

OCT-05-1999 06:18

CHEVRON D C & W 234 5400

403 234 5400 P.04/07

Cementing Service Report

Dowell

Well		Location (Legal)		Dowell Location		Job Start																																																																																																																																																																																	
CHEVRON LIARD O-80		O-80		Ft St John, BC		10/1/99																																																																																																																																																																																	
Field	Formation Name/Type		Deviation	Bit Size	Well MD	Well TVD																																																																																																																																																																																	
			0	0 mm	0 m	0 m																																																																																																																																																																																	
County	State/Province		BMH	BMST	BMCT	Pore Press. Gradient																																																																																																																																																																																	
Northwest Territories	NT		0 kPa	0 °C	0 °C	0 kPa/m																																																																																																																																																																																	
Rig Name	Drilled For	Service Via		Casing/Liner																																																																																																																																																																																			
none	Oil & Gas	Land																																																																																																																																																																																					
Offshore Zone	Well Class	Well Type		Depth, m	Size, mm	Weight, kg/m	Grade Thread																																																																																																																																																																																
	New	Exploration		0	0	0																																																																																																																																																																																	
Drilling Fluid Type	Max. Density	Plastic Viscosity		Depth, m	Size, mm	Weight, kg/m	Grade Thread																																																																																																																																																																																
	0 kg/m ³	0 cp		0	0	0																																																																																																																																																																																	
Service Line	Job Type																																																																																																																																																																																						
Other	Pumping Others																																																																																																																																																																																						
Max. Allowed Tubing Pressure	Max. Allowed Ann. Pressure	Wellhead Connection																																																																																																																																																																																					
7500 kPa	0 kPa																																																																																																																																																																																						
Service Instructions				Top, m	Bottom, m	Open	No. of Shots																																																																																																																																																																																
conduct injectivity test on injection well				0	0	0	0																																																																																																																																																																																
				0	0	0	Diameter																																																																																																																																																																																
