

COPRC Dodo Canyon E-76

4. Geology

4.1 Drill Cuttings

Drill cuttings were collected at 5 metre intervals from spud (20 m KB) to TD (2910 m KB). A set of bulk samples as well as a set of washed samples in vials have been delivered to the GNWT (03/12/2014).

4.2 Cores

No Cores were cut on the Dodo Canyon E-76 well.

4.3 Lithology

Formation	Prognosis		Sample		
Marker Tops	TVD	SS	MD	TVD	SS
Quaternary	5		5.0	5.0	
Little Bear	30	243.4	31.0	31.0	242.4
Slater River	76	197.4	76	76	197.4
Arctic Red	827	-553.6	800.5	800.5	-527.1
Martin House	933	-659.6	938.5	938.5	-655.1
Imperial	968	-694.6	975.5	975.4	-702
Upper Canol	1653.4	-1380	1665	1657.7	-1384.3
Lower Canol	1694.4	-1421	1700.7	1690.7	-1417.3
TD	1800.0	-1526.6	2910	1805.47	-1532.1

5. Well Evaluation

5.1 Open Hole Logs

Hole Section	Run Number	Log description	Depth In	Depth Out
Intermediate	1	AIT/PEX/BHC/TLD2/ERCD	1814	600
Intermediate	2	USIT	1824	600
		USIT run in cased hole to evaluate cement bond of 177.8 mm intermediate casing		

5.2 Summary of Hydraulic Fracturing Operations

Completion operations commenced January 28 when a C Ring was initially set up for water storage for the E-76 fracturing operations. Completions equipment rig up was completed on February 4 and pressure testing of all fracturing equipment began. On February 5, the C Ring began leaking and 2760 m³ of warm water spilled on to the well pad. The incident report is provided as Appendix XVIII.

Coil tubing operations began on February 6 when coil was run to bottom to ensure that the wellbore was clean and no obstructions existed. The first stage of the hydraulic fracturing program commenced on February 7. A total of 10 stages were fracked over a 10 day period ending on February 17, 2014.

5.3 Completion Operations Commence

Completion operations commenced January 28, 2014

5.4 Fracturing Operations Completed

Hydraulic fracturing operations ended February 17, 2014

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5.5 Perforated Intervals

Date	Stage	Perf interval mKB	Perf interval mKB	Perf interval mKB	Perf interval mKB	Perf interval mKB
02/07/14	1	2866 - 2867	2847 - 2848	2827 - 2828	2808 - 2809	2789 - 2790
02/10/14	1A	2857 - 2858	2838 - 2839	2819 - 2820	2800 - 2801	
02/12/14	2	2762 - 2763	2743 - 2744	2723 - 2724	2704 - 2705	2685 - 2686
02/12/14	3	2666 - 2667	2647 - 2648	2628 - 2629	2609 - 2610	2590 - 2591
02/13/14	4	2571 - 2572	2552 - 2553	2533 - 2534	2514 - 2515	2494 - 2495
02/14/14	5	2475 - 2476	2456 - 2457	2437 - 2438		
02/14/14	6	2418 - 2419	2399 - 2400	2380 - 2381		
02/15/14	7	2361 - 2362	2342 - 2343	2323 - 2324	2304 - 2305	2285 - 2286
02/15	8	2265 - 2266	2246 - 2247	2227 - 2228	2208 - 2209	2189 - 2190
02/16/14	9	2170 - 2171	2151 - 2152	2132 - 2133	2113 - 2114	2094 - 2095
02/17/14	10	2075 - 2076	2056 - 2057	2036 - 2037	2017 - 2018	1998 - 1999

