

IODP EXP 358 Daily Geomechanics Report

Report #069 20190117

RTG Team

RTG Supervisor(s)	David Castillo / Thomas Finkbeiner / Demian Saffer
RTG Watch Lead (00:00-12:00)	Emily Wisbey
RTG Watch Lead (12:00-24:00)	Kan Aoike

Well Status

Site Name:	C0002	Hole Name:	R
Water Depth:	1,939.0 m	RT-MSL:	28.5 m
0600h Hole Depth:	5,052.0 mBRT (5049.0 mTVD)	Section TD:	5,667.5 mBRT (5,664.5 mTVD)
Section #:	1	CSG Depth/Size:	4,818.0 mBRT 11-3/4" ESET inches
Static MW:	1.39 sg	Current ECD:	- sg
FIT/LOT/ XLOT:	N/A Note: 1.46sg FIT @ 4,757mBRT		
Current formation/ lithology:	Shale		
Sensor Offsets from the Bit:	N/A		
Other BHA Offsets from the Bit:	N/A		
Current Operations:	Continued attempting to free the Drill Out Assembly. Pressure tested 9-5/8" x 11-3/4" ESET expandable casing.		

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>
Basis for Alert Level + Recommendations	<p>1.39 sg remains recommended MW for Section 1. No further change in wellbore condition has been observed.</p>

Principal Findings

N/A

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Observations Summary

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

Analysis

Drilling Experience Analysis

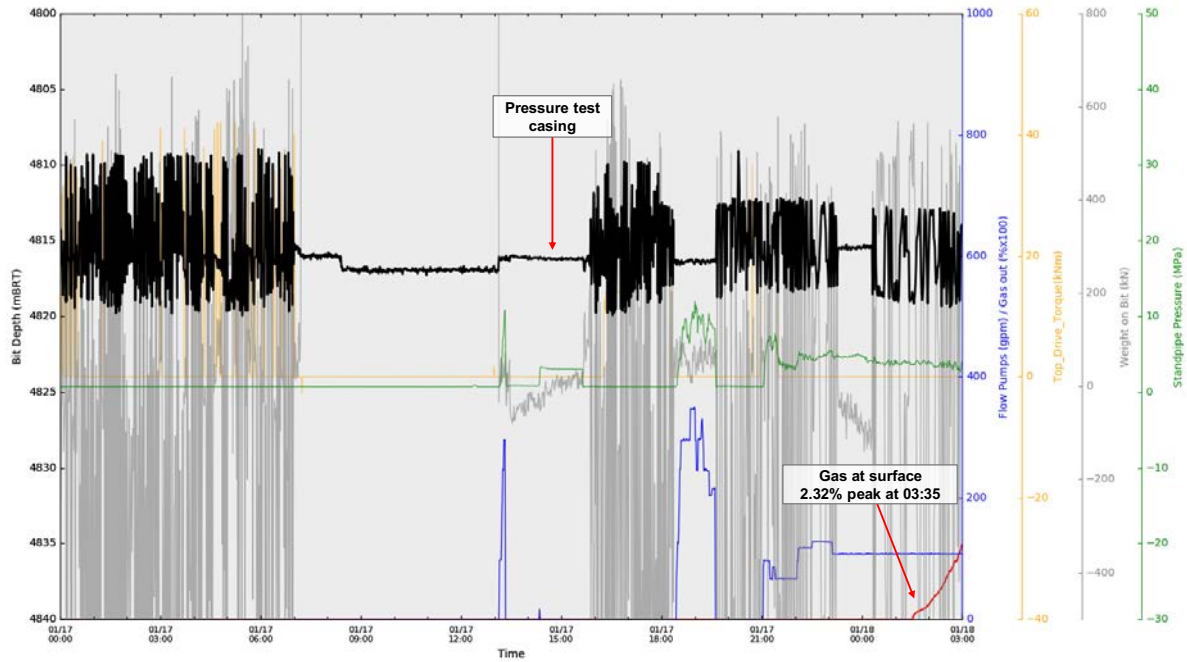


Figure 1 Drilling Experiences over last 24hrs

A gas peak of ~2.32% arrive at 03:35hrs on the 18th January, corresponding with a lag time of ~16:20hrs on the 17th January. In the previous 48hrs gas out was constant at 0%.

