

Daily Operational and Science Report
UT-GOM2-2 Coring Expedition
Terrebonne Basin, Gulf of Mexico Outer Continental Slope

1. **DATE:** 25-August-2023, 0000-2400hr

2. **LOCATION:**

2400 hr, 25-August-2023

Hole: *Helix D/V Q4000* was located over Hole UT-GOM2-2-H002

Last Drill/Core depth: 9222 ft MD RKB

RKB to Mud line: 6506 ft on Drill pipe measurements

Water depth: 6454 ft

Per Datum: 52 ft

Lat 26°39'44.2229"N, Long 091°40'33.8972"W NAD27 BLM15 Feet

3. **DESCRIPTION OF OPERATIONS:**

0000-2400 At Hole UT-GOM2-2-H002

General Operations/Maintenance: General housekeeping on weather deck and complete daily crane review/report. Offload and backload the *M/V Harvey Hermes*. Lowered groceries down the galley hatch.

0000-0055 Continue to POOH (**Hole UT-GOM2-2-H002**) the PCTB-CS coring tool in order to acquire **Core UT-GOM2-2-H002-10CS**, which represented the sixth of the planned nine consecutive PCTB-CS pressure core deployments associated with the Orange Sand Coring Campaign.

0055-0200 Prepare and RIH the PCTB-FB coring tool.

0200-0300 POOH from depth with PCTB setting tool and RIH the PCTB retrieval tool.

0300-0330 Acquire **Core UT-GOM2-2-H002-11CS**, F/9192 - T/9202 ft RKB (2686.0-2696.0 fbsf).

0330-0830 Attempted to POOH PCTB-CS, unable to pull the PCTB-CS beyond ~200 out of the coring shoe. Recover the PCTB retrieval tool.

0830-0945 R/D SLB slickline and slip/cut 100 ft wireline. R/U pack off in the TDS and SLB slickline.

0945-1200 M/U and RIH Geotek Emergency Pulling Tool, at 8826 ft RKB latched into PCTB-CS and attempt to recover tool.

1200-1300 SLB slickline pulled core barrel free and continued to pull to surface. Placed **Core UT-GOM2-2-H002-11CS** in ice shuck.

1300-1700 Prepare and RIH the PCTB-FB coring tool.

1700-1830 POOH from depth with PCTB setting tool and RIH the PCTB retrieval tool.

1830-1900 Acquire **Core UT-GOM2-2-H002-12CS**, F/9202 - T/9212 ft RKB (2696.0-2706.0 fbsf).

1900-2030 POOH PCTB-CS coring tool and transfer to the Geotek Pressure Core Processing Van.

2030-2145 Prepare and RIH the PCTB-FB coring tool.

2145-2300 POOH from depth with PCTB setting tool and RIH the PCTB retrieval tool.

2300-2330 Acquire **Core UT-GOM2-2-H002-13CS**, F/9212 - T/9222 ft RKB (2706.0-2716.0 fbsf).

2330-2400 2030 POOH PCTB-CS coring tool.

4. **OPERATIONAL PLAN (Next 24 Hours):**

After recovering **Core UT-GOM2-2-H003-13CS** advance the hole by drilling to a depth of 9277 ft RKB and acquire **Core UT-GOM2-2-H003-14CS**. Next, advance the hole by drilling to a depth of 9322 ft RKB and acquire **Cores UT-GOM2-2-H003-15CS and -16CS**.

Core UT-GOM2-2-H003-14CS, 2771.0 to 2781.0 fbsf

Core UT-GOM2-2-H003-15CS, 2816 to 2826.0 fbsf

Core UT-GOM2-2-H003-16CS, 2826.0 to 2836.0 fbsf

Orange Sand (and bounding mud) Coring Campaign – End of Program

Activity	Ft RKB	fbsf	Completed
H002-05CS Start	9132	2626	X
H002-05CS End	9142	2636	X
H002-06CS Start	9142	2636	X
H002-06CS End	9152	2646	X
H002-07CS Start	9152	2646	X
H002-07CS End	9162	2656	X
H002-08CS Start	9162	2656	X
H002-08CS End	9172	2666	X
H002-09CS Start	9172	2666	X
H002-09CS End	9182	2676	X
H002-10CS Start	9182	2676	X
H002-10CS End	9192	2686	X
H002-11CS Start	9192	2686	X
H002-11CS End	9202	2696	X
H002-12CS Start	9202	2696	X
H002-12CS End	9212	2706	X
H002-13CS Start	9212	2706	X
H002-13CS End	9222	2716	X

5. DOWNHOLE LOGGING OPERATIONS:

Hole: NA

Wireline Totals (directional): NA

6. CORE OPERATIONS AND DATA:

Hole: Hole UT-GOM2-2-H002

G-APC Coring Totals: NA

G-XCB Coring Totals: NA

PCTB-CS Coring Totals:

Core UT-GOM2-2-H002-11CS: 0.59 ft (5.9% recovery), 4708 psi.

