

IODP EXP 358 Daily Geomechanics Report

Report #045 20181224

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)	Toby Colson

Well Status

Site Name:	C0002	Hole Name:	R
Water Depth:	1,939.0 m	RT-MSL:	28.5 m
0600h Depth:	4,807.9 mBRT (4,809.9) (mTVD)	Section TD:	5,667.5 mBRT (5,664.5) (mTVD)
Section #:	0	CSG Depth/Size:	4757.0 mBRT 11-3/4 inches
Static MW:	1.39 sg	Current ECD:	(1.41) sg
FIT/LOT/ XLOT:	1.46sg FIT @ 4,757mBRT.		
Current formation/ lithology:	Shale		
Sensor Offsets from the Bit:	TeleScope 675: (Direction + Inclination: 18.37 m)		
Other BHA Offsets from the Bit:	8-1/2" Insert Rock Bit: 0~0.25 m 8.125" Stabilizer: 8.47~10.13 m 2 x 6-3/4" Non-Magnetic Drill Collar + TeleScope 675: 10.91~32.58 m 9 x 6-3/4" Drill Collar: 32.58~117.17 m 6-1/2" Hydraulic Jar: 117.17~127.10 m 2 x 6-3/4" Drill Collar: 127.10~145.76 m 12 x 5.68" Heavy Weight Drill Pipe: 146.56~257.51 m Top of BHA: 258.51 m		
Current Operations:	Drilled 8-1/2 " hole to 4810 mBRT. Worked stuck pipe free. Drilled to 4798 mBRT. Worked stuck pipe free. Circulated, pulled back to casing and raised MW to 1.39 SG.		

Geomechanics Alert

GREEN	<p>Green = Projected model remains accurate White = Unanticipated deviation from model which <i>should not</i> affect drilling Yellow = Unanticipated deviation from model which <i>may</i> affect drilling Red = Imminent requirement to stop drilling</p>
<p>Basis for Alert Level + Recommendations</p>	<p>Current observations remain consistent with model. There remains no evidence of isotropic breakouts. However, multiple stuck pipe events may have amplified anisotropic failure and created additional fill.</p> <p>To aid in wellbore stability, preventing further anisotropic failure and help in further cleaning the wellbore. It was recommended to raise the mud weight to 1.39 SG for Section 1.</p>

Principal Findings

N/A

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Observations Summary

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

Fracture Gradient	N/A
Pore Pressure	Total gas elevations ~3 % from 22:00 Dec.23 to 02:00 Dec.24 and ~3.3 %, from 15:00 to 17:00 Dec.24, mainly composed of C1. No indications of overpressure observed.
Wellbore Breakout	N/A
Tensile Failure	N/A
Drilling Parameters	N/A
Other	N/A

Analysis

Drilling Experience Analysis

Experienced a stuck pipe with pack off event at 4810 mBRT. Worked pipe along with jarring for 2.5 hours and then succeeded to free. After circulation and resumption of drilling, experienced again a stuck pipe with pack off event at 4795 mBRT. Pulled back BHA into CSG and increased MW from 1.37 sg to 1.39 sg along with hole cleaning. Returned to the hole and commenced reaming/washing down. However, hard to go down below 4783 mBRT, the same depth where the 1st pack-off event occurred at 20:30 on Dec.23. Tried to find the original kick off hole with gentle drilling parameters avoiding to make another kick off hole. The interval around 4783 mBRT is possibly distorted in shape and filled with cuttings/cavings.

