A BABCOCK POWER INC. SUBSIDIARY

SUCCESS STORIES

SPIRIT LAKE ESTUARY

LOCATION	Duluth, MN
OWNER	Jointly Funded by U.S. Steel and the EPA
ADDRESS	Former US Steel Site, Duluth, MN 55808
MATERIALS	
WATER TREATMENT AREA	577,500 SF. 40 MIL Smooth HDPE Liner
WATER RETENTION POND	187,500 SF. 40 MIL Smooth HDPE Liner
START	Date November 2020
COMPLETION DATE	April 2021
ENGINEER	Barr Engineering
CONSTRUCTION	EA Engineering Science & Technology
CLIENT	JF Brennan
GSI PROJECT MANAGER	Cesar Gonzalez
GSI SUPERINTENDENT	Jose Valverde/Viruth Long/Frank Mata
QC TECHNICIAN	Martin Villegas/ Robare Long/Jesus Burgos

SUMMARY OF WORK

U.S. Steel opened its Duluth Works site in 1915, quickly growing to more than 5,000 Duluth workers during World War II. New pollution regulations in the 1970s requiring exorbitant updates, resulted in the plant eventually closing in 1981.

Near the former steel plant, the cleanup plans to dredge 700,000 cubic yards of contaminated sediment that will be brought to on site disposal facilities. More than 100 acres of the material currently under water will be covered with clean gravel or sand. Most of the work will take place in Spirit Lake, part of the river estuary near the U.S. Steel site.

The project, which will be jointly funded by U.S. Steel and the EPA, is expected to be completed in two or three years and restore the Lake Superior & Mississippi Railroad scenic train route that runs through the U.S. Steel site.

The Upland Confined Disposal Facility (CDF) will be used to place contaminated materials during dredging.

Two lined cells have been created to process contaminated sediments from an unnamed creek that runs through the property.

The effort to collect and safely contain remaining contaminated sediments on the site began in late October. The cleanup of the Superfund site is expected to stretch into 2022 and possibly even 2023. There is an estimated 700,000 cubic yards of impacted sediments expected to be processed.

Water from the process will be captured in the lined cells and will be treated before it is released back into the environment.

Cement, fly ash and sand will be hauled in and mixed with those dewatered sediments in the cells to help stabilize them before they are capped with geosynthetic liner.

SCHEDULE

General Contractor Construction Mobilization for Water Treatment Pad was anticipated to be August 2020 but was postponed until November 2020 due to a delay in the award process.

GSI's schedule had 14 days including setup and 5 weather days. Sunday's & Holidays were not included as production days. This affected the completion date drastically as the project was to be completed before December 1, 2020. Delays in design raised concerns relating to installing liner in October/November in Duluth. The WWT pond and cell were started in mid November at the request of the contractor, adjusting rates to cover the additional costs and down time associated with winter work. The crew preformed exceptional well given the adverse weather conditions that included snowstorms and below freezing temperatures.

GSI completed enough of the installation in the wintertime to partially allow operation of the pond.

The crew returned in the spring of 2021 and finalized this portion of the project. $162,497 was charged as additional cost due to winter work.

OUTCOMES AND BENEFITS

- Margin increased due to winter weather rates
- Change orders totaling $355,907.00
    - 8 oz installation
    - Geonet supply & Installation
    - 24 mil installation
- Howards Bay Project
    - 60,000 sf of 40 Mil HDPE
    - 120,000 SF of 12oz Geotextile
- Ponds Behind Erie Pier
    - 196,000 sf 20 mil Woven Coated Liner
    - 396,000 sf of 8oz Geotextile
    - GeoStrux Geotextile Tubes

The project will open new opportunities for economic redevelopment on a scale not possible elsewhere in Duluth.

The opportunity to have 400 such contiguous acres is really going to benefit long term economic development efforts for Duluth.

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