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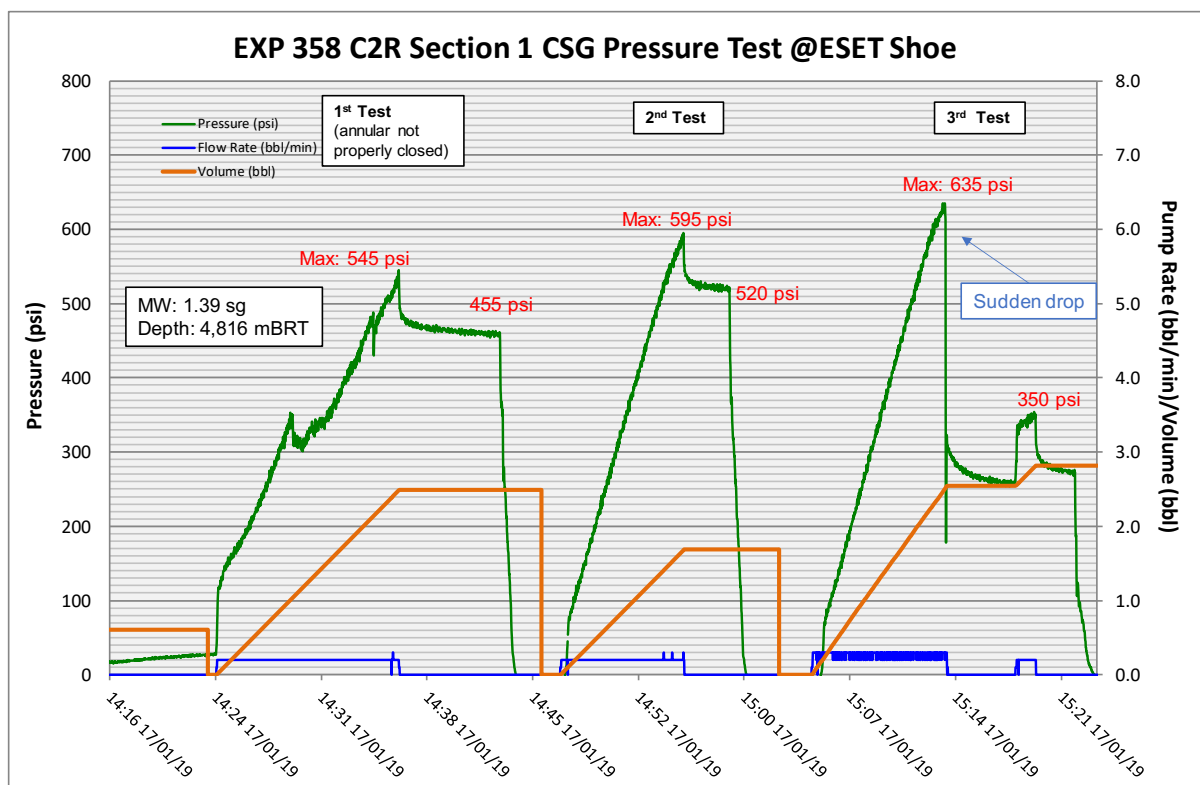


Figure 2 Results of 9-5/8" x 11-3/4" ESET Casing Pressure Test

Three pressure tests were completed on the 9-5/8" x 11-3/4" ESET expandable casing.