Coring F/ 9192 - T/ 9202 ft RKB at 80 rpm, maintaining 10-12k on bit, CMT pumping 10.5 ppg WBM at 2.0 bpm and 58 psi.

Core UT-GOM2-2-H002-12CS: 8.20 ft (82% recovery), 0 psi.

Coring F/ 9202 - T/ 9212 ft RKB at 80 rpm, maintaining 10-12k on bit, CMT pumping 10.5 ppg WBM at 2.0 bpm and 58 psi.

Core UT-GOM2-2-H002-13CS: NA ft (NA% recovery), 0 psi. (in core receiving)

Coring F/ 9212 - T/ 9222 ft RKB at 80 rpm, maintaining 10-12k on bit, CMT pumping 10.5 ppg WBM at 2.0 bpm and 58 psi.

PCTB-FB Coring Totals: NA

7. DOWNHOLE MEASUREMENTS

Hole: NA

Pressure and Temperature Tool Deployment (T2P): NA

Temperature Tool Deployment (APCT-3): NA

8. SCIENCE ACTIVITIES

The last 24 hours of operations on the *Helix D/V Q4000* has dealt with advancing **Hole UT-GOM2-2-H002** from a depth of 2686 fbsf (9192 ft RKB) to a total depth of 2716 fbsf (9222 ft RKB) by the deployment of three PCTB-CS pressure cores, marking the end of the Orange Sand Coring Campaign (Figure 1).

In review, the first core recovered today was **Core UT-GOM2-2-H002-11CS**, which was recovered at a pressure of 4708 psi, and yielded a core section length of only about 0.59 ft. **Cores UT-GOM2-2-H002-12CS and -13CS**, which targeted the well log inferred mud-rich section at the base of the Orange Sand, were recovered unsealed and not at pressure. However, both cores were nearly filled with sediment, which appeared to be mostly mud rich and contained gas voids.

For the three PCTB-CS cores recovered today, two of the cores were recovered without pressure (**Cores UT-GOM2-2-H002-12CS and -13CS**). The coring tool DST recorded temperature and pressure histories for the two cores that failed to maintain pressure were examined to assess any performance issues associated with these two core deployments. This analysis focused on the comparison of the PCTB-CS set boost pressure, which was set at 4500 psi for both of these cores, and the calculation of the likely bottom hole pressure conditions. Assuming a total hole depth of 9222 ft RKB and a mud weight of 10.3 ppg, we would expect a downhole static pressure of about 4434 psi, which is near the pre-deployment set boost pressure for the PCTB-CS. It was suggested that the reason for the tool not sealing may be because of the small difference between the core tool set boost pressure and the downhole measured and calculated static pressure. It has been shown in the past that some differential pressure is required to effectively seal the lower ball valve and other seals in the PCTB core system. Thus, a plan was developed and reviewed to raise the boost pressure for the next PCTB-CS deployment to a targeted pressure of 5200 psi. Because of the operational requirement to drill down to the core depth of 9277 ft RKB (**Core UT-GOM2-2-H002-14CS**), we do not expect to acquire this core until early on the afternoon of 26-AUG-23.

The Scientific Party is working on finalizing the writing assignments in support of the hole section descriptions in the Expedition Report and processing samples and data that have been collected during the expedition.

There have been no new COVID cases on the *Q4000* in the last eleven days.

