

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

1. DATE: 11-August-2023, 0000-2400hr

2. LOCATION:

2400 hr, 11-August-2023

Hole: *Helix D/V Q4000* was located over Hole UT-GOM2-2-H003

Last Drill/Core depth: 7015 ft RKB

RKB to Mud line: 6506 ft on Drill pipe measurements

Water depth: 6454 ft (updated 05-AUG-2023)

Per Datum: 52 ft

Lat 26°39'46.50488"N, Long 091°40'33.82464"W

3. DESCRIPTION OF OPERATIONS:

0000-2400 At Hole UT-GOM2-2-H003

0000-0130 Monitor the well while circulating 8.6 ppg SW at 70 psi while reciprocating drill string

0130-0145 Pump 25 bbl 10.5 ppg Hi-Vis sweep at 75 psi while reciprocating drill string

0145-0530 Monitor the well while circulating 8.6 ppg SW at 70 psi while reciprocating drill string

0530-0600 Pump 25 bbl 10.5 ppg Hi-Vis sweep at 75 psi while reciprocating drill string

0600-0930 Monitor the well while circulating 8.6 ppg SW at 70 psi while reciprocating drill string

0930-1200 Pump 25 bbl 10.5 ppg Hi-Vis sweep at 75 psi while reciprocating drill string

1200-1330 Monitor the well while circulating 8.6 ppg SW at 70 psi while reciprocating drill string

1330-1500 Pump 25 bbl 10.5 ppg Hi-Vis sweep at 75 psi while reciprocating drill string

1500-1730 Monitor the well while circulating 8.6 ppg SW at 70 psi while reciprocating drill string

1730-1800 Pump 25 bbl 10.5 ppg Hi-Vis sweep at 75 psi while reciprocating drill string

1800-2130 Monitor the well while circulating 8.6 ppg SW at 70 psi while reciprocating drill string

2130-2400 Pump 25 bbl 10.5 ppg Hi-Vis sweep at 75 psi while reciprocating drill string

4. OPERATIONAL PLAN (Next 24 Hours):

Continuing to conduct repairs on the TDS, while conditioning and reciprocating the drill string.

5. DOWNHOLE LOGGING OPERATIONS:

Hole: NA

Wireline Totals (directional): NA

6. CORE OPERATIONS AND DATA:

Hole: UT-GOM2-2-H003

G-APC Coring Totals: NA

G-XCB Coring Totals: NA

PCTB-CS Coring Totals: NA

PCTB-FB Coring Totals: NA

7. DOWNHOLE MEASUREMENTS

Hole: UT-GOM2-2-H003

Pressure and Temperature Tool Deployment (T2P): NA

Temperature Tool Deployment (APCT-3): NA

8. SCIENCE ACTIVITIES

The *Harvey Hermes Supply Vessel* arrived in Port Fourchon at 1525 hr on 11-AUG-23 and immediately transferred the damaged Q4000 TDS blower motor (cooling fan motor) to Houma Armature Works for rewinding of the motor coil. The blower motor is expected to be returned to the Q4000 between 1200 hr and 2400 hr on 12-AUG-23 (via helicopter). We are currently circulating the hole and running regularly scheduled Hi-Vis mud sweeps as needed while reciprocating the drill string. The Q4000 remained in “Vessel, ROV & Tubular Downtime” status throughout the day.

The onboard scientific operations over the last 24-hours focused on processing through the onboard UT and Geotek labs the sediment, gas, and water samples collected from the previously acquired conventional wireline cores and the conventionalized pressure cores. Included at the end of this report are two downhole well log and core recovery displays (Figures 2 and 3) that compare the pre-expedition core plan with the actual results to date of the conventional and pressure coring program in Hole UT-GOM2-2-H003. Also shown on each of the core recovery displays are the depths where the APCT-3 was ran with the G-APC core barrel.

