



## GULF OF MEXICO CALL AREA

# Proposed Survey Activities

### Geotechnic and Benthic Survey Methods

Survey Type	Use	Survey Equipment and Methods
<b>Bottom-sampling Devices</b>	Penetrate depths from a few centimeters to several meters	A piston core or gravity core is often used to obtain samples of soft surficial sediments. Unlike a gravity core, which is essentially a weighted core barrel that is allowed to free-fall into the water, piston cores have a “piston” mechanism that triggers when the corer hits the seafloor. The main advantage of a piston core over a gravity core is that the piston allows the best possible sediment sample to be obtained by avoiding disturbance of the sample. Shallow-bottom coring employs a rotary drill that penetrates through several feet of consolidated rock. Drilling produces low-intensity, low-frequency sound through the drill string. This methods does not use high-energy sound sources.
<b>Vibracores</b>	Obtain samples of unconsolidated sediment; may also inform the interpretation of features identified through the high-resolution geophysical surveys	Vibracore samplers typically consist of a core barrel and an oscillating driving mechanism that propels the core barrel into the sub-bottom. After the core barrel is driven to its full length, it is then retracted from the sediment and returned to the deck of the vessel. Typically, core samples range up to 6 m (20 ft) long with 8-cm (3-in) diameters in size, although some devices obtain samples up to 12 m (39 ft) long.
<b>Deep Borings</b>	Sample and characterize the geological properties of sediments at the maximum expected depths of the structure foundations	A drill rig is used to obtain deep borings. The drill rig is mounted on a jack-up barge supported by four “spuds” that are lowered to the seafloor. Geologic borings can generally reach depths of 30-61 m (98-200 ft) within a few days (based on weather conditions). The acoustic levels from deep borings can be expected to be in the low-frequency bands and below the 160-dB threshold established by the National Marine Fisheries Service to protect marine mammals.
<b>Cone Penetration Test (CPT)</b>	Supplement or use in place of deep borings	A CPT rig would be mounted on a jack-up barge similar to that used for the deep borings. The top of a CPT drill probe is typically up to 8 cm (3 in) in diameter, with connecting rods less than 15 cm (6 in) in diameter.



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