				0	0	0	0 mm																																																																																																																																																																																
				Treat Down	Displacement	Packer Type	Packer Depth																																																																																																																																																																																
				Tubing	0 m ³		0 m																																																																																																																																																																																
				Tubing Vol.	Casing Vol.	Annular Vol.	Open Hole Vol																																																																																																																																																																																
				0 m ³	0 m ³	0 m ³	0 m ³																																																																																																																																																																																
Casing/Tubing Secured		1 Hole Volume Circulated prior to Cementing		Casing Tools		Squeeze Job																																																																																																																																																																																	
Lift Pressure:		kPa		Shoe Type:		Squeeze Type:																																																																																																																																																																																	
Pipe Rotated		Pipe Reciprocated		Shoe Depth:		Tool Type:																																																																																																																																																																																	
0		0		0 m		Tool Depth:																																																																																																																																																																																	
No. Centralizers:	Top Plug:	Bottom Plug:		Stage Tool Type:		Tool Depth:																																																																																																																																																																																	
0	0	0		0 m		0 m																																																																																																																																																																																	
Cement Head Type:				Stage Tool Depth:		Tail Pipe Size:																																																																																																																																																																																	
				0 m		0 m																																																																																																																																																																																	
Job Scheduled For:	Arrived on Location:		Leave Location:		Casing Type:		Tail Pipe Depth:																																																																																																																																																																																
	10/1/99 8:30		10/2/99 1:00		Casing Depth:		Sqz Total Vol:																																																																																																																																																																																
					m		0 m ³																																																																																																																																																																																
<table border="1"> <thead> <tr> <th>Time</th> <th>Pressure (kPa)</th> <th>Flow Rate (m³/hr)</th> <th>Temperature (°C)</th> <th>Viscosity (cp)</th> <th>Plastic Viscosity (cp)</th> <th>Yield Stress (kPa)</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>8:30</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>arrive on location, rig in</td> </tr> <tr> <td>9:00</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>get battery and cables from rig</td> </tr> <tr> <td>10:00</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>wait on frozen well head</td> </tr> <tr> <td>14:03</td> <td>0.005</td> <td>26.01</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>Pressure Test Lines</td> </tr> <tr> <td>14:05</td> <td>0.005</td> <td>26.01</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>well pressure 