

West Side Primary Settling Tanks 1-9 and Aerated Grit Facility, SWRP

Project Number: 04-128-3P

Service Area: Stickney

Location: Stickney WRP

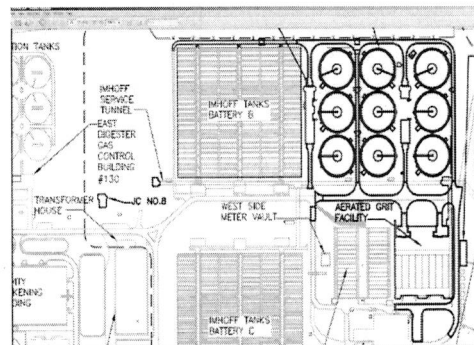
Engineering Consultant: Greeley & Hansen

General Contractor: To be determined

Estimated Construction Cost: \$206,458,000

Contract Award Date: November 6, 2014*

Substantial Completion Date: March 3, 2018*



Project Description: Construction of nine Primary Settling Tanks (PSTs) of 160-foot diameter and six 132-foot long aerated grit tanks, associated support facilities, service tunnels, and conduits. The aerated grit facility will include shaftless-screw conveyors, centrifugal and airlift pumps for grit removal, grit classifiers and a dumpster-loading system. Grit tanks will be covered for odor control. Process air for the grit tanks and PSTs will be provided by new turbo blowers. The PST area will have Tunnel Access Pump Stations (TAPS) containing scum pumps, sludge airlifts, an electrical substation, odor control vessels and fans, and associated equipment. PST effluent weirs and troughs will be covered for odor control. The ability to bypass six PSTs will be provided. Additionally, modifications to the existing Monitoring & Research Building at the Stickney WRP are included in this project. The work involves the installation of new air handling units, an absorption chiller, heat exchangers, pumps, and strobic fans. Replacement of associated controls, intake, supply, and exhaust ductwork, piping, conduit, and wiring at the Monitoring & Research Building is also included. Equipment will be provided by the District, but installed by the contractor. Piping will be installed in Mechanical Room LC-118 to bypass and abandon leaking underground condenser water piping.

Project Justification: The West Side Imhoff tanks are being decommissioned and replaced with more modern and effective treatment. Imhoff Battery A and Skimming Tanks 1-8 have already been demolished in preparation for this project. The Imhoff tanks have been in service since 1928, are labor-intensive to operate, and provide treatment inferior to PSTs. Valves for sludge withdrawal are difficult to operate, and have resulted in injuries to personnel. Skimming scum from Imhoff tanks requires personnel to walk narrow walkways above open sewage with no fall protection. Certain areas of the structures have exhibited structural cracking and leakage from conduits. Maintenance and repair supplies are not readily available for antiquated systems. Sludge solids are digested in the lower anaerobic zone of the Imhoff tanks, and the methane gas byproduct of digestion is impossible to capture and is emitted to the atmosphere. A significant increase in digester gas production will result from this project, allowing the District to proceed on the path to energy neutrality. The aerated grit facility will replace the existing West Side skimming tanks and provide superior grit removal, thus preserving downstream piping and equipment from damage due to scouring by grit. The existing skimming tanks and grit concentration utilize maintenance-intensive chain-and-flight mechanisms. In addition, the skimming tanks and existing grit concentration create a recycle load of up to 100 million gallons per day; there will be minimal recycling from the new facilities. The existing Imhoff and skimming tanks are significant generators of odor. Odors from new facilities will be captured and removed, in keeping with the District's good-neighbor policy. The central portion of the Monitoring & Research Building was constructed in 1963 and much of the existing equipment in this area is original to the facility. The supply and exhaust ventilation can no longer meet the testing and ventilation needs of the facility staff. Increased maintenance needs and the increased risk of failure necessitate that it be replaced to ensure a reliable and safe environment for the employees.

Project Status: This project has been advertised for bid.

*Information shown is estimated.