5.6 Multi Stage Fracturing Operations

Date	Stage	Interval m KB	Avg. treating Pressure kPa	Total Proppant pumped 't'	Total Water Pumped m ³
02/11/14	1	2789 - 2858	21,800	99.69	579.5
02/12/14	2	2685 - 2763	22,400	116.10	721.7
02/13/14	3	2590 - 2667	25,600	95.86	680.4
02/13/14	4	2494 - 2572	25,500	115.55	524.5
02/14/14	5	2437 - 2476	21,400	100.36	709.4
02/15/14	6	2380 - 2419	20,600	100.00	512.2
02/15/14	7	2285 - 2362	19,900	110.28	550.2
02/16/14	8	2189 - 2266	19,500	112.80	547.3
02/16/14	9	2094 - 2171	19,000	99.66	571.58
02/17/14	10	1998 - 2076	20,600	99.35	515.4

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5.7 Well Flowback and Flow testing

Flow testing commenced on COPRC Dodo Canyon E-76 when Nabors Service rig #414 began to rig up on February 26 2014. The service rig was fully inspected the next day and all equipment was pressure tested including Weatherford's test equipment. A string of 60.3 mm tubing was run and landed in a Weatherford WDH production packer set at 1797 m KB, above the perforated intervals.

On March 2, a total of 9 swabs were pulled and the well began to flow unassisted. The well was allowed to flow for 18 hours and was then shut in. Nabors Service rig #414 was rigged out on March 3 and the well was turned over to the testers.

The E-76 well was flowed until 08:00 on March 20 for a total of 18 days or a total of 421 hours flowed. The total load fluid recovered was 1780 m³ out of a total load fluid volume of 6586 m³.

5.8 Flowback Volumes

Date	Load Fluid Recovered (LFR) m ³	Total Load Fluid Recovered (TFLR) m ³	Hydrocarbon Liquids recovered Daily m ³	Total Hydrocarbon Liquids Recovered m ³
03/02/14	134.0	134.0	0	0
03/03/14	182.5	316.51	0	0
03/04/14	196.16	511.67	2.79	2.79
03/05/14	169.03	680.7	5.63	8.42
03/06/14	126.91	807.61	4.32	12.74
03/07/14	114.17	921.78	4.11	16.85
03/08/14	89.38	1011.16	3.53	20.38
03/09/14	92.3	1103.46	3.63	24.01
03/10/14	88.74	1192.20	3.44	27.45
03/11/14	79.53	1271.73	3.68	31.13
03/12/14	72.80	1344.53	3.22	34.35
03/13/14	72.27	1416.80	3.12	37.47
03/14/14	63.43	1480.23	3.27	40.74
03/15/14	63.95	1544.18	3.02	43.76
03/16/14	57.63	1601.81	2.37	46.13

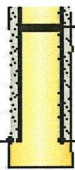
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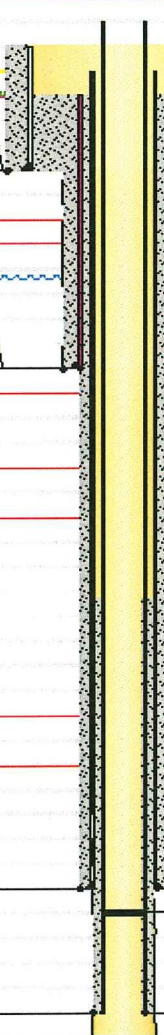
03/17/14	60.3	1662.11	2.21	48.34
03/18/14	58.08	1720.19	2.37	50.71
03/19/14	55.92	1776.11	2.23	52.93
03/20/14	4.50	1780.61	0.15	53.08

5.9 Flare Volumes

Date	Daily volume Flared E ³ m ³	Total Volume flared E ³ m ³
03/02/14	5.57	5.57
03/03/14	10.53	16.10
03/04/14	46.48	62.58
03/05/14	125.13	187.71
03/06/14	108.38	296.09
03/07/14	104.76	400.85
03/08/14	101.15	502.0
03/09/14	102.66	604.66
03/10/14	101.10	705.76
03/11/14	100.78	806.54
03/12/14	98.11	904.65
03/13/14	96.88	1001.53
03/14/14	96.48	1098.01
03/15/14	98.22	1196.23
03/16/14	99.78	1296.01
03/17/14	98.64	1394.65
03/18/14	97.33	1491.98
03/19/14	95.43	1587.41
03/20/14	7.92	1,595.33

