

# IODPEXP 358 Daily Geomechanics Report

Report #004 20181113 Final 4867

## 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)	Emily Wisbey
RTG Office Support	N/A

## Well Status (as of 06:00 on 14 Nov. 2018)

Site Name:	C0002	Hole Name:	Q
Water Depth:	1,939.0 m	RT-MSL:	28.5 m
Current Depth:	4,867.2 mBRT (4,865.3) mTVD	Section TD:	4,867.2 mBRT (4,864.0) mTVD
Section #:	0	CSG Depth / Size:	- mBRT
Static MW:	1.37 sg	Current ECD:	- sg
Current formation/ lithology:	Shale		
Sensor Offsets:	-		
Current Operations:	Continued POOH Milling BHA and on surface at 09:40. Confirmed that mills became undergauge. RIH another Milling BHA for dressing the window from 14:25. No success to pass through the 11-3/4" CSG hanger, then POOH BHA to change out from 04:30 Nov. 14. 3004.0 mBRT as of 06:00.		

## 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 to use 1.37 sg MW as of this moment.

## Principal Findings

N/A

## Observations Summary

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

Fracture Gradient	
Pore Pressure	
Wellbore Breakout	
Tensile Failure	
Drilling Parameters	
Other	

## Analysis

### LWD Log Analysis

N/A

### Drilling Experience Analysis

N/A

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## Cuttings Analysis

N/A

## Cavings Analysis

Middle to coarse pebble-sized blocky cavings were recovered from the kick-off window with clayey cuttings adhered in between blades of the middle mill on the Milling BHA. No cavings with so large sizes had been seen at the shakers during the milling operations. They consist of mudstone, subangular to subrounded in shape, moderately hard but fragile in general. They may be derived from the original hole because of their rounded shapes. However, in case that they had spalled from the rat hole wall and even if they had originally sharp edges, they may have a chance to be worn out after trapped in the mill. Therefore, it is difficult to judge where they came from. In either case, we need to consider that a certain amount of larger cavings are still possibly accumulated in the rat hole.



## 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  $S_3$  or  $S_{hmin}$  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

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fracture. The former would have direct implications of S3, while the latter would require further information such as bedding plane orientation.

Therefore, for now we will continue to call this test a FIT until we learn more from the LWD image data after it passes through the rat-hole.

