



UNITED STATES

St. James Terminal

St. James Parrish, LA

**Owner**

Plains All American Pipeline, L.P.

Engineer

Worley

General contractor

Boh Bros. Construction Co., LLC

Dates of work

2005/10 2005/12

Main figures

Wick drains

22400 EA.

Description

St. James Terminal is a storage terminal located in Louisiana between New Orleans and Baton Rouge. This storage terminal expansion project included the construction of a total of four new 325-ft diameter tanks. Due to poor ground conditions at the site, ground improvement was necessary.

Menard installed Prefabricated vertical wick drains to accelerate the consolidation process, strengthen the underlying soft soil, accommodate the heavy tank loads, and minimize future settlement.

With over 1.24 million linear ft of wick drain installed, St. James Terminal represents one of Menard's larger single-phased wick drain projects for above ground storage tanks.

Ground conditions

The site was underlain by relatively recent soft silt and clay deposits to a depth of approximately 80 ft. The geotechnical engineer determined that the most cost-effective solution to strengthen the underlying soft soils was to use a combination of soil surcharge with wick drains.

Solution

The final design called for wick drains installed on a five-foot triangular grid spacing, extending to the stiffer soils that were present at a depth of approximately 80 ft. The upper end of the wick drains were extended to horizontal strip drains placed between every other wick drain row. The strip drains served to convey the collected water to drains located just beyond the surcharge footprint.

Once the surcharge was removed, the ground was already subjected to stresses that were similar to those from the tank, thus reducing total and differential settlement to acceptable values. The wick drain ground improvement solution sped up the consolidation process and ultimately reduced the time required for the surcharge to remain in place.

For the construction of above ground storage tanks in Louisiana, a combination of soil surcharge with wick drains was used to stiffen soft soils and accommodate the heavy loads.