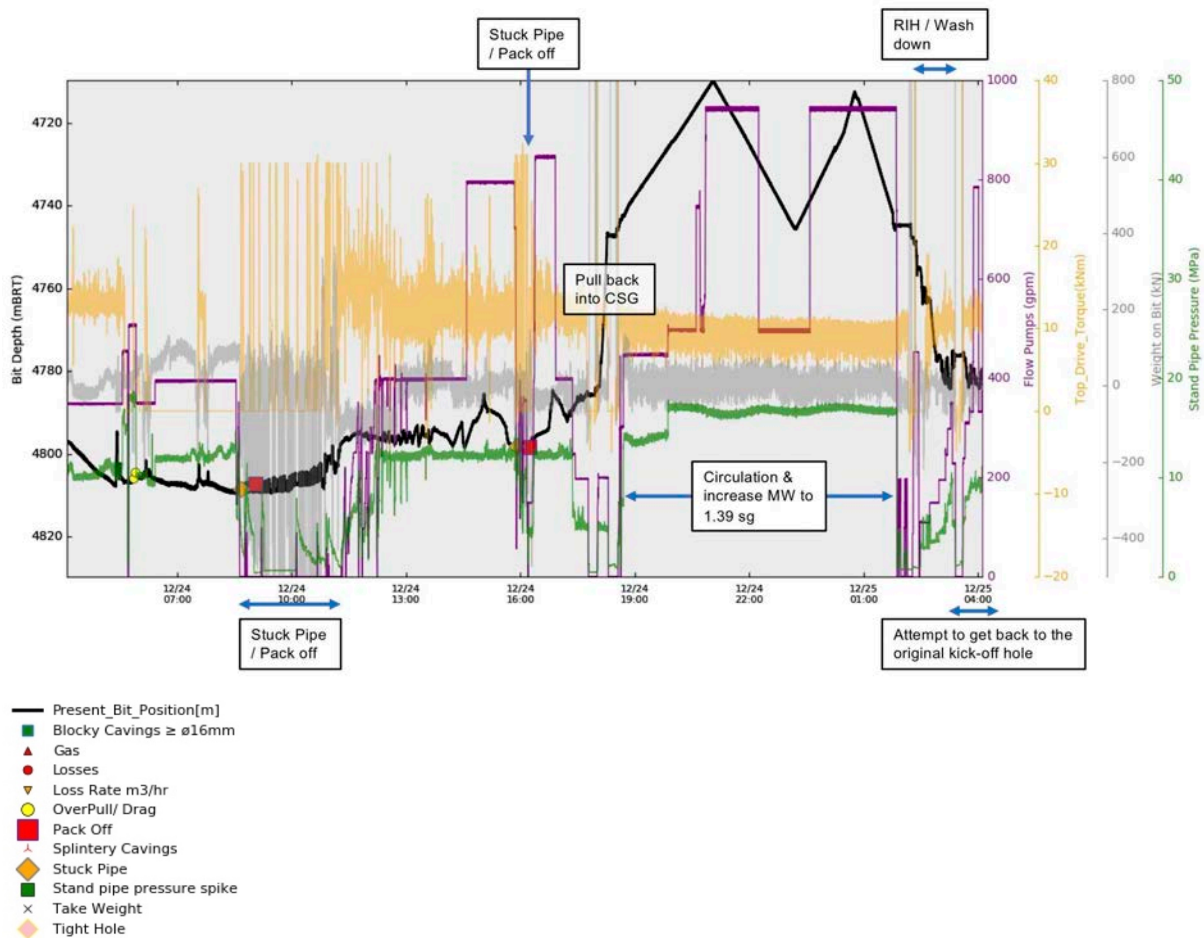


Figure 1: Drilling experiences over the last 24 hrs (~04:00 Dec.25).

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Cuttings and Cavings Analysis

Cuttings volume remained low after 06:00 Dec.24, typically blocky and approximately 10 mm in size. No notable indications of wellbore instability or consequence of stuck pipe was seen at the shakers. It remains possible that because flow rate was below 400 gpm (Telescope LWD tool in hole was rated at less than 500 gpm) larger cavings were not been cleared.

