

SIMPSON-1

WELL COMPLETION REPORT

BASIC DATA

EP 97

Northern Territory

Central Petroleum Limited

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1.0 Introduction and Summary

The Simpson-1 well was drilled by Central Petroleum Ltd in Exploration Permit 97 in the Pedirka Basin, Northern Territory. The well was spudded at 1230hrs 1 October 2008 and reached TD of 2165m at 0500hrs 18 October 2008.

Simpson-1 was drilled to test the Algebuckina, Poolowanna, Tirrawarra, Purni, Crown Point and top Warburton formations. All these formations were intersected; there were indications of residual oil within the lower part of the Poolowanna Formation and the upper part of the Triassic Walkandi Formation. The geologic prognosis for this well was based on seismic data, Colson-1 and Blamore-1 lithologies.

Hydrocarbon indications were orange-brown staining of sandstone grains with up to 60% of sand grains stained in the uppermost sandstone of the Walkandi Formation. Lesser but similar staining of sand grains was observed in the lower part of the Poolowanna Formation. The staining had the appearance of residual or dead oil.

The Permian Purni Formation Coal Measures were thin, with one significant coal seam intersected. No significant gas was observed from this seam. The most significant gas show was 65 units, the highest gas peak recorded while drilling thin sands in the Oodnadatta Formation at shallow depth.

The well was plugged and abandoned. The rig was released 0800hrs 22nd October 2008. The Hunt Energy 2 rig was released and moved to Kulgera for temporary storage. Figure 1 shows the well location.

