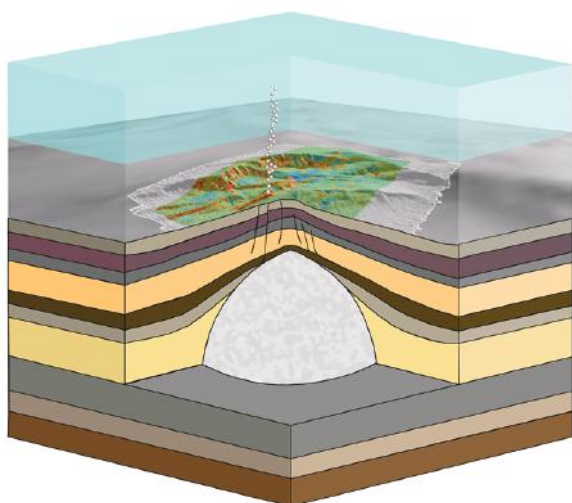


# GEOCHEMICAL SEEP HUNTING

## WHO WE ARE

The TDI-Brooks team features experts in conducting offshore Surface Geochemical “Seep Hunting” Exploration and Heat Flow programs for the world’s leading petroleum producers. TDI-Brooks and our partners have been involved for 40 years in the design and execution of numerous global ‘seep hunting’ MBES programs. Geochemical Seep-hunting campaigns reduce offshore exploration risk and cost.

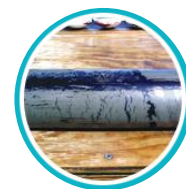
Surface Geochemical Exploration (SGE) is a petroleum prospecting tool based on the premise that traces of upward migrated petroleum from deep source rocks and reservoirs can be detected in selected seabed sediments and used to evaluate exploration potential.



Deep seismic and multibeam surveys are used to select piston coring locations based on surface expression of deep faults and other features related to conduits for upward migration of hydrocarbons.

## WHAT WE PROVIDE

- Multibeam (MBES) Core Site Selection
- Piston Core (PC) Acquisition
- Heat Flow (HF) Exploration
- Laboratory Analysis of Samples
- Geochemical Interpretation



TDI-Brooks uses a sequence of specific procedures that we developed and improved over several decades. Our method consistently yields highly accurate identification and a quantitative evaluation of potential sites with migrated oil. Preparation for your project begins with a thorough assessment of legacy seismic and other available geological data.

In the past decade, there has been increased use of multibeam bathymetric survey data (bathymetry, backscatter and water column plume) as a cost effective alternative / complementary tool that proves up charge by sampling and analyzing hydrocarbons at seabed seepage features.

## CONTACT US

TDI-Brooks  
14391 S Dowling Road  
College Station TX 77845  
USA

Phone : +1 (979) 693-3446  
Email : [info@tdi-bi.com](mailto:info@tdi-bi.com)  
Web : [www.tdi-bi.com](http://www.tdi-bi.com)

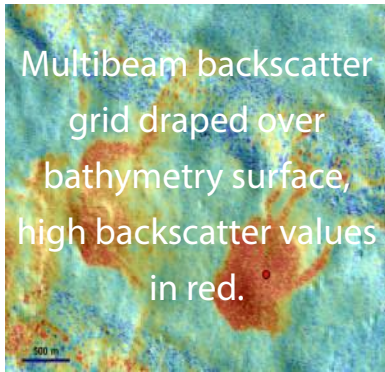


# GEOCHEMICAL SEEP HUNTING

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## MBES CORE SITE SELECTION

Multibeam echo sounders emit sound waves in the shape of a fan from directly beneath a ship's hull. These real-time on-site surveys are used to correlate the seabed or sub-bottom feature to be cored with the corresponding seismic record used originally to high-grade the site. This process can refine the best core target location, and provide sub-bottom structure, bottom hardness, and features associated with migrated petroleum on the seabed.



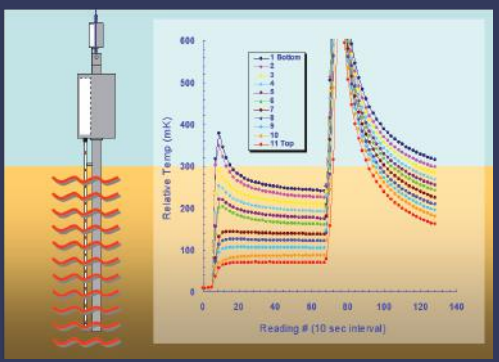
## PISTON CORE ACQUISITION

TDI-Brooks' vessels are deployed to collect sediment samples based on the MBES data collected. Using piston coring to sample depths up to 6 meters significantly reduces intracore variability due to bioturbation, loss by diffusion of gases, and mixing of natural hydrocarbon seepage or pollution in the top meter of sea floor sediments with deeper sections of the core.



## Heat Flow Probe

- 11 Thermistors spaced at 50-cm intervals
- Pressure Sensor
- Probe ° Tilt Sensor
- Water Temp Sensor
- Heat Pulse Source
- Data Logger



## HEAT FLOW EXPLORATION

TDI-Brooks has performed heat flow surveys across the globe with our heat flow probe in water depths up to 6000 meters. Heat flow measurements serve as critical calibrations in basin modeling. The measured background or equilibrium heat flow, and measured sediment thermal conductivity provide strict constraints in thermal models that determine regional scale maturation of basins with respect to oil and gas.

## SCIENTIFIC SERVICES ON A GLOBAL BASIS

TDI-Brooks is a scientific data acquisition services company specializing in multi-disciplinary oceanographic projects covering; offshore geotechnical field services, environmental baseline surveys, seabed geochemical "seep hunting" and heat flow for oil and gas exploration, offshore geophysical surveys for oil & gas, wind farm, metocean, seabed mining, dredging, LNG, and multi-disciplinary oceanographic and high-end environmental chemistry, renewables and marine research.

TDI-Brooks has over 25 years of vessel chartering and management experience and currently operates four research vessels, R/V Gyre, R/V Proteus, R/V Miss Emma McCall and R/V Brooks McCall.