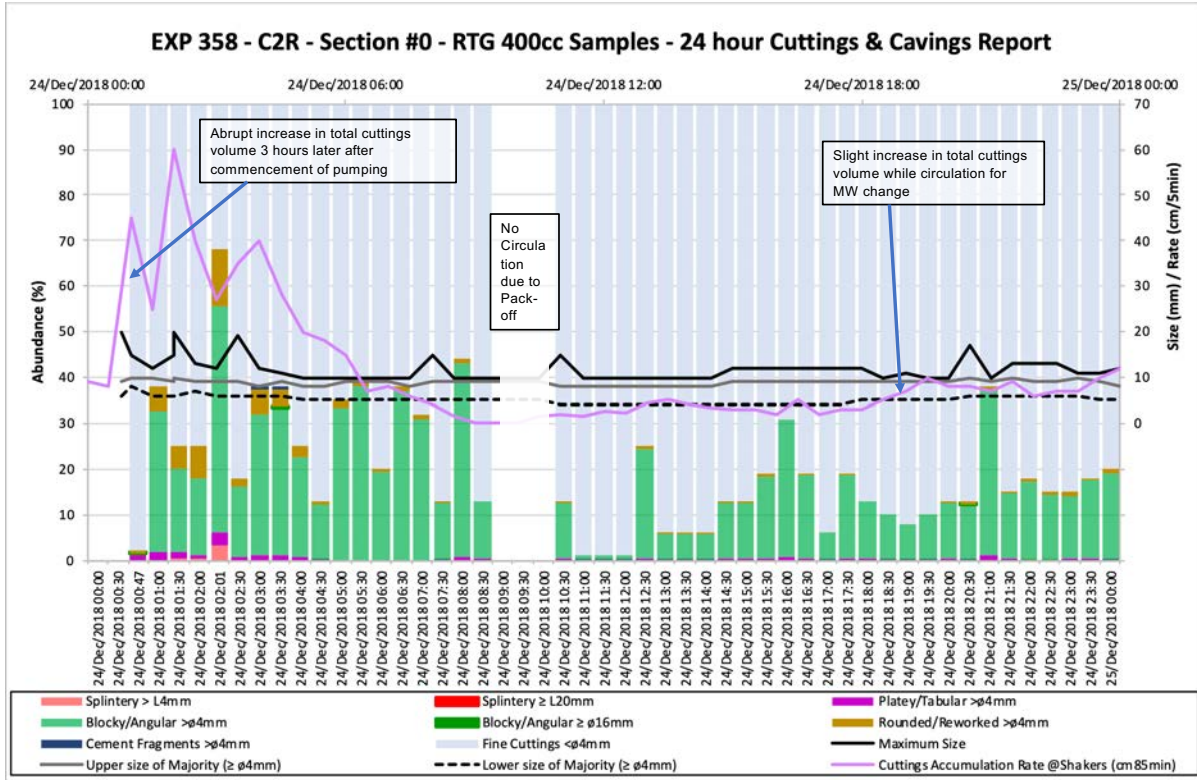


Figure 2: Analysis of cuttings/cavings > ø 4mm (taken from 400cc RTG Samples) over last 24 hrs (~24:00 Dec.24).

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Figure 4: Example of cuttings/cavings > \varnothing 4mm (taken from 400cc RTG Samples).

LWD Data Analysis

N/A

SFIB Analysis

No further updates

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Geomechanical Model Review

No change in the current stress model.