Figure 1: Simpson-1 location map

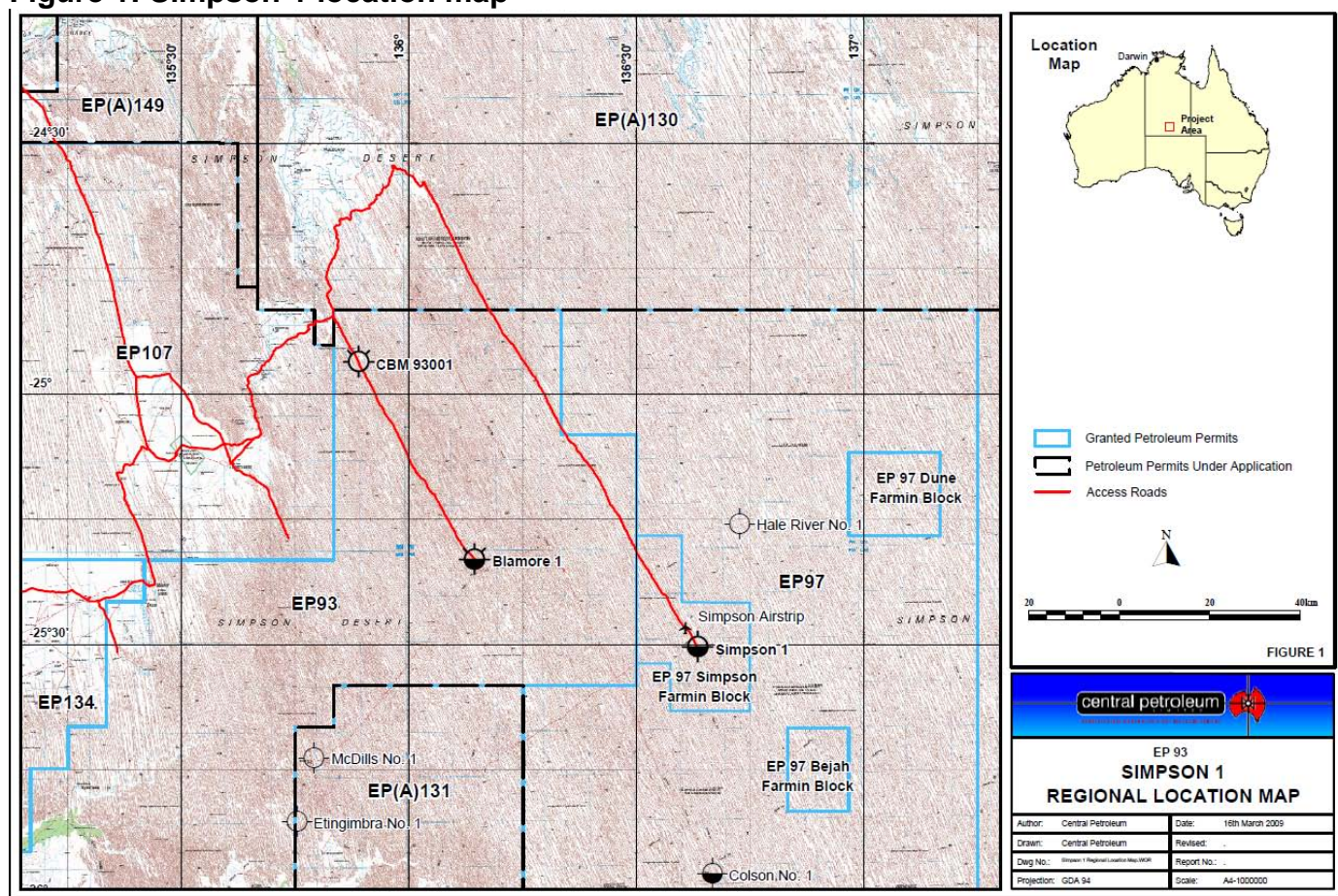


TABLE 1: WELL INDEX SHEET

WELL NAME : Simpson -1			CLASSIFICATION : Wildcat		
OPERATOR : Central Petroleum Limited					
Location: Latitude 25° 30' 27.324" S Longitude 136° 38' 07.908" E MGA 94 Zone 53		Rig Details Rig Name: Hunt Rig 2 Contractor: Hunt Energy Rig Type: Mac Model-400 (500 Hp)		Dates Spud Date: 1 st October 2008 TD Date: 18 th October 2008 Rig Released: 22 nd October 2008	
Basin: Pedirka – Simpson Desert Permit: EP 97		Depths Surface Elevation (AHD): 49m Rig Datum, KB (AHD): 53.3m Total Depth: 2165m		Status Plugged and Abandoned	
Casing/Liner Details Size (inches) Depth (m) 16" Conductor 13.5 9 5/8" 795		Mud Details Mud Type 12 1/4" hole section - Gel Polymer-KCl 8 1/2" hole section - KCl-PHPA-Pac-R		Trajectory: Vertical	
Coring Details No Interval Recovery No Cores were cut		Sidewall Cores Shot Recovered Nil		Cuttings Interval Sample Rate 15m to 1170m 10m 1170m to 1830m 5m 1830m to 2165m 3m	
FORMATION	MD (m)	Isopach (m)	SubSea (MD)	TWT (msec)	Comments
Namba Formation	4.3	48.7	+49	-	Quaternary Tertiary Cretaceous Early Cretaceous Late to Middle Jurassic Early Jurassic Triassic Permian
Eyre Formation	53	64	+0.3	-0.4	
Winton Formation	117	444	-63.7	100	
MacKunda Formation	561	144	-507.7	549	
Oodnadatta Formation	705	306	-651.7	684	
Bulldog Shale	1011	143	-957.7	948	
Cadna-Owie Formation	1154	15	-1100.7	1059	
Murta Member	1169	20.6	-1115.7	1069	
Algebuckina Sandstone	1189.6	458.4	-1136.3	1083	
Poolowanna Formation (C.2)	1648	48	-1594.7	1330	
Poolowanna Formation (C 1)	1696	39	-1642.7	1354	
Walkandi Formation	1735	99	-1681.7	1375	
Purni Formation	1834	135	-1780.7	1423	
Tirrawarra Sandstone (Equ.)	1969	31	-1915.7	1485	
Crown Point Formation	2000	75	-1946.7	1500	
Warburton Group	2075	90+	-2021.7	1533	
Total Depth	2165		-2111.7		
LOGGING					
Date	Depth (m)		Description		
	From	To			
20-10-08	12.5m	2161.5m	MLL-DLL-XMAC-ZDL-CN-GR		
Well Track					
Depth	Latitude		Longitude		Vertical Well
Well Testing; No drill stem tests conducted					