510kpa</td> </tr> <tr> <td>14:06</td> <td>0.049</td> <td>0.821</td> <td>58.72</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>14:11</td> <td>0.062</td> <td>0.537</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>open well head</td> </tr> <tr> <td>14:52</td> <td>0.062</td> <td>0.568</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>14:52</td> <td>0.062</td> <td>0.568</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>Start Job</td> </tr> <tr> <td>14:57</td> <td>0.232</td> <td>1.36</td> <td>37.09</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:02</td> <td>0.41</td> <td>1.58</td> <td>37.09</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:07</td> <td>0.588</td> <td>1.8</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:12</td> <td>0.764</td> <td>2.02</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:17</td> <td>0.937</td> <td>2.08</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:22</td> <td>1.11</td> <td>2.27</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:27</td> <td>1.28</td> <td>2.37</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:32</td> <td>1.45</td> <td>2.49</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:37</td> <td>1.61</td> <td>2.46</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:42</td> <td>1.78</td> <td>2.65</td> <td>30.91</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:47</td> <td>1.94</td> <td>2.71</td> <td>30.91</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>15:52</td> <td>2.11</td> <td>2.94</td> <td>34.</td> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> </tbody> </table>								Time	Pressure (kPa)	Flow Rate (m ³ /hr)	Temperature (°C)	Viscosity (cp)	Plastic Viscosity (cp)	Yield Stress (kPa)	Remarks	8:30							arrive on location, rig in	9:00							get battery and cables from rig	10:00							wait on frozen well head	14:03	0.005	26.01	0.	0	0	0	Pressure Test Lines	14:05	0.005	26.01	0.	0	0	0	well pressure 510kpa	14:06	0.049	0.821	58.72	0	0	0		14:11	0.062	0.537	0.	0	0	0	open well head	14:52	0.062	0.568	0.	0	0	0		14:52	0.062	0.568	0.	0	0	0	Start Job	14:57	0.232	1.36	37.09	0	0	0		15:02	0.41	1.58	37.09	0	0	0		15:07	0.588	1.8	34.	0	0	0		15:12	0.764	2.02	34.	0	0	0		15:17	0.937	2.08	34.	0	0	0		15:22	1.11	2.27	34.	0	0	0		15:27	1.28	2.37	34.	0	0	0		15:32	1.45	2.49	34.	0	0	0		15:37	1.61	2.46	34.	0	0	0		15:42	1.78	2.65	30.91	0	0	0		15:47	1.94	2.71	30.91	0	0	0		15:52	2.11	2.94	34.	0	0	0	
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15:27	1.28	2.37	34.	0	0	0																																																																																																																																																																																	
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Wax	CHEVRON LIARD #0-80			Field	Service Data		Customer	Job Number
							ON CANADA RESOURCES	20125585
15:57	2.27	3.91	30.91	0	0	0	0	
16:02	2.44	2.97	37.09	0	0	0	0	
16:07	2.62	3.82	34.	0	0	0	0	
16:12	2.74	4.61	0.	0	0	0	0	
16:15	2.74	4.61	0.	0	0	0	0	at max press
16:17	2.81	4.7	18.54	0	0	0	0	
16:22	2.93	3.25	34	0	0	0	0	
16:27	3.04	4.29	9.27	0	0	0	0	
16:32	3.1	4.55	12.36	0	0	0	0	
16:37	3.17	4.83	9.27	0	0	0	0	
16:42	3.23	4.36	9.27	0	0	0	0	
16:47	3.28	4.26	9.27	0	0	0	0	
16:52	3.34	4.26	9.27	0	0	0	0	
16:55	3.34	4.26	9.27	0	0	0	0	[CumVol]=3.378 m3
16:57	0.017	4.26	9.27	0	0	0	0	
17:02	0.073	4.29	9.27	0	0	0	0	
17:04	0.073	4.29	9.27	0	0	0	0	[CumVol]=.1613 m3
17:07	0.21	3.54	71.09	0	0	0	0	
17:12	0.553	4.99	64.9	0	0	0	0	
17:17	0.886	7.23	61.81	0	0	0	0	
17:22	1.25	5.75	74.18	0	0	0	0	
17:27	1.6	5.84	68.	0	0	0	0	
17:32	1.95	5.68	71.09	0	0	0	0	
17:37	2.31	5.27	68.	0	0	0	0	
17:45	2.85	5.21	64.9	0	0	0	0	
17:50	3.2	5.9	68.	0	0	0	0	
17:55	3.54	5.21	68.	0	0	0	0	
18:00	3.89	4.61	68.	0	0	0	0	
18:05	4.24	5.08	71.09	0	0	0	0	
18:10	4.58	5.08	71.09	0	0	0	0	
18:15	4.93	4.96	68.	0	0	0	0	
18:20	5.27	5.18	68.	0	0	0	0	
18:25	5.62	5.27	68.	0	0	0	0	
18:30	5.96	5.4	68.	0	0	0	0	
18:35	6.3	5.46	68.	0	0	0	0	
18:40	6.64	5.49	68.	0	0	0	0	
18:45	6.99	5.46	68.	0	0	0	0	
18:50	7.33	5.48	71.09	0	0	0	0	
18:55	7.68	5.59	68.	0	0	0	0	
19:00	8.02	5.52	68.	0	0	0	0	
19:04	8.02	5.52	68.	0	0	0	0	[CumVol]=8.292 m3
19:05	0.078	5.84	89.63	0	0	0	0	
19:10	0.599	6.44	102.	0	0	0	0	
19:15	1.11	6.44	102.	0	0	0	0	
19:20	1.61	6.41	102.	0	0	0	0	
19:25	2.14	6.57	102.	0	0	0	0	
19:30	2.66	6.63	102.	0	0	0	0	
19:35	3.17	6.69	102.	0	0	0	0	
19:40	3.69	6.76	105.1	0	0	0	0	
19:45	4.22	6.95	105.1	0	0	0	0	
19:50	4.75	6.63	105.1	0	0	0	0	
19:55	5.27	6.72	102.	0	0	0	0	
20:00	5.8	6.91	105.1	0	0	0	0	

