

Technical Memo

	MC252 #2 USIT / MSIP (Cement Scanner) – Run #1 CAST-F / CBL – Run #2 13 5/8” Casing Cement Evaluation			
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Overview:

On July 6, 2010, Schlumberger logged the USIT / MSIP (Cement Scanner) in the 13 5/8” casing from 5,194’ to 13,401’ for the purpose of 1) obtain a base log of the casing thickness and radius and 2) the cement evaluation in the 13 5/8” casing annulus. The total depth of the well was 13,522’.

The well was cemented on July 4, 2010. The 24 hour un-contaminated cement compressive strength was 2,349 psi.

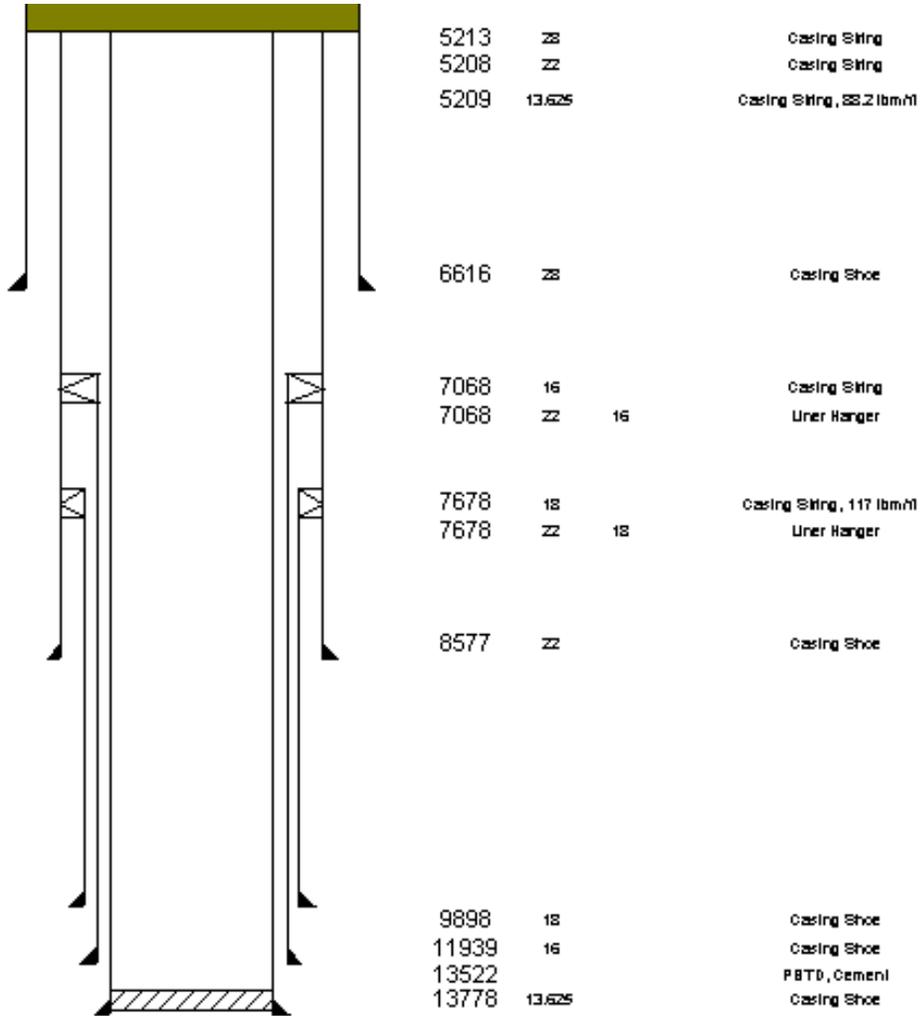
On August 12, 2010, Halliburton made their first run with the CAST-F / CBL in the 13 5/8” casing from 9,500’ to 13,420’ for the purpose of identifying the top of the cement. The CAST-F is Halliburton’s equivalent tool to Schlumberger’s USIT. The reason for using the CAST over the USIT was due to the Schlumberger’s unit was replaced by Halliburton for the purpose of running the Vector Magnetics ranging tool.

All depths are tied to the LWD and are measured depths from the RKB.

