

LWD data processing note

9th December, 2012
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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: C0012H

Location: 32°44.8783'N, 136°55.0351'E

Water Depth: 3538.0mBRT (3509.5mMSL)

Rig floor to MSL Elevation: 28.5 m

Total depth: 4248.0mBRT (710.0mbsf)

Last casing : N/A

Bit size: 12-1/4"-PDC

Hole Size: 12-1/4"

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

Mud type: Seawater

Mud weight: 1.04

Mud resistivity: 0.23 Ohm-m (from mud tank)

Mud filtrate: N/A

Mud cake: N/A

Max hole deviation: 2.63 deg@ 4230.85mBRT(692.85mbsf)

Operation and logging summary

Date: December 3-6, 2012 (RIH to recover LWD)

Drill down: 3538.0-4248.0 mBRT (0-710mbsf) (No repeat log)

Wash down (no rotation) till 3596.5mBRT (58.5mbsf) to make drilling stable in surface soft formation, then started drilling.

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. CCs, logging scientists, LSS, EPM observed the sea floor at 3538.0mBRT from natural gamma-ray

and resistivities from the memory data. LSS applied depth shift of -3538.0m 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 -3538.0m 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, 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. The overall quality of the processed logging data was good. There are some discontinuous of resistivities data till 3555mBRT (20mbsf) due to exceed 40m/h during wash down. There is no resistivity image till 3596.5mBRT (58.5mbsf) due to no rotation for wash down. 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. It was 19.4% in the whole logging interval. Continuous good quality compressional sonic velocities were acquired. Shear sonic velocity was obtained in 573.9-603.6mbsf (4111.9-4141.6mBRT) and 655.4-686.8mbsf (4193.4-4224.8mBRT) in the basement. Shear sonic velocity was not measured above 530mbsf (4068mBRT), because slower velocity than mud velocity is not able to measure with monopole transmitter.

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