STATE OF COLORADO

02055855

Renninger 30-7-2 Intermediate Cementing - 05 077 10210

5 messages

Soehner, Gage A. <Gage.Soehner@encana.com> Mon, Sep 16, 2013 at 8:54 PM
To: "King, Kevin" <Kevin.King@ledcor.com>, "Andrews, David" <David.Andrews@state.co.us>
Cc: "Abell, Matt" <Matt.Abell@encana.com>, "Wang, Blade" <Feng.Wang@encana.com>, "Grubich, John" <John.Grubich@encana.com>, "Anderson, Harold" <Harold.Anderson@encana.com>, "Dunn, Terrence R." <Terrence.Dunn@encana.com>, "Fuglevand, Lester L." <Lester.Fuglevand@encana.com>

Kevin & Dave,

Patterson 308 performed a 2 stage cement job on the intermediate casing of the Renninger 30-7-2 well on the NGG30NE pad. During the job, we pumped cement with no returns during the 1st stage, and full returns on the 2nd stage. The CBL 24 hours after CIP showed poor cement presence. Due to this, we are going to perform a CBL under pressure & an isolation scanner log. Here are the cementing details:

Well Specs

Well Depth:	8520' MD / 8518' TVD
Casing Specs:	7-5/8" 26.4# HCP110 LTC
Shoe Depth:	8502' MD
DV Tool Depth:	4180' MD

Stage 1 Cement Details

Spacer:	40 bbls 11.5# Mudpush
Lead Cement:	None, single blend slurry
Tail Cement:	12# TXI, 681 sacks @ 1.78 ft3/sk
Final Flowing Pressure:	1196 psi
Final Differential Pressure:	850 psi (plug didn't bump)
Plan Differential Pressure:	905 psi

Cem-Net lost circulation material was mixed in the first 100 bbls of the design at 2 lbs/bbl. The plug didn't bump on the 1st stage, and the floats held after 1.5 bbls flowing back. The first stage was displaced with 212 bbls of water, and 197 bbls of 10.2# mud. The bomb was dropped & DV tool opened per the expected pressure of 900 psi. Upon the first "bottoms up" circulation, contaminated mud & spacer was circulated to surface, indicated proximity to cement. The rig then circulated for 4 hours with full returns prior to pumping the 2nd stage.

Stage 2 Cement Details

Spacer:	20 bbls 11.5# Mudpush
Lead Cement:	12# TXI, 329 sacks @ 1.78 ft3/sk
Tail Cement:	15.8# G, 121 sacks @ 1.16 ft3/sk
Final Flowing Pressure:	1000 psi
Plan Differential Pressure:	777 psi

This stage was cemented with full returns, plug bumped 1200 psi over final circulating pressure, and the DV tool closed. We flowed 2 bbls back to the cementer's displacement tank, and the tool was confirmed to be closed.

Upon running the CBL, the tool tagged at 8433' MD. As you can see from the CBL, there is limited bond showing on this log, only at the DV tool depth and the shoe. We suspect that we may not have given the slurry enough time to gain compressive strength, and therefore will be running another CBL along with an isolation scanner log to verify our cement coverage. In addition, we are going to perform a 14 ppg equivalent FIT test prior to drilling ahead on this well.

The pump plot and PDF file of the initial CBL is available on the FTP site due to the size of the files. Here is the address:

ftp://piceance@corpftp.encana.com/NGG30NE/

The username is "piceance" & the password is "encana00".

Thanks,

Gage Soehner
Drilling Engineer SRBU
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Please note some Encana offices are closed the first and third Friday of each month.

winmail.dat
15K

Andrews - DNR, David <david.andrews@state.co.us> Tue, Sep 17, 2013 at 9:49 AM
To: "Soehner, Gage A." <Gage.Soehner@encana.com>
Cc: "Abell, Matt" <Matt.Abell@encana.com>, "Wang, Blade" <Feng.Wang@encana.com>, "Grubich, John" <John.Grubich@encana.com>, "Anderson, Harold"

<Harold.Anderson@encana.com>, "Dunn, Terrence R." <Terrence.Dunn@encana.com>, "Fuglevand, Lester L." <Lester.Fuglevand@encana.com>, Kevin King - DNR <Kevin.King@state.co.us>

Gage,

Thanks for the detailed summary, and let me know how the iso scanner looks after the logging run. Depths to formation tops would also be helpful. I corrected Kevin King's email address on this reply (it had a ledcor.com extension).

