

# IODP EXP 358 Daily Geomechanics Report

Report #017 20181126 Final 4990

## RTG Team

RTG Supervisor(s)	David Castillo / Thomas Finkbeiner / Demian Saffer
RTG Watch Lead (00:00-12:00)	Kan Aoike
RTG Watch Lead (12:00-24:00)	Adam Wspanialy
RTG Office Support	N/A

## Well Status (as of 06:00 Nov.27 2018)

Site Name:	C0002	Hole Name:	Q
Water Depth:	1,939.0 m	RT-MSL:	28.5 m
Current Depth:	4,990.0 mBRT (4,988.0) mTVD	Section TD:	4,990 mBRT (4,988.0) mTVD
Section #:	1	CSG Depth / Size:	(4855.0) mBRT 11-3/4 "
Static MW:	1.37 sg	Current ECD:	1.41 sg
FIT/LOT/XLOT:	FIT maximum pressure = 1.45 sg, Possible "LOP" = 1.43 sg @4855 mBRT		
Current formation/ lithology:	Shale		
Sensor Offsets from the Bit:	PDC Bit: 0 m arcVision 675: (APWD: 2.55 m, Resistivity: 3.26 m, GR: 3.31 m) TeleScope 675: (IWOB: 7.43 m, GR: 10.15 m, Direction + Inclination: 10.80 m)		
Current Operations:	Continued POOH 8-1/2" x 12-1/4" LWD BHA. Encountered HPS stall and high standpipe pressures at 4780 mBRT from 08:10. Attempted to secure circulation and to rotate pipe but no success. POOH to 4047 mBRT. Confirmed Z-reamer having been activated. POOH to 3897 mBRT for confirmed BHA condition. Started POOH to the surface at 16:00. Z-reamer on surface 03:20 Nov.27. Bit on surface 04:10. Confirmed all bit nozzles tightly plugged with sand-sized cuttings. Made up BHA for Z-reamer operation check.		

## Geomechanics Alert

<b>GREEN</b>	<p><b>Green</b> = Projected model remains accurate  <b>White</b> = Unanticipated deviation from model which <i>should not</i> affect drilling  <b>Yellow</b> = Unanticipated deviation from model which <i>may</i> affect drilling  <b>Red</b> = Imminent requirement to stop drilling</p>
Basis for Alert Level + Recommendations	No issue with 1.37 sg MW for Section 1.

## Principal Findings

N/A

## Observations Summary

*Use this space to discuss any observations while drilling, running casing etc.*

Fracture Gradient	N/A
Pore Pressure	N/A
Wellbore Breakout	N/A
Tensile Failure	N/A
Drilling Parameters	N/A
Other	

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## Analysis

### LWD Data Analysis

N/A

### Drilling Experience Analysis

N/A

### Cuttings Analysis

N/A

### Cavings Analysis

N/A

### SFIB Analysis

N/A

## Geomechanical Model Review (a review of the FIT results)

Potentially no changes to the pre-drill geomechanical model because FIT (Formation Integrity Test) does not directly contribute sufficient information for constraining or refining subsurface earth stresses. By design, FIT is intended to determine whether the planned mud weight can be supported by the formation.

The planned mud weight of 1.37 sg with an operational safety upper margin of +0.06 sg (surge pressure), required a formation pressure integrity up to 1.43 sg. The FIT in the C0002Q rat-hole achieved that objective. It is possible that a leak-off pressure of 1.43 sg may have occurred, but a maximum pressure of 1.45 sg was achieved before the pumps were shut-in. If a leak-off pressure of 1.43 sg did occur, this implies a leak-off-test (LOT) had occurred (no longer a FIT). A leak-off-pressure of 1.43 sg may be interpreted as a possible approximation of S3 or Shmin stress magnitudes.

This interpretation would require a pass of the LWD image log across the rat-hole section to identify whether a new tensile was created, or drilling fluids leaked into a pre-existing bedding plane or natural fracture. The former would have direct implications of S3, while the latter would require further information such as bedding plane orientation.

However, since no LWD data acquisition is planned for the rat hole section, we will have no chance to confirm which case occurred. Therefore, we continue to call this test a FIT.

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