9. ACRONYMS

bpm	Barrels per minute
Fish	The object to be recovered from the borehole/BHA
gpm	Gallons per minute
M/U	Make up
PCATS	Pressure Core Analysis and Transfer System
PCTB-CS	Pressure coring tool with ball-cutting shoe version.
POOH	Pull out of hole
psi	Pounds per square inch

P/U	Pick up
RIH	Run in hole
RKB	Depth measured from the rig floor
rpm	Revolutions per minute
R/U	Rig up
SLB	Schlumberger
Slickline	Wireline used to deploy and recover core, etc.
TD	Total depth
TDS	Top drive system
WOB	Weight on bit

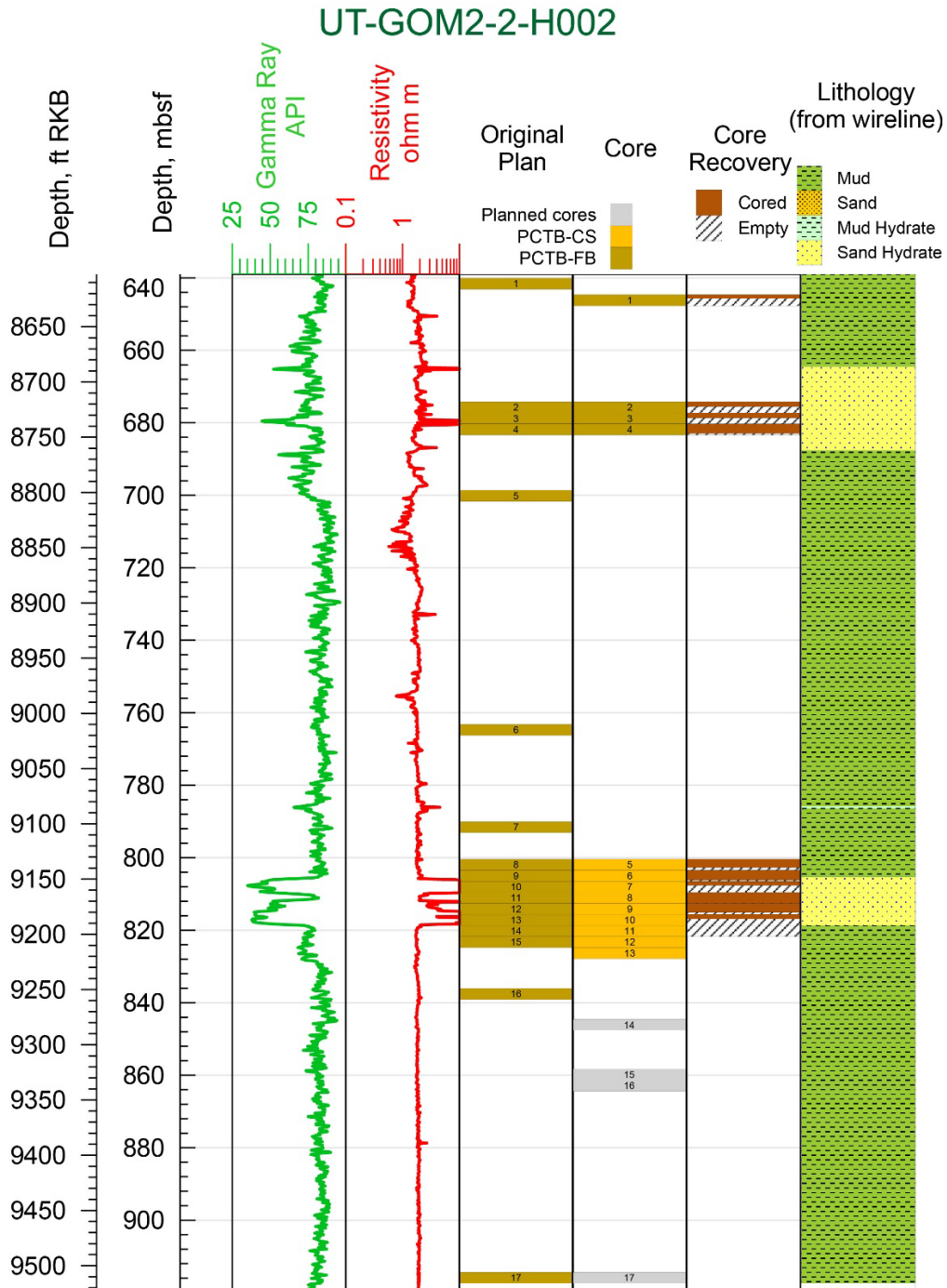


Figure 1: Core recovery plot for the UT-GOM2-2-H002 well as of 24:00 hr 25-AUG-2023. 'PCTB-FB' records core recovered by the face bit version of the Pressure Coring Tool with Ball (PCTB).