Interpretation

- 1) 13 5/8” casing cement evaluation
 - a. 12,350’ to 13,420’: High strength cement with zonal isolation.
 - b. 11,850’ to 12,350’: Lower strength cement with zonal isolation.
 - c. 9,500’ to 11,850’: Solidified mud with compressive strength.

Well bore Schematic



Top of Cement with Compressive Strength – Run #1

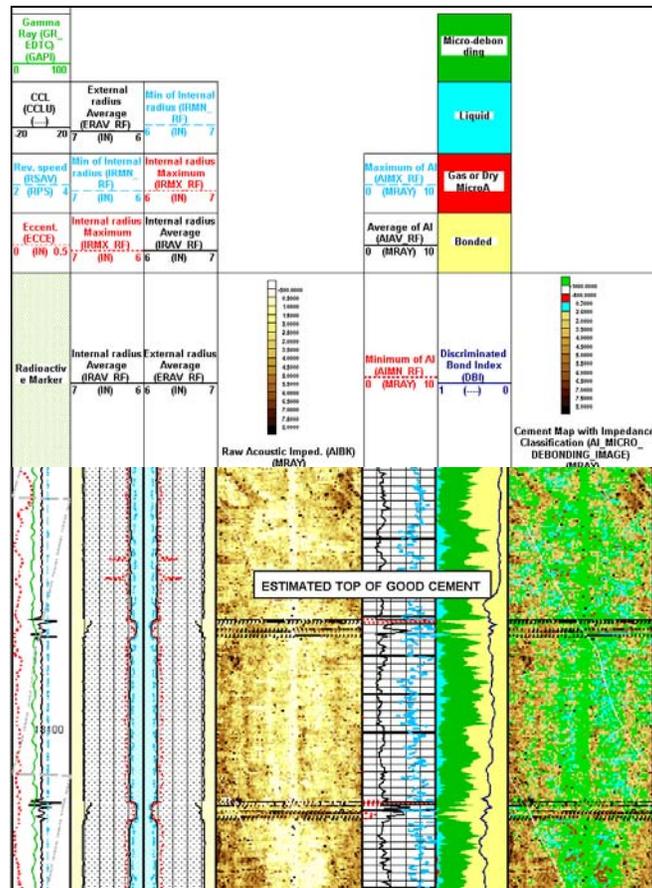


Figure #1: Run #1 - top of cement with compressive strength is at 13,060'.

Top of Cement with High Compressive Strength – Run #2

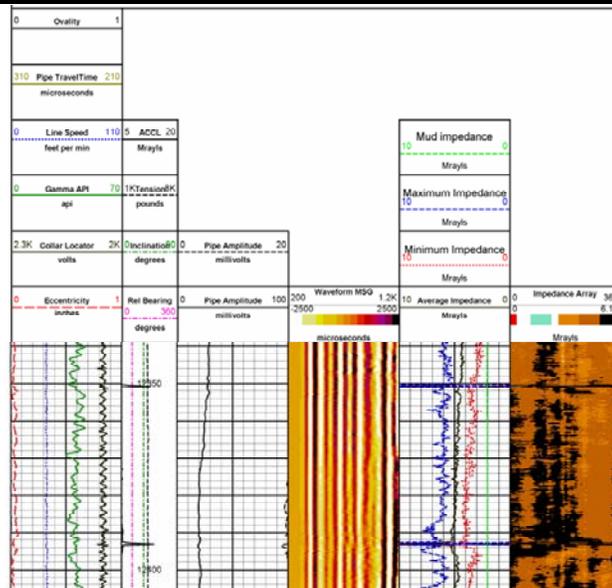


Figure #2: Run #2 - top of cement with high compressive strength with zonal isolation is at 12,350'. This is based on the CBL amplitude increase to 30 mv and acoustic impedance decrease to 4.0 Mrayl.

