

4. Primary and Secondary Filters for Groundwater

Primary and secondary filters are used for treatment of Groundwater when the turbidity is very high due to excessive concentrations of iron, manganese, silts and sediments. The primary filter will act as a roughing filter removing most of the sediments. The primary filter will require frequent cleaning. The secondary filter will act as a polishing filter removing any remaining sediment. The polishing filter will produce a high quality, sediment free water ready for use or further treatment.

Important Notes:

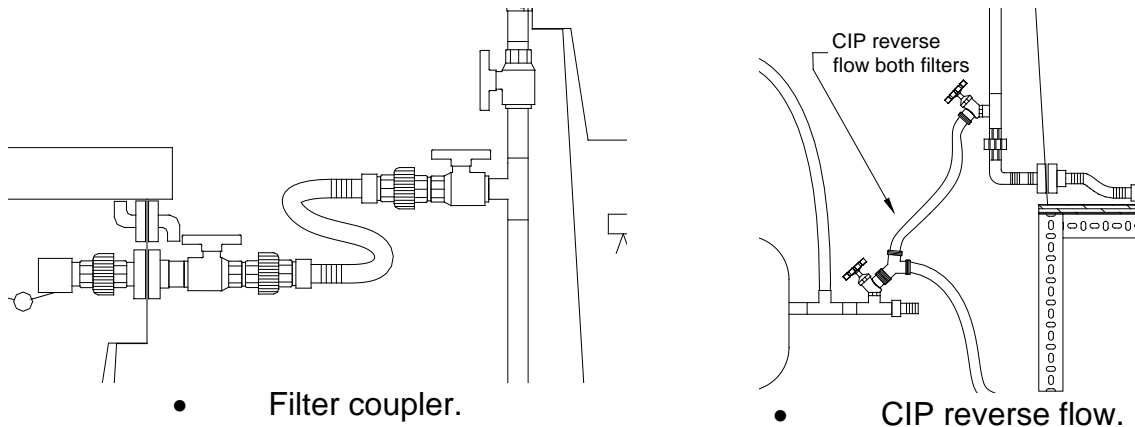
- All of the assembled components have been loosely fitted together. Use Teflon tape on all threaded connections and tighten. **Do Not Over Tighten** the PVC fittings. (They will crack if over-tightened)
- Refer to Figure 1 to find the locations for all system components.
- Heat the end of hose connections in hot water before installing. Use the gear clamps to fasten the hose to the barb fitting.

Install Assembled Components

Step 1. Position the primary filter stand as shown in figure 1. Place the primary filter on the stand.

Step 2. Position the secondary filter stand as shown in figure 1. Place the secondary filter on the stand.

Step 3. Attach the primary and secondary filters. Connect the filters using the 3/4" braided PVC hose and geared hose clamps.



Step 4. Locate the CIP reverse flow assembly. Connect the wye fitting to the CIP reverse flow faucet. Connect the hose from the wye to the lower valve on each filter standpipe.

Step 5. Return to the manual and continue with the installation.

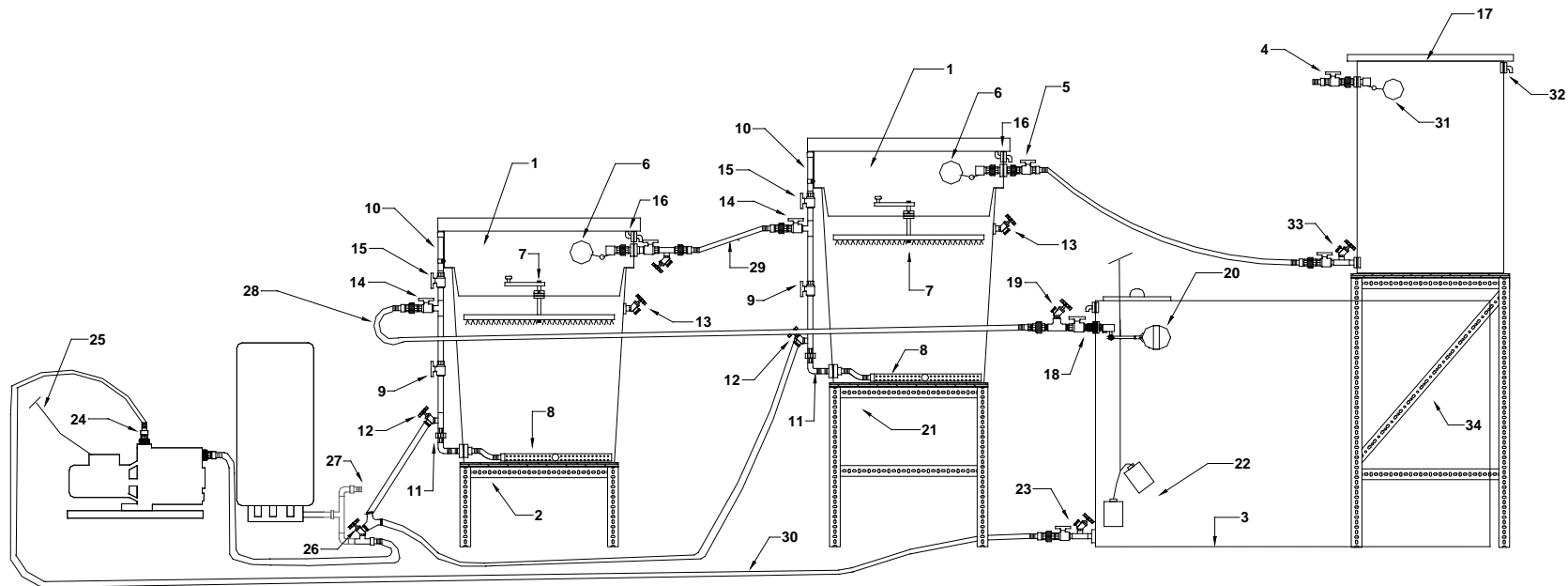


Figure 1 - Automated System Layout - Primary and Secondary Filter

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|---|--|--|
| 1. BioSand Filter | 15. Anti-siphon Valve | 27. To Distribution or Further Treatment (softener, Reverse Osmosis, UV) |
| 2. Filter Stand | 16. Filter Overflow | 28. 3/4" Braided PVC Hose |
| 3. Storage Tank | 17. Head Tank | 29. Primary to Secondary Filter Connection |
| 4. Raw Water Inlet | 18. Storage Tank Inlet Valve with Union Connection | 30. 1" Braided PVC Hose |
| 5. Filter Inlet Valve | 19. Sampling Valve | 31. Head Tank Inlet Float Valve |
| 6. Filter Float Valve with Union Connection | 20. Storage Tank Float Valve | 32. Head Tank Overflow |
| 7. Clean In Place (CIP) and Diffuser Basin | 21. Primary Filter Stand | 33. Head Tank Outlet |
| 8. Underdrain | 22. Low Level Float Switch (to the pump) | |
| 9. Flow Rate Control Valve | 23. Storage Tank Outlet with Union Connection, Shutoff Valve and Drain Valve | |
| 10. Filter Standpipe | 24. Check Valve | |
| 11. Standpipe Union Connection | 25. Pump Electrical Outlet (to the low-level float switch) | |
| 12. Standpipe Lower Valve | 26. Clean In Place (CIP) Reverse Flow (attached to standpipe lower valve) | |
| 13. Maintenance Drain Valve | | |
| 14. Filter Outlet Valve | | |