5.1

2,877.3	88.3	1,804.4	mKB; Date:1/15/2014		PBD; 2,877.30; 2/7/2014
2,893.9	87.8	1,804.9			
2,894.2	87.8	1,804.9			
2,908.6	87.8	1,805.4	Description: Production Liner		
2,909.3	87.8	1,805.4	Cement; Depth (MD): 1,477.35-		
2,910.0	87.8	1,805.5	2,909.32 mKB; Date: 1/22/2014		4; Production; 114.3 mm; 101.6 mm; 2.38 mKB; 2,906.94 m
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ConocoPhillips			Current Schematic		
CANYON E-76 65-10 126-45					
API / UWI 300E7665-10126-45	Surface Legal Location E-76 65-10 126-45	District NEW VENTURES	Field Name Canyon	License No. EL 470	
Program ILX	Well Type Appraisal	Well Configuration Type HORIZONTAL	Original KBRT Elevation (m) 273.40	KB-Grout Distance (m) 5.20	
HORIZONTAL - Original Hole, 4/7/2014 3:20:04 PM					
MD (mKB)	Incl (°)	TVD (mKB)	Vertical schematic (actual)		
-0.8	0.4	-0.8			
0.0	0.4	0.0			
2.4	0.4	2.4			
3.6	0.4	3.6			
4.2	0.4	4.2			
5.2	0.4	5.2			
16.5	0.4	16.5			
17.7	0.4	17.7			
20.0	0.4	20.0			
30.0	0.4	30.0			
31.0	0.4	31.0	Description: Auto cement plug; Depth (MD): 20.00 mKB; Date: 12/11/2013		
76.0	0.4	76.0	Description: Conductor Cement; Depth (MD): 3.60-20.00 mKB; Date: 12/11/2013		
76.4	0.3	76.4			
589.0	0.4	589.0			
589.4	0.4	589.4	Description: RFC 1740 cement; Depth (MD): 5.20-603.00 mKB; Date: 1/4/2014		
602.7	0.4	602.7	Description: Auto cement plug; Depth (MD): 603.00 mKB; Date: 1/4/2014		
603.0	0.4	603.0			
800.5	0.8	800.5			
827.0	0.9	827.0			
933.0	1.1	932.9			
938.5	1.1	938.4			
968.0	0.9	967.9			
975.5	0.9	975.4			
1,476.4	4.1	1,476.0			
1,476.7	4.2	1,476.3			
1,477.3	4.2	1,476.9			
1,477.5	4.2	1,477.1			
1,478.8	4.3	1,478.4			
1,653.4	5.9	1,647.4			
1,661.0	18.1	1,654.7			
1,665.0	27.3	1,658.5			
1,694.4	33.8	1,683.9			
1,700.7	35.6	1,689.0			
1,701.0	35.7	1,689.3			
1,895.1	87.7	1,777.5			
1,895.5	87.8	1,777.5			
1,907.5	90.1	1,777.7			
1,908.0	90.2	1,777.7	Description: Intermediate Casing Cement; Depth (MD): 5.20-1,908.00 mKB; Date: 1/15/2014		
2,877.3	88.3	1,804.4	3; Intermediate; 177.8 mm; 159.4 mm; 4.25 mKB; 1,903.75 m PBTD; 2,877.30; 2/7/2014		
2,893.9	87.8	1,804.9			
2,894.2	87.8	1,804.9			
2,908.6	87.8	1,805.4			
2,909.3	87.8	1,805.4	Description: Production Liner Cement; Depth (MD): 1,477.35- 2,909.32 mKB; Date: 1/22/2014		
2,910.0	87.8	1,805.5	4; Production; 114.3 mm; 101.6 mm; 2.38 mKB; 2,906.94 m		
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5.11 Suspension Status

COPRC Dodo Canyon E-76 is suspended. A StreamFlo 34.5 MPa wellhead with two master valves is installed and chained and locked.