- Pressures from the first test are unreliable, as the annular preventer was not fully closed and allowed a leak path for fluid.
- The second test to 595psi was a good test (1.48sg).
- The third test was good until 635psi (1.48sg) when it experienced an instant loss in pressure to 178psi, before instantly building back up to 249psi before the cement pump was shut down.
 - This instant pressure loss is not characteristic of a fracture induced in the formation, as there was no fracture propagation while pumping continued and the system managed to immediately recover some of the lost pressure (back to 249psi).
 - There were no mud losses to the system (2.3bbl + 0.3bbl pumped / 2.9bbl returned) during the third test
 - The volume pumped to achieve 635psi (2.3bbl) is comparable to that of the casing test performed prior to RIH with the DOC assembly (2.1-2.2bbl). The expected pumped volume if the mill was through the casing would be greater (a barrel, perhaps).
 - In the case where the mill has exited the shoe, then the sudden pressure drop may indicate the breakdown of the cement or formation around the shoe. If the mill had not exited the shoe, the drop in pressure may also indicate that breakdown was initially in the cement near the shoe and deeper into the cement and/or formation and/or debris in the hole. Either way, the renewed permeability could have provided a pathway for the gas seen at 03:00 on the 18th January 2019.
 - It is impossible to isolate the cause of the instant pressure loss due to many uncertainties in the system (e.g., cement, formation, rock debris in the hole).

Cuttings and Cavings Analysis

No RTG samples collected due to intermittent circulation. However, cuttings coming over the shakers continue to be very small (less than 2mm) in size. Although the flow rate was limited to ~100-150gpm (w/ 400gpm on the boost) it is likely the flow rate was not sufficient to lift large cuttings up the annulus.

LWD Data Analysis

N/A

SFIB Analysis

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No further updates.

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Geomechanical Model Review

No change in the current stress model.