Dave

David D. Andrews, P.E., P.G.
Engineering Supervisor - Western Colorado

State of Colorado
Oil and Gas Conservation Commission
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Soehner, Gage A. <Gage.Soehner@encana.com> Tue, Sep 17, 2013 at 6:04 PM
To: "Andrews - DNR, David" <david.andrews@state.co.us>
Cc: "Abell, Matt" <Matt.Abell@encana.com>, "Wang, Blade" <Feng.Wang@encana.com>, "Grubich, John" <John.Grubich@encana.com>, "Anderson, Harold" <Harold.Anderson@encana.com>, "Dunn, Terrence R." <Terrence.Dunn@encana.com>, "Fuglevand, Lester L." <Lester.Fuglevand@encana.com>, Kevin King - DNR <Kevin.King@state.co.us>

David,

Here are the formation tops:

Ohio Creek (Top Mesa Verde)	2537' MD
Williams Fork	2990' MD
Top of Gas	4200' MD
Coal Ridge	5244' MD
Rollins	5931' MD
Cozzette	6521' MD
Corcoran	6684' MD
Buck Tongue	7868' MD

The first gas show was at 3850' MD according to the pason gas sensor. The "Top of Gas" as picked by the geologists is at 4200' MD. We do not plan to perforate or complete this casing string, it is going to be used purely as zonal isolation for drilling.

> Right now we are running the CBL and Isoscanner under pressure. Currently the tool is around 4000' MD and is coming out of the hole. Later tonight I will have the digital copies of the logs, but right now I just have written interpretation. Here is the synopsis from the wireline engineer:
>
> 8310' to TD (8520' MD) = Cement that has channeling
>
> 8290' to 8310' = Fully cemented
>
> 7320' to 8290' = Good cement with some channeling
>
> 5250' to 7320' = Poor if any cement
>
> 4200' to 5250' = Channeled cement that sank down from DV tool
>
> 4200' to 4000' = Good cement
>
> Upper stage is vastly improved. Lower stage doesn't look great but definitely cement near shoe.

As mentioned, the tool is currently at 4000' MD and logging out, so I don't know the information about that interval right now. I will send the logs later tonight when they are available. The current plan is to verify the cement synopsis from the wireline engineer, and if it my opinion is congruent, we will perform a 14 ppg FIT test at the shoe. IF the FIT test passes, we plan to drill ahead.

Thanks,

Gage

720 315 1137 mobile #

From: Andrews - DNR, David [david.andrews@state.co.us]
Sent: Tuesday, September 17, 2013 9:49 AM
To: Soehner, Gage A.
Cc: Abell, Matt; Wang, Blade; Grubich, John; Anderson, Harold; Dunn, Terrence R.; Fuglevand, Lester L.; Kevin King - DNR
Subject: Re: Renninger 30-7-2 Intermediate Cementing - 05 077 10210

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Andrews - DNR, David <david.andrews@state.co.us> Wed, Sep 18, 2013 at 9:05 AM
To: "Soehner, Gage A." <Gage.Soehner@encana.com>
Cc: "Abell, Matt" <Matt.Abell@encana.com>, "Wang, Blade" <Feng.Wang@encana.com>, "Grubich, John" <John.Grubich@encana.com>, "Anderson, Harold" <Harold.Anderson@encana.com>, "Dunn, Terrence R." <Terrence.Dunn@encana.com>, "Fuglevand, Lester L." <Lester.Fuglevand@encana.com>, Kevin King - DNR <Kevin.King@state.co.us>

Gage,

Thanks for the update.

Dave

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Soehner, Gage A. <Gage.Soehner@encana.com> Thu, Sep 19, 2013 at 3:06 I
To: "Andrews - DNR, David" <david.andrews@state.co.us>
Cc: "Abell, Matt" <Matt.Abell@encana.com>, "Wang, Blade" <Feng.Wang@encana.com>, "Grubich, John" <John.Grubich@encana.com>, "Anderson, Harold" <Harold.Anderson@encana.com>, "Dunn, Terrence R." <Terrence.Dunn@encana.com>, "Fuglevand, Lester L." <Lester.Fuglevand@encana.com>, Kevin King - DNR <Kevin.King@state.co.us "Jeff Davis (davisj1@slb.com)" <davisj1@slb.com>

All,

We completed the second CBL & isolation scanner log of the Renninger 30-7-2 intermediate casing. These files are attached.

