


3.0 - BALDWIN-2

WELL DATA CARD					
	WELL NAME	BALDWIN-2			
	WELL CLASS	Onshore Petroleum Exploration Well			
LOCATION DETAILS					
LAT	22° 15' 49.76"	S	NORTHING	7537603.5	mN
LONG	136° 02' 19.36"	E	EASTING	607021.4	mE
BLOCK	EP 103		ZONE	53	GDA „94
SEISMIC STATION	235m SW of Baldwin-1(Line 89-204, SP 1580.07)		STATE	Northern Territory	
GENERAL DETAILS					
OPERATOR	PetroFrontier (Australia) Pty Ltd		CONTRACTOR	Major	
RIG	Major TXD 20108		RIG HEIGHT	4.7m	
SPUD DATE	03/08/2011		DATE of FINAL OPS	01/09/2011	
WELL TYPE	Vertical Pilot Hole		DAYS	31	
ELEVATION (AHD)	348.38 m (GL)		353.08 m (RT)		
TD	950.0 m MDRT		-596.9m TVDAHD		
PLUG BACK DEPTH	496m MDRT		-142.9m TVDAHD		
STRUCTURE	Domal anticlinal with faulted edge. Stratigraphic Primary Target.				

HOLE SUMMARY				
HOLE SIZE	HOLE DEPTH	CASING SIZE	SHOE DEPTH	CASING TYPE
17.5" (445mm)	25.5m	13 3/8" (340mm)	23.0m	Conductor 54.4#, K55, BTC
12.25" (311mm)	421m	9 5/8" (244mm)	417.8m	Surface casing 40#, K55, BTC
8.5" (216mm)	950m	7" (178mm)	515.1m	Intermediate 23#, K55, BTC

FORMATION TOPS								
Formation (member)	Age	Prognosed			Actual			Diff (m)
		MDRT (m)	TVDSS (m)	Thick. (m)	MDRT (m)	TVDSS (m)	Thick. (m)	
Arrinthunga Formation	L.Camb	4.7	343.0	465.4	4.7	348.4	379.8	5.4 L
Chabalowe Formation		NP	NP		384.5	-31.4	98.5	
(Hagen Member)		428.1	-80.4	(45.0)	438.0	-84.9	(45.0)	4.5 L
Arthur Creek Formation	M.Camb	470.1	-122.4	418.9	483.0	-129.9	417.9	7.5 L
(Oolitic Reef)		606.7	-259.0		611.0	-257.9	(24.5)	1.1 L
(Basal "Hot Shale")		867.7	-520.0	(21.3)	877.0	-523.9	(23.9)	3.9 L
Thorntonia Formation	M.Camb	889.0	-541.3	41.0+	900.9	-547.8	49.1+	6.5 L
Total Depth		930.0	-582.3		950.0	-596.9		

LOGGING RUN SUMMARY			
RUN	LOG	INTERVAL (m)	REMARKS
1	NGT-PEX-HRLA-DSLT-SP-GR	930.0 – 417.8	BHT 48.0° C
	TNPH - RHOZ	933.0 – 417.8	
	HRLA	935.0 - 417.8	
	DT	943.0 – 417.8	
	SP	949.0 – 417.8	
2	FMI – SONIC SCANNER – SP	Misrun	Over speed. Incompatible tools?
3	FMI – SONIC SCANNER-FMI	948.6 – 417.8	BHT 50.0° C
	SSCAN	930.0 – 417.8	
4	SONIC SCANNER	417.8 – 32.0	
5	MDT W/MINI DSTS (Pretests)	905.19 – 891.50	23 attempts. 1 tight, 7 dry, 12 lost seal, 3 packer seal leaks. BHT 52.9°C at 893m
	Mini DST 2 and Mini-Frac	894.53 – 895.48	Mini DST and 2 mini frac. Tests
	Mini DST 1	892.25 – 893.20	Mini DST.