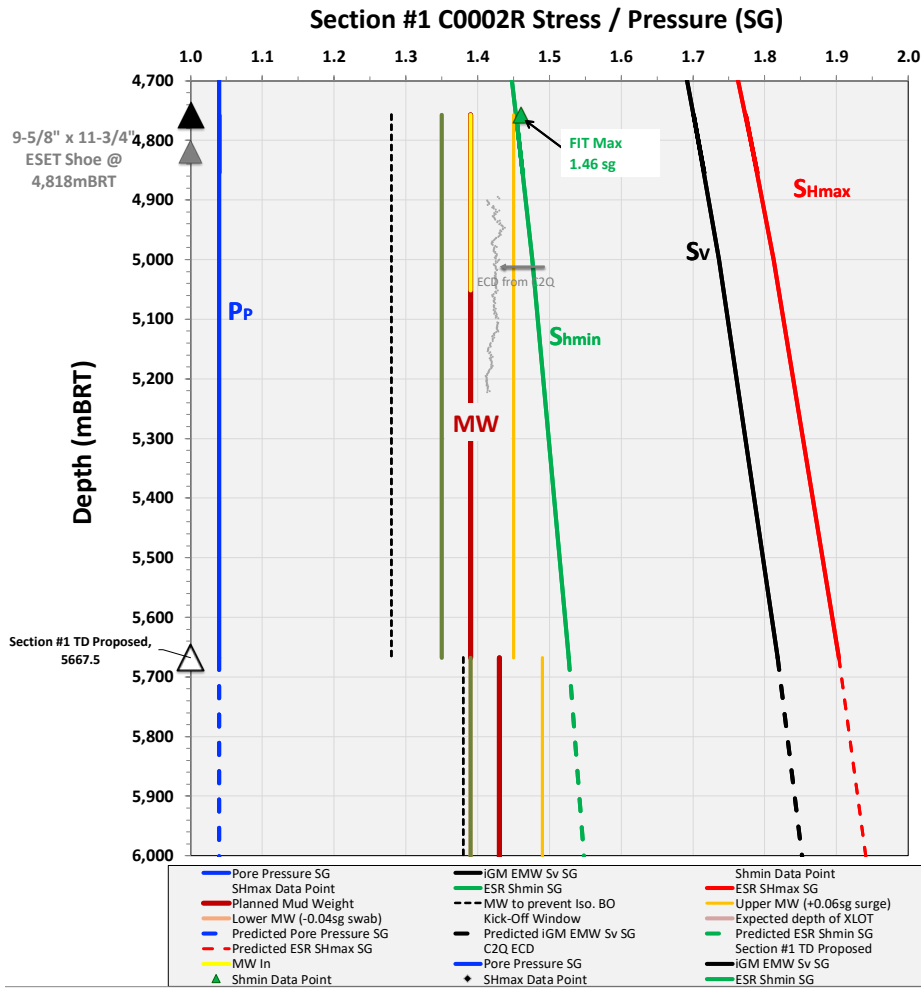


Figure 3 Current stress model for Section #1

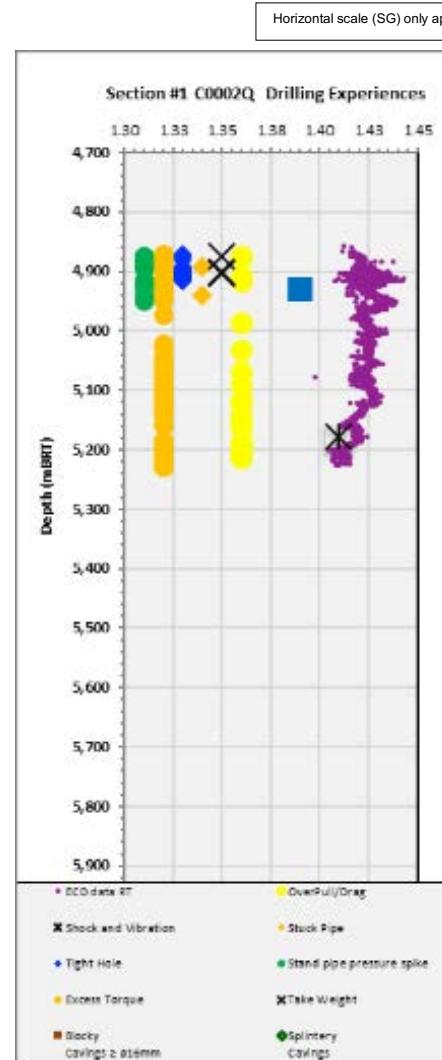


Figure 4 C0002Q Drilling Experiences

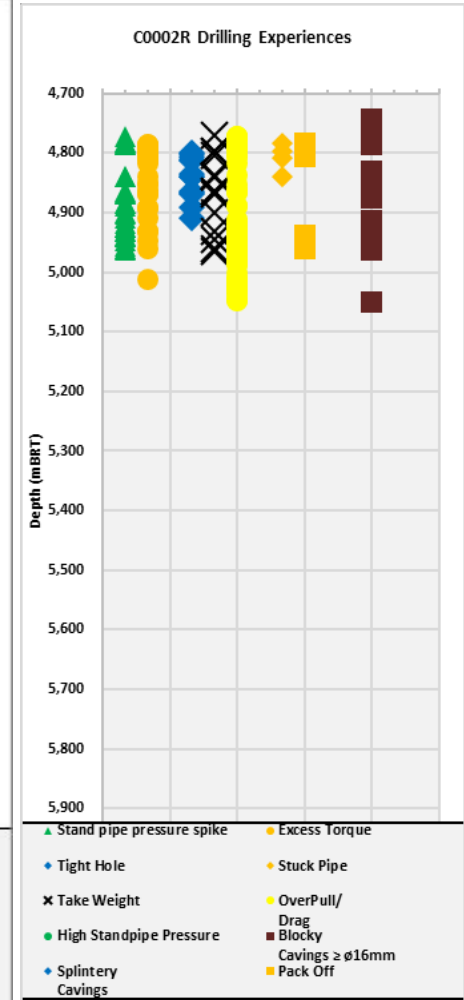


Figure 5 C0002R Drilling Experiences