

PEI routinely works in wastewater treatment in all capacities. Recently, PEI completed a project involving the addition of a Membrane Bioreactor package system to new support systems as well as improvements to existing processes. The addition of the Membrane Bioreactor (MBR) expanded the existing plant's wet and dry weather treatment capabilities. Upon completion of the upgrade, the plant's treatment process operated as a blend of conventional activated sludge (CAS) along with the MBR system. Additional elements were added under the project that included UV, Odor Control, Sodium Hypo feed, Band Screens, Standby Power, Power Monitoring as well as control functions to existing CAS equipment.

Portland Engineering performed the following services:

- Instrumentation supply and calibration - we provided varied equipment including flow and level instruments as well as analytical devices.
- Wiring drawings – we supplied the standard for the wiring diagrams and developed a complete set of I/O drawings tied to a data base maintained by PEI.
- Fiber and Network layout and configuration were completely laid out prior to installation. Our drawings showed all fiber ports, patch panels, managed switches and cable layouts for a complete network configuration. In addition PEI was instrumental in consults with the Owner to reduce cost on network switches and provide the client with a better solution.
- We provided point to point checkout for all I/O to the control panels and worked with package vendors for I/O checkout.
- Systems' testing was completed by PEI – both systematically per a testing schedule as well as by each P&ID as it was developed. Additionally, we supported a seven day clean water test that included all systems prior to start up.
- Process Control Programming and Integration of existing plant control with the MBR expansion and Balance of Plant systems. The control strategies for each system were reviewed and implemented by PEI to meet the design intent – Owner's contractors to work through all system implementation issues.
- Wonderware HMI programming and the existing plant updates were included in our scope of work. This included coordination with the Membrane supplier for integration of their control screens.
- Control Panel design and supply as well as Control Panel checkout.
- Complete Project Integration with Vendor Packages including, Profibus and Ethernet communications along with hardwire I/O.