Based on the excellent quality of pressure core UT-GOM2-2-H003-19CS, we were able to use the PCATS acquired core scans and compare them with the downhole log data collected from Hole WR H001 in 2009. The core was collected with the top at 6870 ft RKB. After plotting the data and comparing the bulk density (downhole log) and gamma density (core scan) curves (Figure 1), we believe the most likely depth correlation with the acquired core is about ~3ft deeper at depth of 6873 ft RKB. In Figure 1, we have shifted the Blue curve down 3’ relative to the depth at which it was acquired in order to illustrate this correlation. This is an encouraging result and we will continue to examine future pressure cores to see if we are “on depth” so that we can effectively core deeper key targets such as the red, blue and orange sands as defined in the project prospectus.

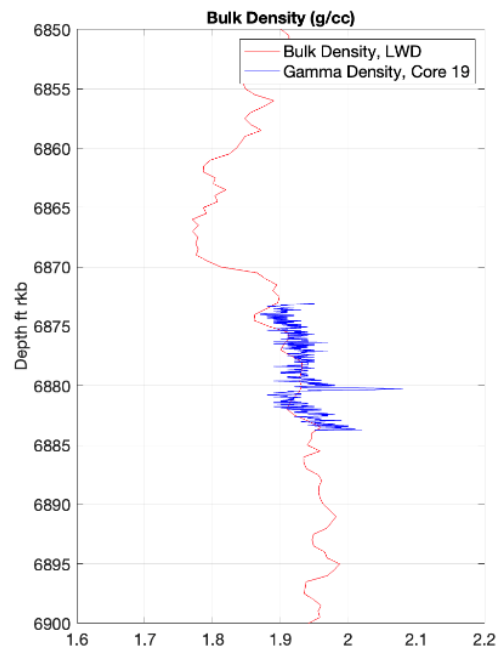


Figure 1: Downhole (LWD) bulk density log from Hole WR H001 and gamma density core scan of Core UT-GOM2-2-H003-19CS. The core data have been shifted 3 feet downwards in order to correlate the core data to the log data.

Shipboard analysis of recovered pressure cores has also included the approval of the “core cut plan” for Core UT-GOM2-2-H003-19CS, which will involve the cutting the 3.5 m long core into three nearly equal lengths and the controlled quantitative degassing of each core section to precisely determine the volume of gas evolved from each section. These analysis will again be used to further define the dissolved methane concentration profile at the site of Hole UT-GOM2-2-H003. Data on in situ methane solubility helps to define the potential distribution of gas hydrate in a marine sedimentary section. Pressure core UT-GOM2-2-H003-08CS has also been fully process through PCATS and was sub-sectioned for porewater, microbiology, and geomechanical samples in the conventional Core Receiving Lab.

We are also happy to report that no new COVID cases were reported today and that the two scientists with COVID are feeling much better.

The Scientific Party continued to work on writing both the “Methods” and “Hole H003” results chapters for the Expedition Report.

9. ACRONYMS

bpm	Barrels per minute
Fish	The object to be recovered from the borehole/BHA
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
RIH	Run in hole
RKB	Depth measured from the rig floor
SLB	Schlumberger
Slickline	Wireline used to deploy and recover core, etc.
TD	Total depth
TDS	Top drive system