Here is my interpretation of the isolation scanner log:

Cement bonding begins at 2900' MD

Good bond from 3900' MD to 4200' MD

Channeled cement from 4200' MD (DV tool) to 5200' MD

Free pipe from 5500' MD to 7200' MD

Marginal bond from 7200' MD to 7300' MD

Good bond from 7300' MD to 7400' MD

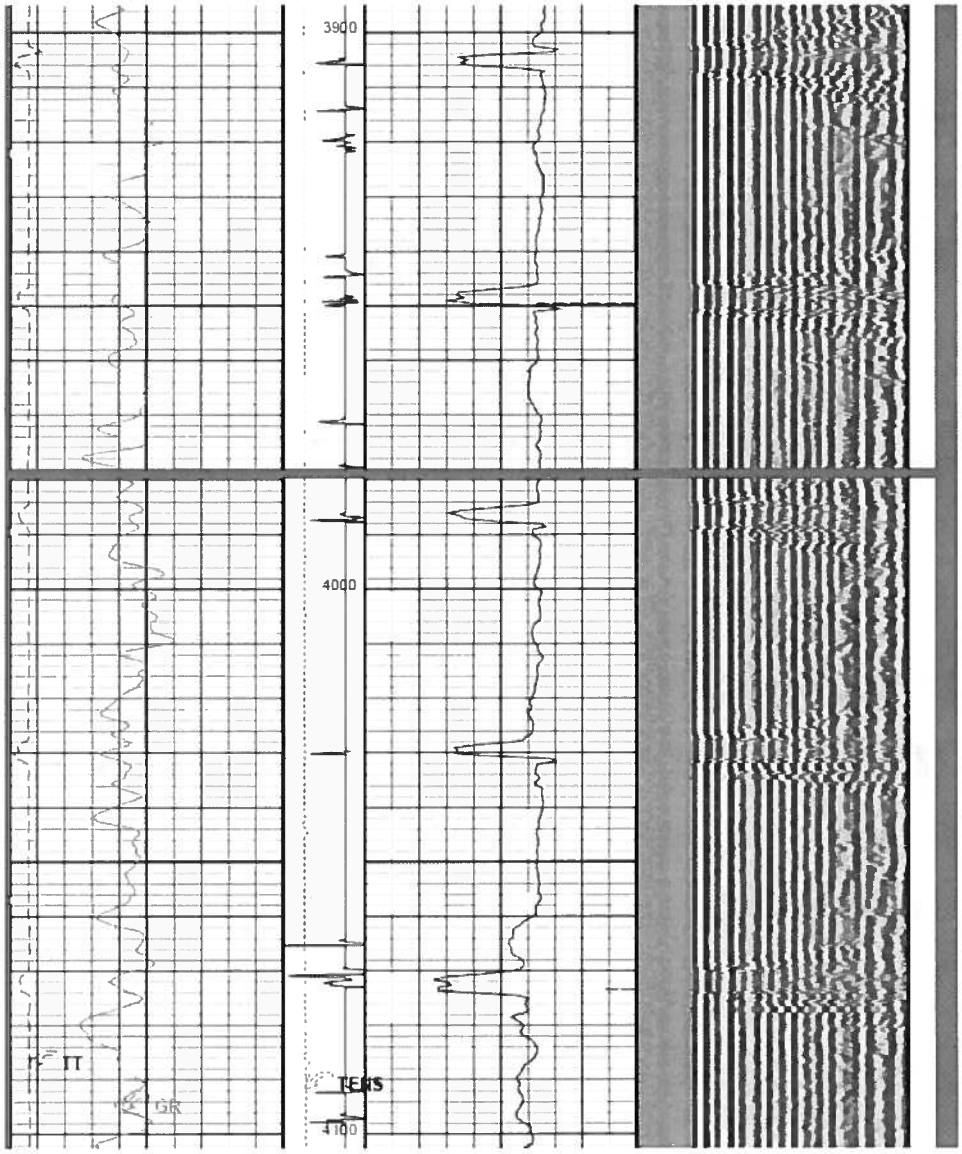
Marginal bond from 7300' MD to TD

These interpretations were reviewed with the SLB wireline engineer, and were confirmed to be accurate.

