

PROJECT DESCRIPTION

CALCASIEU PASS LNG FACILITY LNG STORAGE TANKS FOUNDATIONS CAMERON, LA

MORRIS-SHEA PROJECT COMPONENTS
2,700 DRILLED DISPLACEMENT PILES
180 TON WORKING LOAD

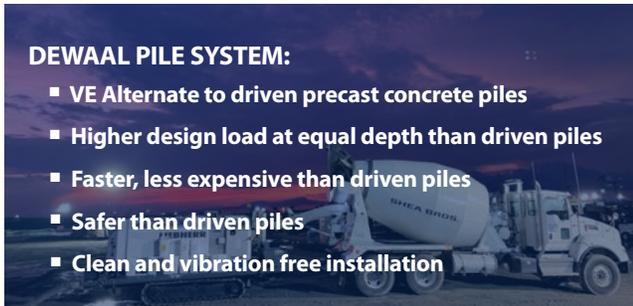


MORRIS-SHEA

LNG Containment Tanks

DEWAAL PILE SYSTEM:

- VE Alternate to driven precast concrete piles
- Higher design load at equal depth than driven piles
- Faster, less expensive than driven piles
- Safer than driven piles
- Clean and vibration free installation



PROJECT OVERVIEW

Morris-Shea constructed deep foundations for 2 liquefied natural gas storage tanks at Venture Global's Calcasieu Pass LNG facility in Cameron, Louisiana. The specialty foundations contractor installed 2,700 18 inch DeWaal Drilled Displacement Piles to depths up to 113 feet as deep foundation for the 200,000 cubic meter LNG containment tanks. Twelve cone penetration tests (CPT) were performed for each LNG tank to better determine soil conditions. Leica survey grade GPS units on the Morris-Shea drill rigs assured accurate pile layout and rig positioning. Deep foundations for the storage tanks were completed on schedule by Morris-Shea in November 2019.

DEWAAL PILE PREFERRED ALTERNATIVE:

The contractor recommended the DeWaal Pile System as a preferred alternative to the original proposal specification for driven concrete piles. DeWaal Piles offered uncommon load strength for this high capacity project and minimized spoils and related disposal costs. The DeWaal Pile System is a drilled, full displacement, cast-in-place concrete pile installed by powerful, fixed mast rigs. The DeWaal Piles at the Calcasieu Ship Channel site were installed with two IHC Fundex F3500 drill rigs utilizing exacting methods that ensured the construction of quality foundation piles. Morris-Shea guaranteed the pile performance of this Value Engineered Alternate to meet specified loads.



PROPRIETARY CONCRETE MIX

The contractor produced a self-consolidating, coarse aggregate concrete mix at its mobile concrete plant to further manage and maintain the material integrity of each pile. The cement content of a standard DeWaal Pile mix was increased to accommodate the 7000 psi design requirement for a 180 ton working load capacity. A proprietary Viscosity Modifying Admixture was also incorporated with the concrete to insure optimum viscosity. High-powered Liebherr concrete pumps transported this concrete mix to the drill rigs.

CPT JOBSITE TESTING

The soil profile consists of intermittent layers of silts, clays and sands with dense sand at the pile tip elevation. The contractor performed 12 cone penetration tests (CPT) for each LNG containment tank to better determine soil conditions and potential variability. Morris-Shea's in-house pile capacity software combined new CPT site investigation results with pile load test data from every DeWaal Pile installation since 1992 to accurately predict pile behavior at the construction site.

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