



Spectrum Wireline Services Ltd.
Red Deer and Peace River
Wireline and Slickline Services

Subsurface Engineering

March 15, 2019

100, 1010 – 8 Avenue SW,
Calgary, Alberta T2P 1J2

Attention: **Sean David**
Re: **Radial Cement Bond Log Interpretation for Subsurface Engineering**
Well: **Strategic et al A-03-60-10N-117-30W**

Objective of running logs: **Objective of log was to determine cement bond quality**

Log Run: Radial Cement Bond Log with Gamma Ray and CCL
Well Name: Strategic et al A-03-60-10N-117-30W
Surface Location: A-03-06-10N-117-30W
UWI: 300A036010117300
Field: Cameron Hills
Well License #: 0002047
Date Logged: March 12, 2020
Date Drilled: Not available
Logs Correlated to: No Log Available
Casing Record: Surface Casing: 219.1mm. 35.7 kg/m. Surface to 435.8
Production Casing: 139.7mm. 23.1 kg/m. Surface to 1589.6
Maximum Deviation: **Not provided**
Cement Information: Surface Casing: Cemented with 31.0 tonnes 0:1:0 'G' + 1.5% CaCl₂. 8.0 m³ cement returns to surface.
Production Casing: Cemented with 22.0 tonnes Thixlite + 1.0% SMS followed by 15.0 tonnes Expandomix LWL + 0.1% CFL-3 + 0.2% LTR + 0.2% SPC-II. No mentions of returns.
Fluid Level for logging: Fluid level was at 41 m.
Logged Interval: Main Pass: 1480m – 27m. with no pressure applied



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Evaluation:

1. Wellbore fluid level was 41 m.
2. 1479m – 600m: Good quality of cement, low amplitude readings, loss of first arrival on the VDL. Travel time and VDL reflect one another. Minimal variation in minimum and maximum readings implies a strong bond.
3. 600m - 185m: cement quality ranges from very good to fair. Varying from good cement with very low amplitude and the loss of the first arrival in the VDL. Also has spots showing a little micro annulus with a slightly higher amplitude reading but still tight minimum and maximum amplitude readings. There are also a couple sections are poor cement quality with higher amplitude readings and lighter shading in the mapping ie. 353m – 356m and 223m – 226m.
4. 180m – 100m: Fair cement quality with a little higher amplitude with possible micro annulus. 120m – 130m shows very poor cement to zero cement with high amplitudes and the first arrival appearing in the VDL. Also shows very light shading in the mapping.
5. 100m – 80m: cement quality is good. Showing low amplitude with a possible micro annulus.
6. 80m – Fluid Level: cement quality is poor with mid to high amplitude readings. Still an indication of cement as the collars are not ringing free in the VDL.
7. 4550m – 4690m: good bond with the amplitude reading less than 10 mv. Loss of first arrival signal on the VDL. Minimal variation between minimum and maximum implies strong bond all the way around the pipe.

Log Quality

Main pass and Repeat Pass comparison are very good, tool repeatability ensures confidence that the tool is recording valid data, as well as monitoring the amplitude values, travel times, and readings in free pipe. The radial bond log's 3' amplitude correlates well with the 5' VDL first arrivals and as well as to the radial map.

Should you have any questions or concerns, Spectrum Wireline contacts can be reached at info below.

Very best regards,

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