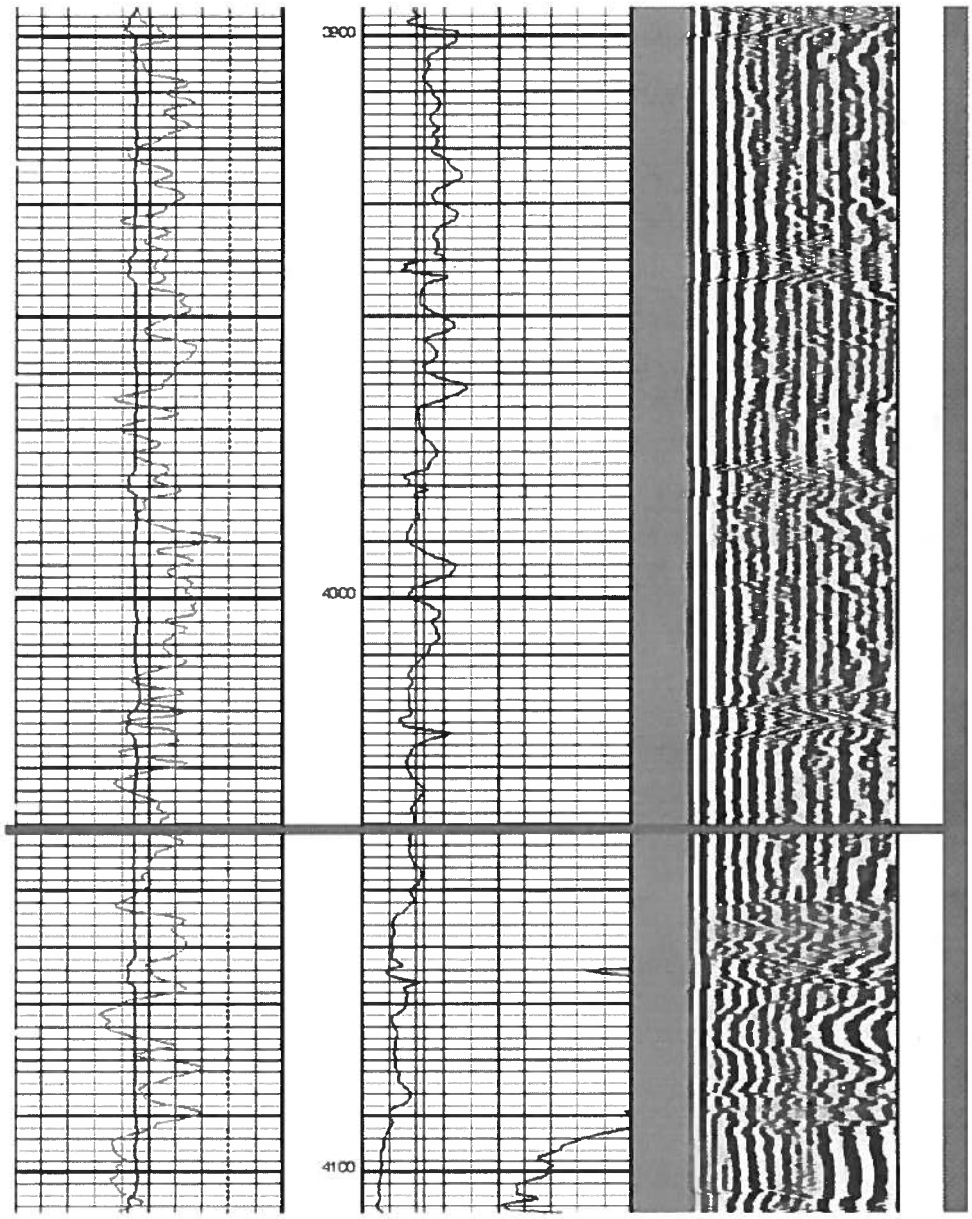
The initial CBL showed very poor amplitude response above the DV tool. This 2nd stage slurry was designed for total depth temperatures, and given the full returns seen while cementing, it was suspected that the slurry hadn't gained enough compressive strength to give a true signal. We ran a second CBL & isolation scanner, and you can see the blatant gain in signal across the 2nd stage. We also ran compressive strength tests on the 12# TXI slurry, and it started to gain compressive strength at 7 hours, with only 500 psi of

compressive strength at 24 hours at TD temperatures. We concluded that indeed didn't allow the slurry enough time to gain compressive strength.