Estimated Top of Cement for Zonal Isolation 12,760'

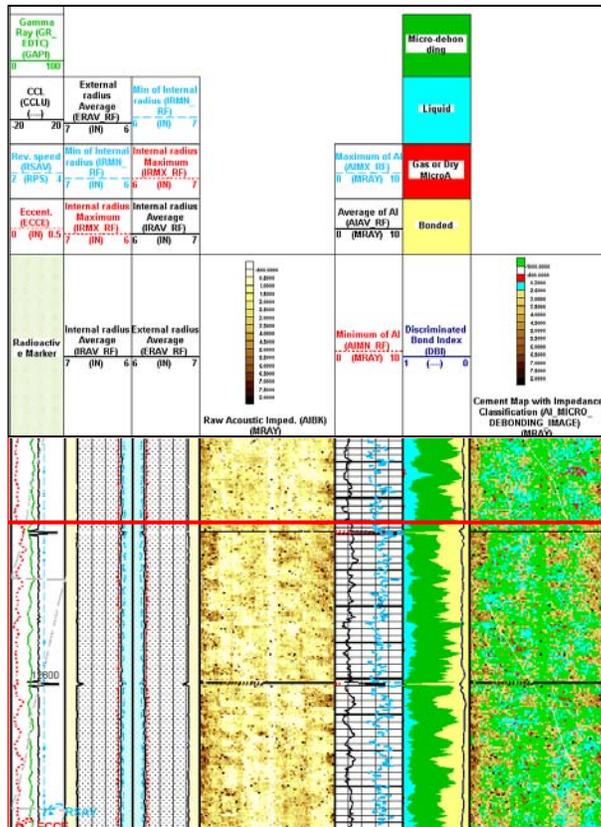


Figure #3: Run #1- The cement above 13,060' gets very contaminated and is still in the curing phase. With additional time for the cement to cure the top could be as high as 12,250'.

Estimated Top of Cement with Lower Compressive Strength 12,760' – Run #2

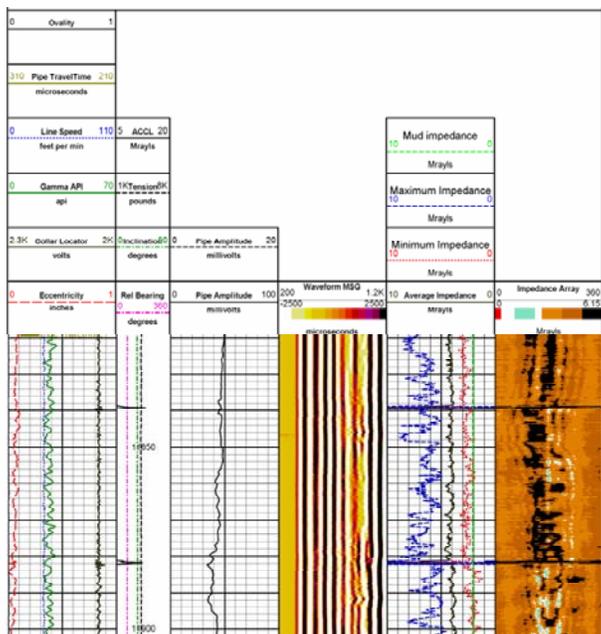


Figure #4: Run #2- The may be the top of low compressive strength cement at 11,850'. This is based on the CBL amplitude increasing to 50 mv.

Mud Solids in Casing Overlap at 11,955' – Run #2

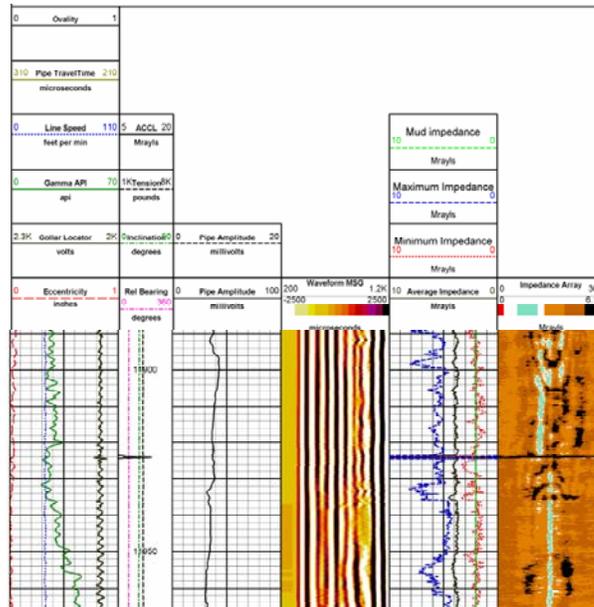


Figure #5: Run #2- CAST-F / CBL in 13 5/8" casing and 16" liner overlap. An acoustic impedance of 4.0 Mrayl indicates there are solids with strength in the overlap. Since cement was not pumped this shallow, this probably solidified mud. The log has the same appearance to the last reading at 9,500'.