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CHEVRON D C & W 234 5400

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Well	Field				Service Date		Customer
CHEVRON LIARD #0-80							ION CANADA RESOURCES
20:05	6.32	6.66	105.1	0	0	0	
20:10	6.84	6.95	105.1	0	0	0	
20:15	7.36	6.79	105.1	0	0	0	
20:20	7.88	7.01	102.	0	0	0	
20:25	8.4	7.01	105.1	0	0	0	
20:30	8.92	6.63	102.	0	0	0	
20:35	9.44	6.79	102.	0	0	0	
20:40	9.96	6.66	102.	0	0	0	
20:45	10.47	6.79	102.	0	0	0	
20:50	10.99	6.85	102.	0	0	0	
20:55	11.5	6.83	102.	0	0	0	
21:00	12.02	6.91	102.	0	0	0	
21:05	12.53	6.68	102.	0	0	0	
21:10	13.05	6.72	105.1	0	0	0	
21:15	13.56	6.85	102.	0	0	0	
21:20	14.08	6.69	102.	0	0	0	
21:25	14.59	6.79	102.	0	0	0	
21:30	15.12	6.63	102.	0	0	0	
21:35	15.63	6.72	102.	0	0	0	
21:40	16.15	6.53	105.1	0	0	0	
21:46	16.67	6.79	102.	0	0	0	
21:51	17.18	6.76	102.	0	0	0	
21:56	17.69	6.63	105.1	0	0	0	
21:59	17.69	6.63	105.1	0	0	0	[CumVol]=18.02 m3
22:01	0.232	7.01	142.2	0	0	0	
22:06	0.944	7.36	142.2	0	0	0	
22:11	1.66	7.36	142.2	0	0	0	
22:16	2.37	7.1	142.2	0	0	0	
22:21	3.09	7.2	142.2	0	0	0	
22:26	3.8	7.23	145.3	0	0	0	
22:31	4.51	7.29	142.2	0	0	0	
22:36	5.23	7.29	142.2	0	0	0	
22:41	5.94	7.26	145.3	0	0	0	
22:46	6.66	7.29	142.2	0	0	0	
22:51	7.37	7.29	142.2	0	0	0	
22:56	8.08	7.23	142.2	0	0	0	
23:01	8.8	7.28	142.2	0	0	0	
23:06	9.51	7.23	142.2	0	0	0	
23:11	10.23	7.26	142.2	0	0	0	
23:16	10.94	7.26	142.2	0	0	0	
23:21	11.65	7.29	142.2	0	0	0	
23:26	12.37	7.29	142.2	0	0	0	
23:31	13.08	7.29	142.2	0	0	0	
23:36	13.8	7.26	142.2	0	0	0	
23:41	14.51	7.26	142.2	0	0	0	
23:46	15.23	7.29	145.3	0	0	0	
23:51	15.94	7.26	142.2	0	0	0	
23:56	16.65	7.26	142.2	0	0	0	
0:01	17.36	7.23	142.2	0	0	0	
0:06	18.07	7.83	120.5	0	0	0	
0:08	18.07	7.83	120.5	0	0	0	stop pump
0:11	18.31	4.86	0.	0	0	0	
0:16	18.31	3.88	0.	0	0	0	

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CHEVRON D C & W 234 5400

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Well		Field		Service Date		Customer																																																	
CHEVRON UARD #O-80						ION CANADA RESOURCES																																																	
<table border="1"> <tr> <th>Time</th> <th>Pressure</th> <th>Flow</th> <th>Temp</th> <th>Viscosity</th> <th>Surfactant</th> <th>Surfactant</th> <th>Surfactant</th> </tr> <tr> <td>0:21</td> <td>18.31</td> <td>3.31</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0:26</td> <td>18.31</td> <td>2.9</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0:28</td> <td>18.31</td> <td>2.9</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0:31</td> <td>18.31</td> <td>0.032</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0:36</td> <td>18.31</td> <td>0.032</td> <td>0.</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </table>								Time	Pressure	Flow	Temp	Viscosity	Surfactant	Surfactant	Surfactant	0:21	18.31	3.31	0.	0	0	0	0	0:26	18.31	2.9	0.	0	0	0	0	0:28	18.31	2.9	0.	0	0	0	0	0:31	18.31	0.032	0.	0	0	0	0	0:36	18.31	0.032	0.	0	0	0	0
Time	Pressure	Flow	Temp	Viscosity	Surfactant	Surfactant	Surfactant																																																
0:21	18.31	3.31	0.	0	0	0	0																																																
0:26	18.31	2.9	0.	0	0	0	0																																																
0:28	18.31	2.9	0.	0	0	0	0																																																
0:31	18.31	0.032	0.	0	0	0	0																																																
0:36	18.31	0.032	0.	0	0	0	0																																																
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Avg. N2 Percent		Designated Slurry Volume	Displacement	Mix Water Temp	☐ Cement Circulated to Surface? Volume 0 m ³ ☐ Washed Thru Ports To 0 m																																																		
0 %		0 m ³	0 m ³	°C																																																			
Customer or Authorized Representative			Dowell Supervisor		☐ Circulation Lost ☐ Job Completed																																																		
Miles			Michael King																																																				