UT-GOM2-2-H003

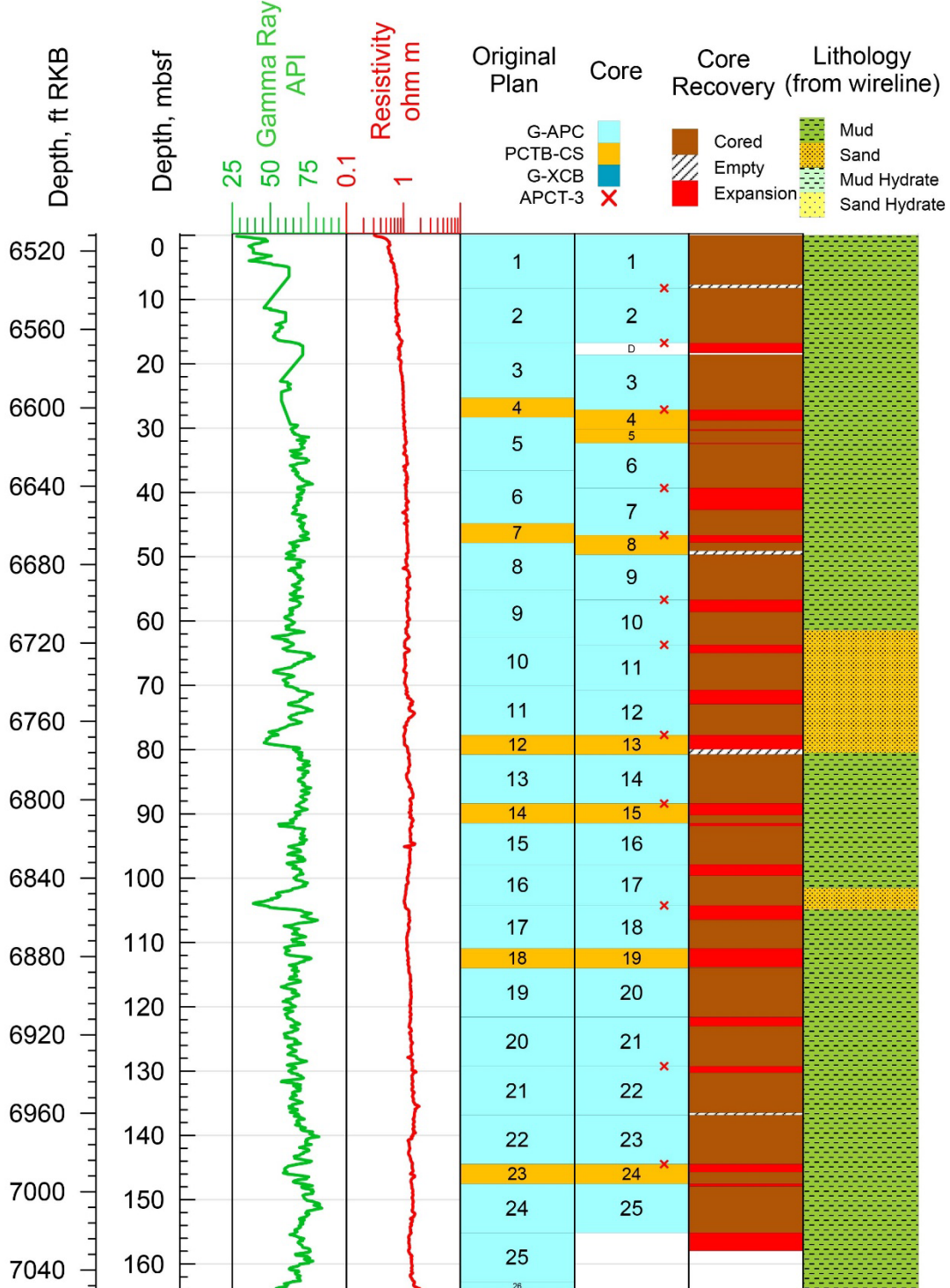


Figure 2: Core recovery plot for the UT-GOM2-2-H003 well as of 24:00 hr 11-AUG-2023. 'G-APC' records core recovered by the Geotek Advanced Piston Corer. 'G-XCB' records core recovered by the Geotech cutting shoe coring cool (the G-XCB core systems has not yet been deployed). 'PCTB-CS' records core recovered by the cutting shoe version of the Pressure Coring Tool with Ball (PCTB). 'APCT-3' records the location where temperatures were measured with a specially instrumented coring shoe.

