

ACOUSTIC CORER™ SURVEY: BLOCK ISLAND WIND FARM

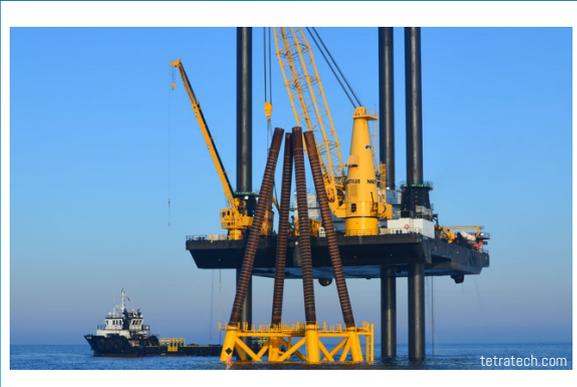


FIGURE 1: Pile installation off the coast of Block Island.

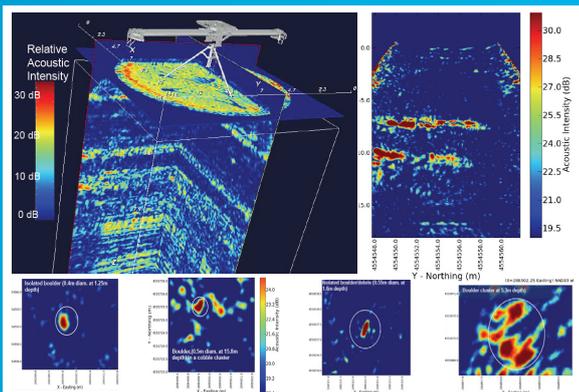


FIGURE 2: 3D Volumetric data set with 2D cross-section and plan views.

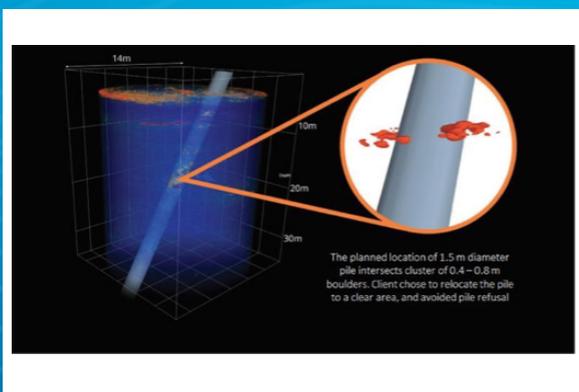


FIGURE 3: Acoustic core of planned pile location showing boulders.

PROJECT SCOPE

The Block Island Wind Farm (BIWF) is a five wind turbine site built on four-legged jackets installed with 1.5m diameter pile foundations in complex geology. The on-site sub-seabed geology comprises glacial till with a high concentration of boulders on the seafloor. PanGeo was hired to determine if the sub-seabed boulder composition resembled the number of on-site surface boulders. Accordingly, one of the installation's most significant risks was having a pin-pile refusal by encountering buried boulders greater than 0.38m diameter, which reject installation and often damage the pin-piles.

OBJECTIVE

PanGeo's objective was to survey each of the proposed pile locations using the Acoustic Corer™ to identify sub-surface boulders with diameters equal to or larger than 0.38m that could impede installation at the proposed pile locations.

RESULTS

The survey located 88 anomalies meeting the 0.38m diameter criteria. Of the 88 anomalies, The Acoustic Corer™ identified 68 discrete boulders, and the remaining identified targets suggested smaller boulder and cobble clusters.

CONCLUDING REMARKS

The Acoustic Corer™ survey delivered preliminary offshore results in real-time to the client. PanGeo offered a solution that identified buried boulders that would have caused pile refusals and thereby not only supported de-risking the installation, but also eliminated the need for costly additional surveys. Final results presented to the client identified and confirmed the presence of buried boulders in several pile locations and the client was able to relocate several of those piles within the same acoustic core that that would have otherwise been impeded by the geohazards.