Simpson-1 Well Completion Report: Basic Data

2.0 General Data

Well Name	Simpson-1
Well Classification	Wildcat
Interest Holders	Central Petroleum Limited (Operator) 60% Petroleum Exploration Australia (PXA) 20% Rawson Resources NL 20%
Petroleum License	EP 97, Northern Territory
Location:	Latitude 25° 30' 27.324" South Longitude 136° 38' 07.908" East Australian Map Grid Zone GDA 94
Ground Level (GL)	49.0m asl
Kelly Bushing (KB)	53.3m asl - Datum
Total Depth (KB)	2165m
Drilling Contractor:	Hunt Energy Limited
Drilling Rig:	Hunt Rig 2 (See Rig Specifications in Appendix No. 10)
Contractors:	
Drilling Fluids	RMN Drilling Fluids
Mud Logging	Baker Inteq
Wireline Logging	Baker Atlas
Cementing	Halliburton
Earth Works	R&M Dehne
Spud Date:	1 st October 2008
Total Depth Reached:	18 th October 2008
Rig Released:	22 nd October 2008
Well Status:	Plugged and Abandoned

3.0 Drilling

3.1 Summary of Drilling and Related Operations

Hunt Rig 2 was raised on the 29th September 2008. The 24" conductor hole was drilled to 13.5m and 16" conductor pipe was run and cemented. Figure 2 presents drilling time vs depth.