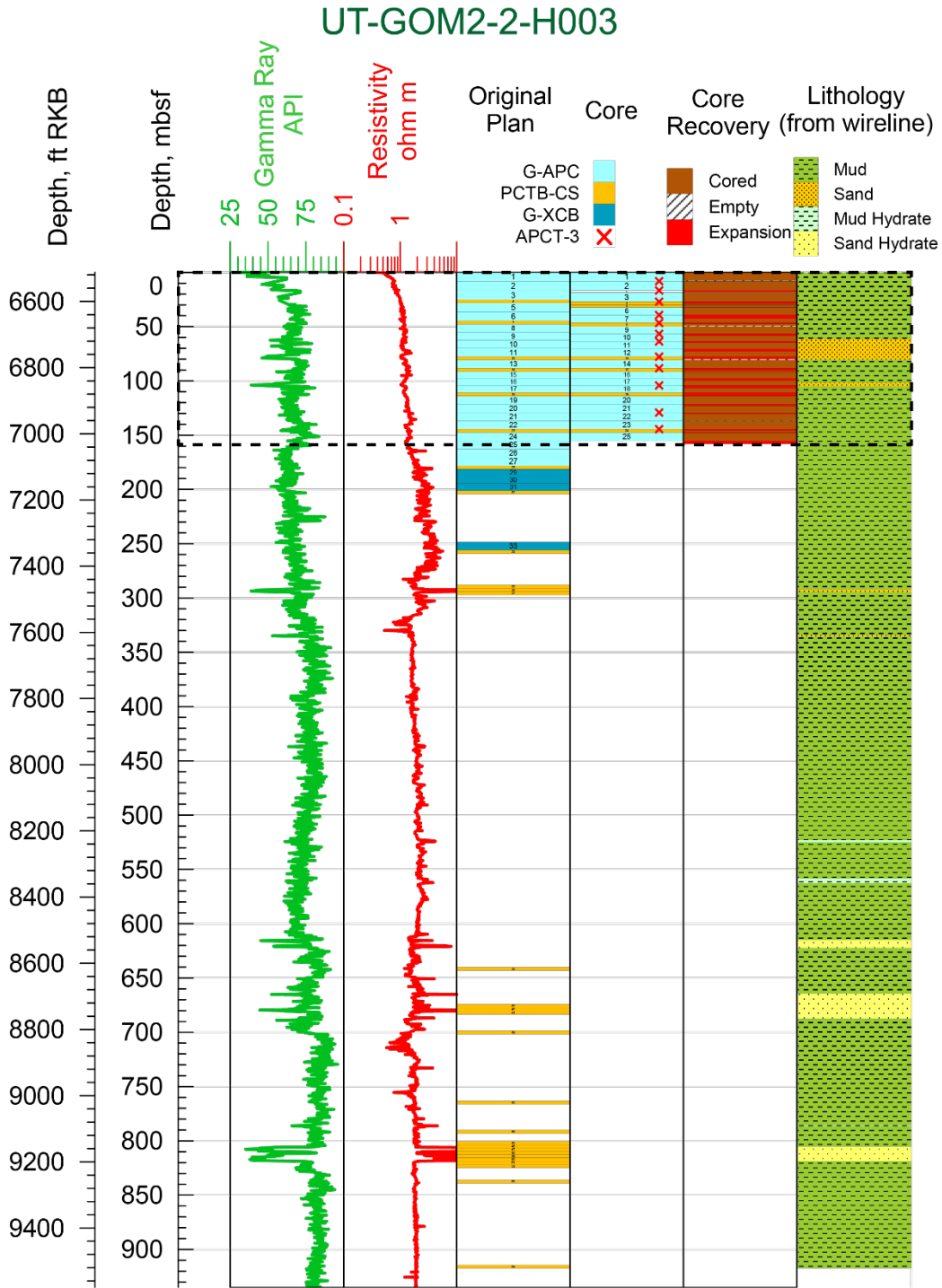


Figure 3: Planned and actual core recovery for the entire UT-GOM2-2-H003 well. 'G-APC', 'PCTB-CS', G-XCB, and 'APCT-3' are defined in the caption to Figure 2. Dashed box defines the interval cored through 24:00 hr 11-AUG-2023.