavy and typically have to be installed by a contractor.
4. Clarifiers are not easy to clean. They often require a hazardous materials waste hauler to pump them out on a regular basis.
5. Pumping out clarifiers can be expensive and may require waste manifests be filled out making the source generator liable from “cradle to grave”
6. You cannot simply remove the free floating oil and sludge build-up very easily and leave the water.
7. Clarifiers cannot be readily moved to another location. It’s difficult to do, can be expensive and may require additional permits.
8. Abandoning a clarifier is not easy to do either. Permits are required, and governmental agency notification is mandatory, or it may not even be allowed.
How can you get around most of these issues?

An alternative for many of the problems associated with operating a Below Ground Clarifier is to utilize an Above Ground Sewer Discharge/Pretreatment System.

A simple Above Ground Sewer Discharge/Pretreatment System consists of a minimum of three specially designed tanks located above ground and plumbed together in such a manner as to achieve the similar dwell time and flow directional changes as would be experienced in a below ground system. Unlike a below ground system, water usually cannot reach the tanks by gravity and will most likely need to be pumped into the tanks from a collection point. Additionally, if gravity discharge is not possible an optional Sample Barrel with a Float Activated Pump can be provided to discharge the water after it has gone through the system.

Advantages of an Above Ground Sewer Discharge and Wash Water Recovery Pretreatment Systems:

1. Installation and use permits are not normally required in most locations.
2. Operational permits are not usually required in most locations.
3. They are inexpensive to purchase and inexpensive to operate.
4. They are easy to install and can be relocated easily.
5. They are easy to maintain and clean.
6. Abandoning these systems is usually not a problem. They can usually be "retired from service" without obtaining permits or advising governmental agencies.
7. Pumping out Above Ground system is not necessary.
   1. Conical shaped tanks allow sediment to be easily purged into an above ground sludge hopper for easy disposal. Tank sediment purging can be accomplished either manually or automatically.
   2. Free-floating oils can be easily accessed from the tops of the tanks and removed or drained out through a skimmer valve on the tank sides.
   3. Water can be used for longer periods of time, if part of a recycling system.
8. Options can easily be added to ENHANCE solids settling and oil water separation.

Common Models Available

<table>
<thead>
<tr>
<th>NEW (OLD) MODEL NUMBER</th>
<th>TANK CAPACITY</th>
<th>TOTAL CAPACITY</th>
<th>LENGTH</th>
<th>DEPTH</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDS-300 (AGC-300)</td>
<td>(3) 100 Gallon</td>
<td>300 Gallon</td>
<td>14'</td>
<td>42&quot;</td>
<td>60&quot;</td>
</tr>
<tr>
<td>SDS-600 (AGC-600)</td>
<td>(3) 200 Gallon</td>
<td>600 Gallon</td>
<td>18'</td>
<td>48&quot;</td>
<td>80&quot;</td>
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<tr>
<td>SDS-825 (AGC-875)</td>
<td>(3) 275 Gallon</td>
<td>875 Gallon</td>
<td>20'</td>
<td>48&quot;</td>
<td>75&quot;</td>
</tr>
</tbody>
</table>

Larger models are available. Clarifiers are available in 1 to 6 stage tank designs

Sewer Discharge System Options:

- Oil Coalescers in one or more tanks
- Oil Bleed-off Valves in one or more tanks
- Stainless Steel Stands for all tanks (standard is painted steel stands)
- ALL POLY Tanks and Stands
- Ozonation/Aeration for odor and bacteria control for one or more tanks
- Auto Timed Sediment Dump Valves on each Cone Bottom Tank
- Cyclone Separation Pre-treatment Stands available

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