AQUA-NOVA
Servicing Procedure

Everhard Industries designs and constructs sewage treatment plants (Aqua-nova™) for onsite operations. These systems must be serviced by appropriately qualified persons to ensure that they operate at optimal levels.

All systems must be serviced every three months by appropriately qualified persons.

When servicing the 10EP it is important that people are not walking in the immediate environment. Never leave the sewage treatment plant unattended when lids are not in place and screwed down.

While the procedure shows a systematic approach to servicing. Experienced service technicians may be able to perform several of these actions at once, however all actions listed must be performed as part of every servicing procedure.

Safety

When performing a service, persons must ensure that appropriate precautions are taken to ensure that the safety of any person onsite is not compromised.

- Always use gloves.
- Avoid exposure of septic and chlorine fumes.
- Wear recommended safety equipment when handling chemicals.
- Thoroughly wash any clothing or equipment that may have come into contact with sewage prior to leaving the site.
- Wash hands thoroughly, using disinfecting soap, after each service.

All persons involved in the servicing an Aqua-nova must have received appropriate inoculations. Persons should consult with their local doctor to ensure that they have received these inoculations and that they are current prior to servicing a system.
Final Water Quality

On entering a site the first job that a service technician should do is check the quality of the final effluent. If poor water quality is observed the technician should work their way back through the system to locate possible causes for this problem and fix the associated problem.

- When laboratory samples are required, collect samples from the pump well using procedures stated by the local authority. Immediately place these samples in a chilled esky and ensure that they arrive at the laboratory within 24-hours of the sampling event.
- From the same location collect a 1-litre sample for onsite analysis. Samples should have the following quality.
  
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Chlorine</td>
<td>0.5mg/L</td>
</tr>
<tr>
<td>pH</td>
<td>6.0 – 8.0</td>
</tr>
<tr>
<td>Clarity</td>
<td>&lt;40cm</td>
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<tr>
<td>Temperature</td>
<td></td>
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</tbody>
</table>

- Record the values on the site report.

Primary Tanks

The 10EP has one 3000L primary tank.

- Remove access lids of the primary tank. The tank should have a thick black crust on the surface.
- Drop in ‘Sludge Judge’ and record the depth of sludge at the bottom of the tanks and the thickness of the crust.
- If the sludge and crust occupy more than 30% of the profile in a tank, the owner of the treatment plant must be immediately informed that the tank requires pumping out.
- Check and record the flows of the sludge return. The level of the flow should be 25-50% of the pipe depth or should be adjusted to this level.
- Replace the lids and secure with screws.

Aeration Tanks

Aeration Tank

- Remove access lid and inspect aeration pattern.
- Air bubbles released from aeration arms should be apparent at the surface at a relatively even rate. If the pattern is uneven adjust the air flow using the provided valves.
- In some instances sludge may have accumulated around the aerator arm and completely block a diffuser. In these cases shut all valves on the other arms diverting all air to the effected diffuser. Sludge will be purged away from the diffuser allowing it to operate effectively.
• Visually check to see that there is no excessive buildup of sludge on the media and physically remove if required.

Aerators
• Remove lids of aerator boxes.
• Clean out any debris that may have accumulated in the box.
• Aerators should be relatively quiet and warm to touch. If aerators appear to be noisy they typically require servicing. All aerators must be serviced every 24-months (see below).
• Check that the alarms are operational by detaching the plastic tubes from the pressure switches and fix if not operational.
• Turn off aerators. Check air filters and replace when necessary. The accumulation of excessive amounts of grease on the filter indicates that ‘sewer gases’ are entering the box from the aeration tank and can result in the premature failure of the aerators. Reseal the hole between the aerator box and the tank if required.
• Secure the aerator and replace lid.

**Servicing Aerators**

All systems are provided with Nitto Blowers for maintaining good aerobic conditions. These aerators must be serviced every 24-months by a trained technician. This includes a quality check of the pistons and greasing the rear spring.

*To ensure that aerators are serviced in a safe and proficient manner, this must only be performed by appropriately trained personnel.*

Clarifier

The water at the top of the clarifier should clear.

• Fully open the air valve of the return line to purge any solids that may have accumulated at the bottom of the clarifier. This will also lower the water level in the tank allowing it to be easily cleaned.
• Brush down the sides of the clarifier removing any adhering solids.
• Skim off any solids that may have accumulated on the surface of the clarifier and transfer them to the beginning of the aeration section of the plant.
• Close the air valve of the return line so that the flow in the sludge return pipe runs at approximately 25-50% of the pipe depth.
• Replace lid.
Disinfection / Pumpout Well

The water in this tank should be clear.

- Replenish chlorine tablets in the static chlorinator and record the number of tablets used.
- Check the operation of the pump by lifting the pump floats.
- Check the alarm by raising the float alarm.

Irrigation Area

Inspect the irrigation area to ensure that no water is ponding which would indicate one or more of the following

- Poor irrigation distribution.
- Excess water being used,
- Undersizing of irrigation area

This should be performed in conjunction with checking the pump operation to verify that the system is not leaking