Figure 2: Drilling time vs depth

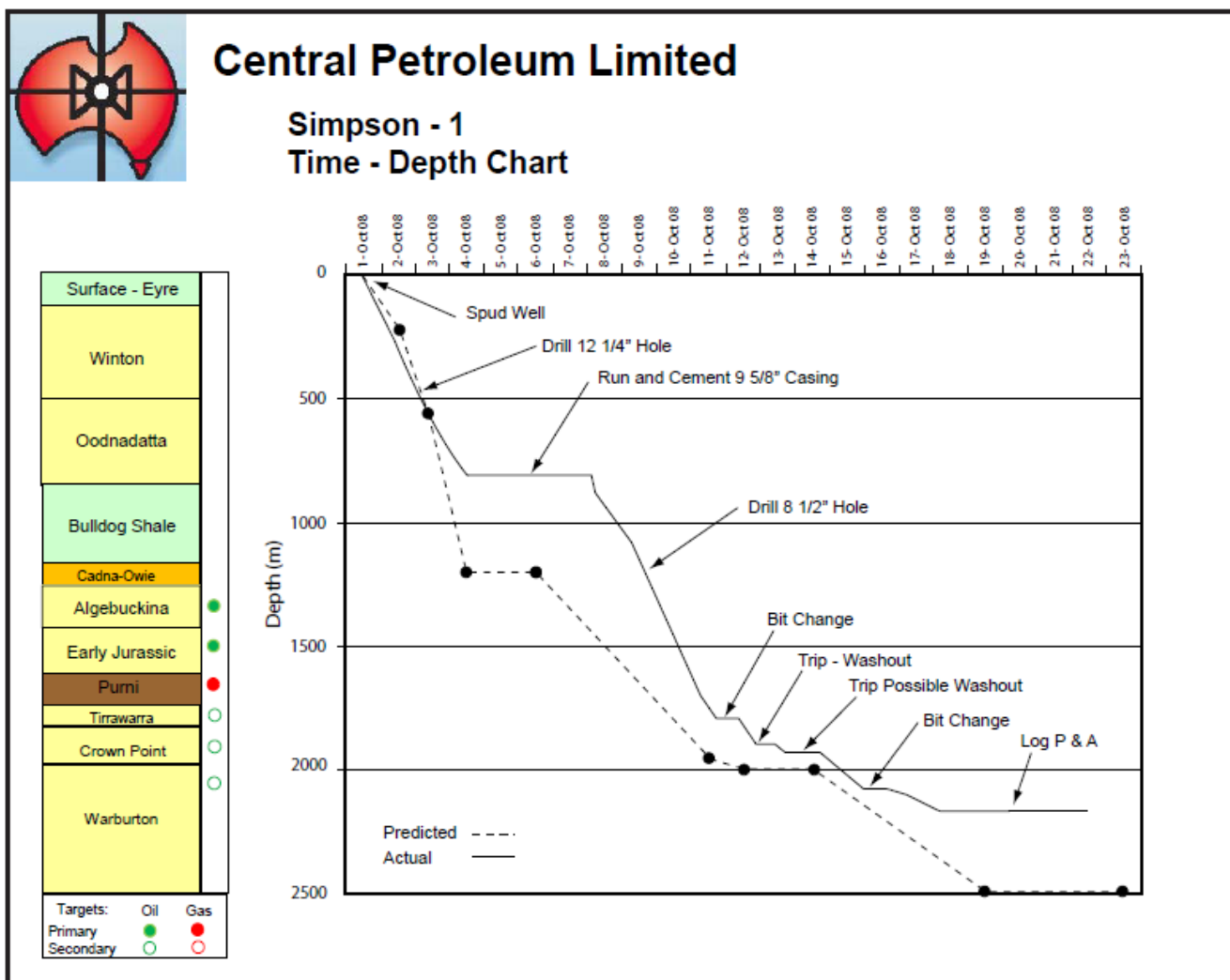


FIGURE 3

Drilling 12 1/4" Hole

Simpson-1 spudded at 1230 hours on the 1st October 2008 with a 12 1/4" drill bit. Drilling proceeded through 266m. From 266m to 279m, the bit started torquing up due to balling. The bit was pulled out of the hole, cleaned and rerun. The hole was circulated clean and drilling continued to 804m.

A wiper trip was run prior to running 9 5/8" casing. On returning in the hole during this trip tight hole was encountered at 453m and the Kelly was picked up to ream about this depth. Tight spots were also encountered from 761m to 765m and 778m to 783m, and bottom hole fill was drilled out 786m to 804m. After conditioning the mud, the drill string was pulled out with overpull of 5 to 15k.

9 5/8" Casing

9 5/8" casing was run on 4th October 2008. The casing was run to bottom without difficulty, however on pulling off bottom to make up the landing joint the casing could not be moved. Circulation was then established and the pipe worked, pulling up to 150k without movement. Circulation was good (300gpm) and after 15 minutes cavings were observed at the surface. A 35bbl diesel pill was pumped around the shoe but this did not free the casing. A second

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pill of SAPP was pumped slowly around the shoe while working the pipe but again the casing could not be moved. As circulation was still good, it was decided to cement the casing in place.

The 9 5/8" casing was cemented in place at 795m with 208 bbls of 11.8ppg lead slurry and 19.6 bbls of 15.8ppg tail slurry. Six barrels of cement returned to surface before the plug bumped.

Drilling 8 1/2" Hole

After the blowout preventer was nipped up, drilling of the 8 1/2" hole commenced on the 7th October 2008. Three metres of new hole were drilled to 807m whereupon a formation integrity test was carried out. With 8.7 ppg of mud in the hole a maximum pressure of 725 psi was recorded that translates to an equivalent mud weight of 14.0 ppg with no leak off.

Drilling proceeded to 1047m whereupon pump pressure dropped dramatically. Tripping out of hole found a washed out section of drill pipe at 585m and a second at 595m. A third joint was laid out as a precaution based on visual inspection. No cavings were observed at bottoms up after this trip.

Drilling proceeded down to 1798m at which point the drilling rate slowed. The bit was pulled and replaced on 11th October. On running in the hole, pipe had to be worked through tight spots from 1581m to 1666m and 1704m to 1798m. Bit 3, a PDC bit, drilled 8.5 hours before pressure loss forced it to be pulled again. No washouts were found but the float equipment was rebuilt. The same bit was run into the hole and drilled from 1899 to 1923m at which point the rate of penetration died and when pulled the bit was found to be undergauge.