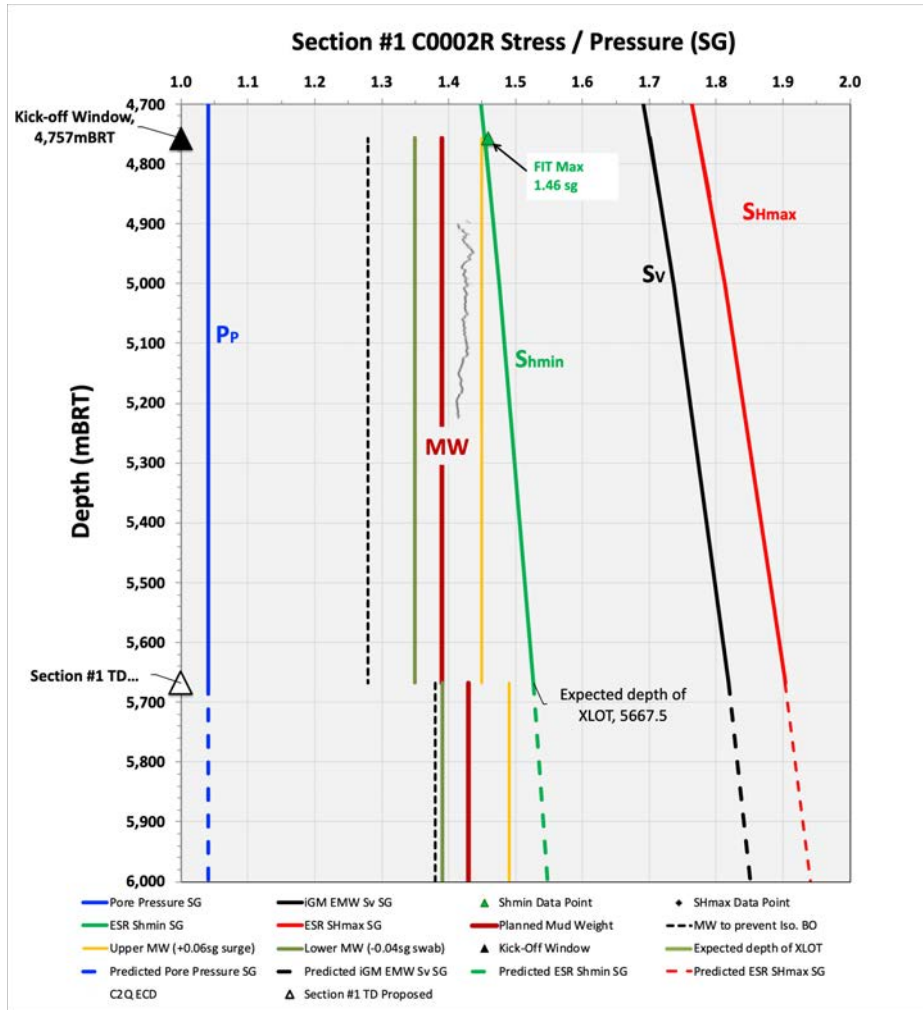


Figure 5: Current stress model for Section #1

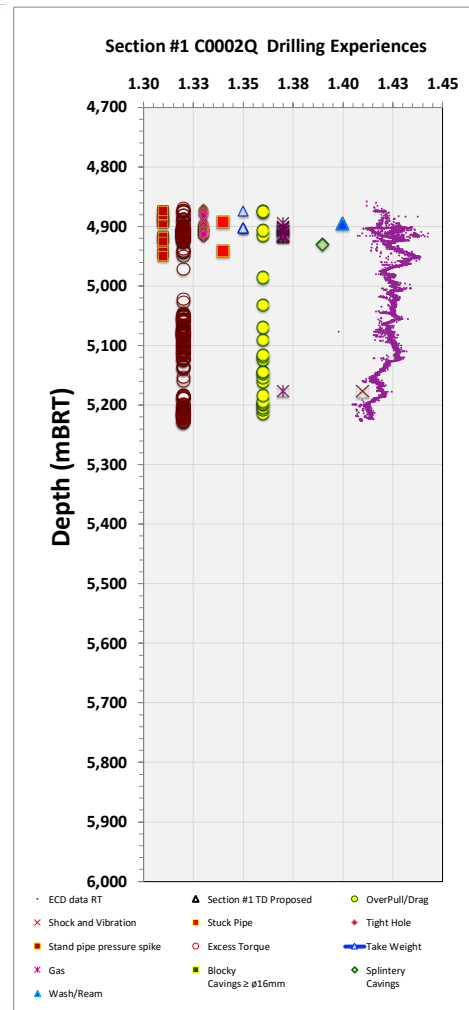


Figure 6: C0002Q Drilling Experiences