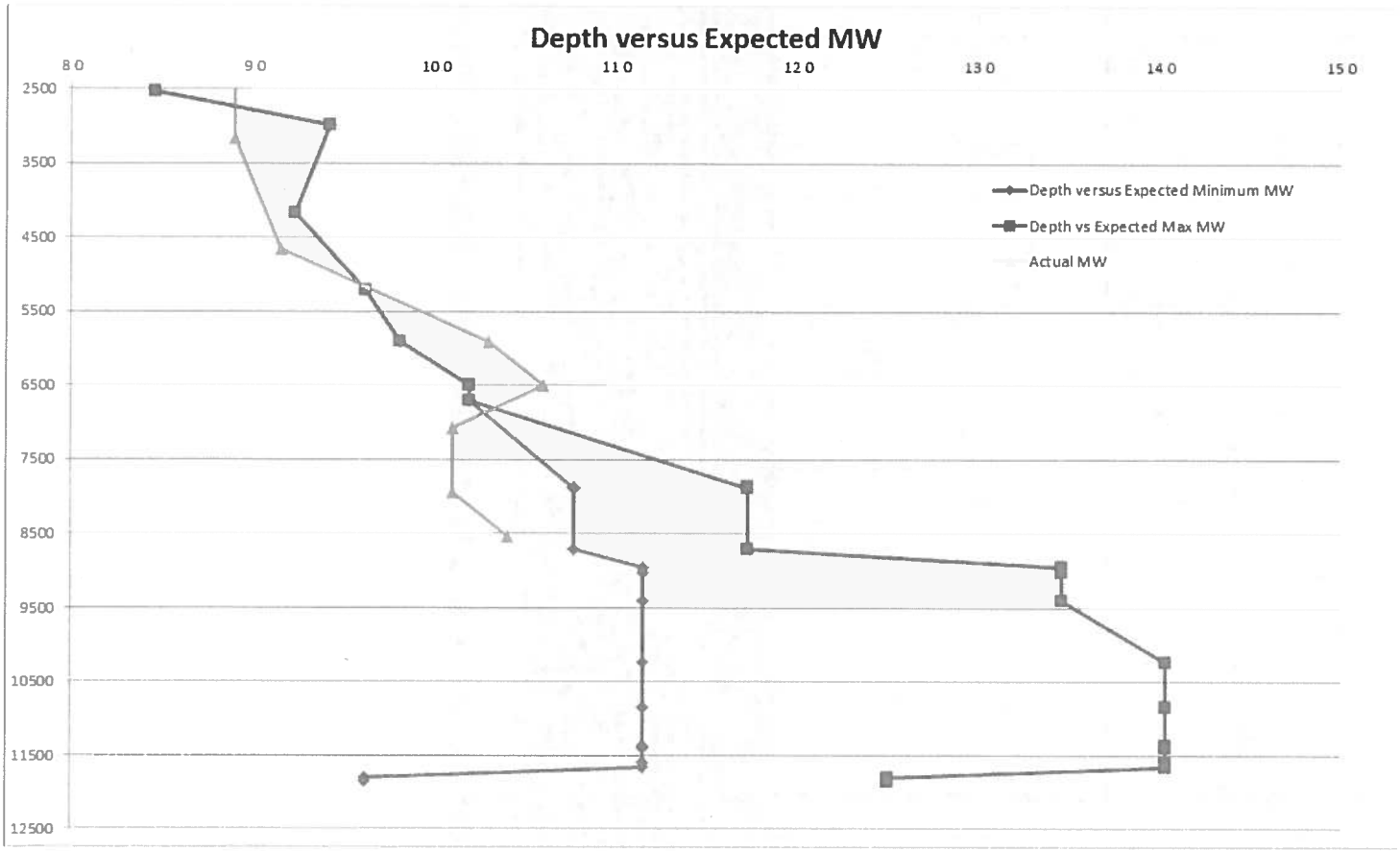
Here is a snapshot of the 1st CBL at 3900' MD:



Here is a snapshot of the second CBL at the same depth, obvious the cement hadn't set:



After the evaluation of the 2nd CBL and the isolation scanner log, we determined that our cement was acceptable for this intermediate string, and we carried ahead as planned tc perform an FIT test. Our test held 1300 psi of surface pressure at 8530' of TVD for 15 minutes with a 10.4 ppg mud weight in the hole. This 13.3 ppg equivalent integrity is suitable for the formation pressure trend observed thus far on the well. We are currently under the expected minimum mud weight for this hole (see graph below). Further, the most analogous offset well (the Mobil O' Connell F11X) TD'd with an 11 ppg weight through the Niobrara section, and it was therefore deemed safe to proceed with a shoe integrity of 13.3 ppg.



Thanks,

Gage Soehner

Drilling Engineer SRBU

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Please note some Encana offices are closed the first and third Friday of each month.

From: Andrews - DNR, David [mailto:david.andrews@state.co.us]
Sent: Wednesday, September 18, 2013 9:05 AM

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2 attachments

Renninger 30-7-2 Intermediate Pressure CBL 9-17-13.pdf
5649K

Renninger 30-7-2 Intermediate Isoscan 9-17-13.PDF
8202K