

LWD data processing note in 2843.12 - 3973.00 mBRT (875.62 - 2005.5mbsf)

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Depth index

mBRT: meter below the rotary table (rig floor)

mbsf: meter below sea floor

MSL: mean sea level

Well summary

Expedition: 338

Hole: C0002F

Location: 33°18.0507'N, 136°38.2029'E

Water Depth: 1967.5 mBRT (1939.0 mMSL)

Rig floor to MSL Elevation: 28.5 m

Total depth: 3973.00mBRT (2005.5mbsf)

Last casing : 20" till 2827.8 mBRT (860.30 mbsf)

Bit size: 12-1/4"-PDC16.5"-20"-Anderreamer

Hole Size: 20"

LWD BHA: geoVISION-8, arcVISION-8, Telescope, sonicVISION-8

Mud type: KNPP

Mud weight: 1.10

Mud resistivity: 0.11 Ohm-m @22.0 DegC

Mud filtrate: 0.08 Ohm-m @22.8 DegC

Mud cake: 0.22 Ohm-m @ 22.9DegC

Max hole deviation: 1.01 deg@ 3869.01mBRT(1901.51mbsf)

Operation and logging summary

Date: November 2-13

Drill down: 2843.12 - 3973.00 mBRT (875.62 - 2005.5mbsf)

Ream up1: 3399.89 - 3463.74 mBRT (1432.39 - 1496.24mbsf)

Ream down2: 3448.35 - 3506.27 mBRT (1480.85 - 1538.77mbsf)

Ream down3: 3525.31 - 3583.07 mBRT (1557.81 - 1615.57mbsf)

Data processing

The LWD data was downloaded from the LWD tools at the surface after the drilling.

The raw data was delivered by Schlumberger field engineers to LSS. LSS applied depth

shift of -1967.5m from the rig floor to the sea floor. LSS generated shallow, medium, and deep resistivity borehole image using GeoFrame 4.4. The static image was processed with 128 colors gradation. The dynamic image was processed with 128 colors gradation and window length of 1m. The sonic data was sent out to the shore-base Schlumberger Petrotechnical Services through the internet. The data was processed, and the results were sent back to the ship through the internet. LSS applied depth shift of -1967.5m to the sonic results, and converted unit from micro second/foot to meter/second. The all data was uploaded the share server to distribute to the scientists.

Logging data quality control

Data quality control was performed by monitoring real time data, short repeat logs, during data processing, and final processed data. Logging staff scientists and logging scientists assessed real time drilling parameters and data from the downhole tools in terms of realistic values for the lithology of drilling interval. Three short repeat sessions were acquired to check repeatability. The intervals are 1432.39-1496.24mbsf (3399.89-3463.74mBRT) by reaming up after the bit reached at 1496.24mbsf (3463.74mBRT), 1480.85-1538.77mbsf (3448.35-3506.27mBRT) by reaming down after the bit reached at 1538.77mbsf (3506.27mBRT) and pulled up the bit, and 1557.81-1615.57mbsf (3525.31-3583.07mBRT) by reaming down after the bit reached at 1615.57mbsf (3583.07mBRT) and pulled up the bit. Good repeatability was observed in the interval dilled with the 12.25" (31.1cm) drill bit. The overall quality of the processed logging data was good. Regarding with the processed resistivity images, the horizontal sharp artifacts are observed in whole interval due to overwrite data by heave motion. Missing data due to high stickslip are observed. Drilling cork screw are observed in 892-907mbsf (2859.5-2874.5mBRT), 923-932mbsf (2890.5-2899.5mBRT), 1087-1097mbsf (3054.5-3064.5mBRT), 1241-1250mbsf (3208.5-3217.5mBRT), 1485-1492mbsf (3452.5-3459.5mBRT). Continuous good quality compressional sonic velocities were acquired. Shear sonic velocity was not measured because slower velocity than mud velocity is not able to measure by monopole transmitter.

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