The new bit run in the hole was an IADC 517 tricone bit but it had to be pulled again when it plugged up on the way into the hole. After cleaning out the jets it was returned into the hole. The hole had to be reamed at 1014m and again from several intervals between 1373m and 1923m. Drilling continued from 1923m but at 2075m the rate of penetration slowed up significantly (Top of Warburton Group). The bit was changed out once again going from an IADC 517 to 617, however rate of penetration remained slow. This bit drilled to TD at 2165m at 0500 hrs on 18th October 2008.

Baker Atlas ran a VSP as the first log in the well. It encountered a bridge at 930m, but the tool was worked through this bridge. The log was obtained on 19th October 2008.

Delay in running the GSlam logs first off was due to a logistical error resulting from a decision by Baker Atlas to demobilize the logging tools to Moomba following the logging of CBM 93-01. A clean out trip was carried out immediately before the GSlam logs were eventually run.

The GSlam logs, MLL-DLL-XMAC-ZDL-CN-GR, were run in the hole reaching a depth of 2161.5m and logged the well on 20th October 2008.

No moveable hydrocarbons were detected in the well and consequently it was decided to plug and abandon Simpson - 1.

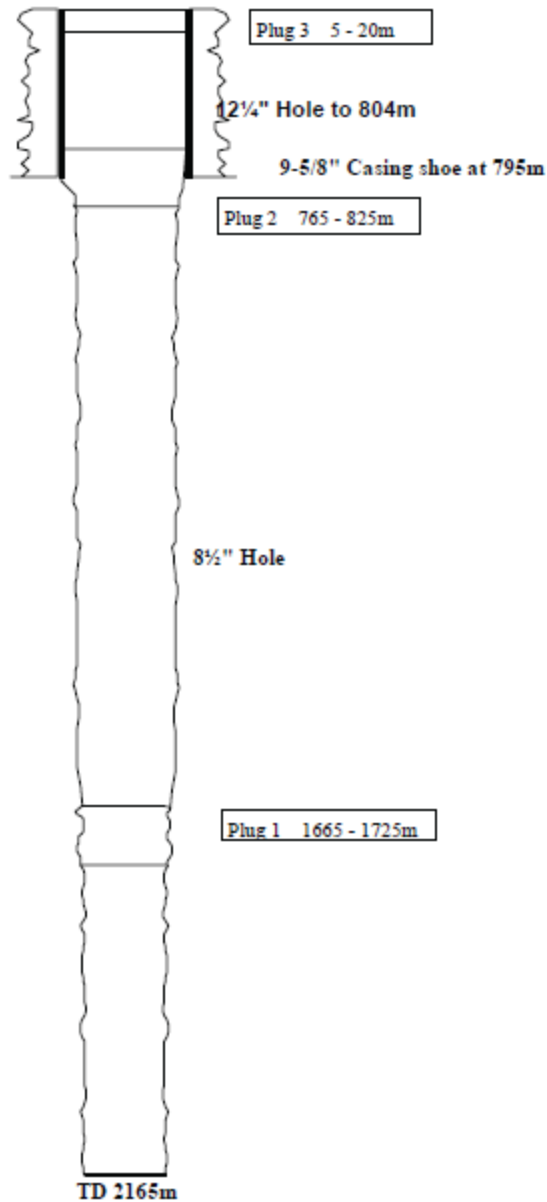
Abandonment plugs were set from 1665m to 1725m, 765m to 825m over the 9 5/8" casing shoe and from 5m to 20m at surface on 20 October 2008. The rig was released at 0800hrs on 22 October, 2008.

Simpson - 1 was the last of three wells drilled in the Central Petroleum Limited Pedirka Basin drilling programme.

3.2 Particulars of Drilling

Figure 4 is a schematic diagram of the wellbore as abandoned.