LOG ANALYSIS SUMMARY										
Formation/Interval (mMDRT)		Av Sw	Av Por.	Inter. Pay (m)	Comments					
Chabalowe Fm: Hagen Mbr										
431.3 – 433.0 /		77.0	5.25							
Arthur Creek Fm: Oolitic Reef										
611.0 – 616.5 /		100	2.45							
616.5 – 635.0 /		100	2.04							
Arthur Creek Formation: Basal “Hot Shale”										
877.0 – 891.0 /		100	5.05		Zone 1					
891.0 – 894.4 /		45.73	11.27		Zone 2					
894.4 – 900.9 /		79.49	11.13		Zone 3					
Thorntonia Fm										
900.9 – 910.0 /		100	3.36							
CORING					SIDEWALL CORES					
No cores taken					No sidewall cores taken					
FLOW TEST										
625m MDRT		Arthur Creek Formation Oolitic Member		No flow to surface. Displace 8 bbl Slightly gas cut mud to separator tank. Rw= 7.69 ohm.m @ 25°C						
MDT FORMATION TESTS										
TEST NO / TYPE	FMN	INT. (m)	Initial Press. (mud) (psia)	Draw Down Press (psia)	Final Build Up (psia)	Flow Time (min)	Final Mud (psia)	Max Temp (°C)	Interp Mob. (md/m)	REMARKS
Mini DST 1	Hot Shale	894.53 -895.48	1335.61	775.64	1112.20	71	1334.37	52.5	<0.01	Mini Fracs indicated re-opening pressure of 3172 psia and closure pressures from 2675 to 2975 psia.
Mini DST 2	Hot Shale	892.25-893.20	1329.01	679.36	904.93	58	1339.20	52.9	<0.05	No Frac Test
SUMMARY										
<p>Baldwin-2 was first well to be drilled as part of the PetroFrontier’s 2011/12 drilling campaign. The well is situated in the Georgina Basin, onshore Northern Territory, in EP 103. Baldwin-2 was designed to evaluate and confirm the elevation of the basal Arthur Creek Formation “Hot Shale” in relation to Baldwin-1. The “Hot Shale” was the primary target, and the target for the subsequent Baldwin-2H horizontal well. The “Hot Shale” is an unconventional target for hydrocarbons, and the play is analogous with the Bakken Formation of the Williston Basin, northern USA and south-eastern Saskatchewan. The Chabalowe Formation; Hagen Member was a secondary target for assessment.</p> <p>Drilling took 31 days to complete, with spud at 02:30 hrs on 03/08/2011. The 17 ½” section was conventionally drilled to 25.5m MDRT using a tricone bit and 13 3/8” conductor was set at 23.0m MDRT. The 13 3/8” shoe was drilled out conventionally to 29.0m MDRT. The well was displaced and 12 1/4” air hammer drilling commenced from 29.0m MDRT, passing through Cambrian sediments of the Arrintheta and Chablowe Formations. Section TD was 421.0m MDRT in the Chabalowe Formation, with 9 5/8” surface casing set at 417.8 m MDRT. Conventional drilling of the 8 ½” section commenced to 423.0m MDRT, when an LOT of 37.50 ppg EMW was undertaken. The system was then displaced to air/foam and drilled through the Arthur Creek Formation and Oolitic Reef to 848.0 m MDRT. At this point the well was displaced to KCl/Guar/Xanthan mud and drilling resumed conventionally, reaching section TD at 950.0m MDRT. Well TD was reached in the Thorntonia Formation at 14:30 hrs on 22/08/2011. Wireline logs were run to assess the hole before plugging back to 490.0m MDRT m. The cement plug was dressed down to 517.0 m MDRT and 7” casing was run and cemented at 515.1 m MDRT. Prior to sidetracking an FIT was conducted at 519.0m MDRT to 19.90 ppg EMW.</p> <p>Fluorescence was detected within the Arthur Creek Formation at 600.0-606.0m, 618.0-621.0m, 874.0-877.0m and the Hot Shale unit at 879.0-885.0m and 891.0-894.0m MDRT. Gas was recorded from 549.0m MDRT with trace amounts of C1 and nC4, increasing to an average of 11-30 TG units within the Hot Shale. A maximum peak of 202.7 units (C1 75%/C2 21%/C3 3%/iC4s Tr/C5 Tr) was recorded in the Hot Shale unit at 895.5m MDRT. The gas shows and subsequent log analysis have indicated hydrocarbon to be present in the “Hot Shale”, with revised target zones for the horizontal well of 883.0m MDRT (-529.9m TVDAHD) and 894.5m to 895.5 m MDRT (-541.4m to -542.4m TVDAHD) in the “Hot Shale”.</p> <p>No flow test was conducted over the Hagen member due to the lack of shows. A test was conducted over the Oolitic Member. No surface flow was detected. the well was displaced and 8 bbl of slightly gas cut water recovered in a separator tank (Rw= 7.69 ohm.m @ 25°C.</p>										
AUTHOR: PetroFrontier Team February 2012										