Figure 3: Simpson-1 wellbore Schematic



3.2.1 Casing and equipment installed in or on the well including details of abandonment.

Conductor Casing - 16" conductor pipe was set at 13.5m.

Surface Casing – 9 5/8" casing was set at 795m (wireline depth 794.2m).

3.2.2 Abandonment Details

Simpson -1 was plugged and abandoned on 21st October, 2008. An open hole plug was set at 1665m to 1725m to isolate the Algebuckina Sandstone aquifer. A second plug was set across the 9 5/8" shoe from 765m to 825m leaving 30m of cement above and below the casing shoe. A 15m surface plug was set from 5m to 20m. A wellbore schematic is included as Figure No. 4

3.2.3 Cementing operations carried out

The following cementing operations were performed:

Conductor Casing – A 24" hole was augered to 13.5m. The 16" conductor pipe was cemented in place with 1400kg (70sxsX20kg) of Class A cement and 1sx of calcium chloride on 30 September, 2008.

3.2.6 Drilling Fluids

12 ¼" Top Hole, 13.5m to 804m.

Aus Gel Spud Mud with KCl brine addition from 95m increasing to 5% KCl with depth.

8 ½" Hole, 804m to 2165m (Total Depth)

KCl /PHPA/ Pac-R.

Mud weight was kept between 8.9ppg and 9.2ppg throughout the well. Further detail on Drilling Fluid composition, performance and usage can be found in the Drilling Fluid Recap located in Appendix No.8. A detailed daily record of drilling fluid properties is summarised in Section 5 and in daily reports supplied by RMN Pty Ltd within this document.

3.2.7 Drill Stem Testing

No drill stem tests were carried out during the course of the well.

3.2.8 Lost Time

A total of 37 hrs were tallied as lost time. Sixty-four percent of this was associated with stuck 9 5/8" casing, sixteen percent was due to tight hole conditions, twelve percent was due to a washout in the drill pipe, five percent due to rig repair and three percent was lost while an accident was being investigated. A detailed breakdown is located in the Appendix No.1.

3.2.9 Water Supply

Water for drilling purposes was taken from a water bore drilled close to the location. This well, Simpson Bore, produced water at a rate of 5 l/hr. Water was produced from the Tertiary Eyre Formation. The water was not potable for human consumption. Water was produced to a turkey's nest then pumped to the rig.

4.0 Logging, Sampling and Testing

4.1 Cuttings Samples Collected

10m interval washed and dried cuttings samples were collected from 15m to 1170m.
5m interval washed and dried cuttings samples were collected from 1170m to 1830m.
3m interval washed and dried cuttings samples were collected from 1830m to 2165m (TD).

Selected samples were collected for source rock analysis and palynological analysis. Descriptions of the washed and dried cuttings samples are located in Appendix No.3.

4.2 Cores

No cores were cut or sidewall cores collected in the well.

4.3 Mudlogging

Standard mudlogging services were provided by Baker Inteq for the duration of the well. The mudlog for the well is included as Enclosure No.1 of this report. Mudlogging reports and data provided by Baker Inteq and are included in this document as Appendix No.9.

4.4 Wireline Logging

Wire logging services were provided by Baker Atlas. One log run was recorded at total depth of 2165m (Driller). This was the GSlam run, which combines all basic logging tools, specifically:

Micro Laterolog; Dual Laterolog; Multiple Array Acoustilog; Compensated Z-Density; Compensated Neutron Log; Gamma Ray Log; TTRM Sub.

Logs reached a depth of 2161.5m. Log data was recorded from 2160.8m to 12.5m. 9 5/8" casing shoe was at 794.2m this compared with 795m drillers depth. Maximum bottom hole temperature was 100° C, 11 hours since last circulation.

Final wireline log data and field logs are included within Appendix No.4.

4.5 Vertical Seismic Profile

A Vertical Seismic Profile was recorded by Baker Atlas. This survey was carried out prior the running of the GSlam electric logs. Results and contractor report are located in Appendix No.5.

4.6 Drill Stem Testing

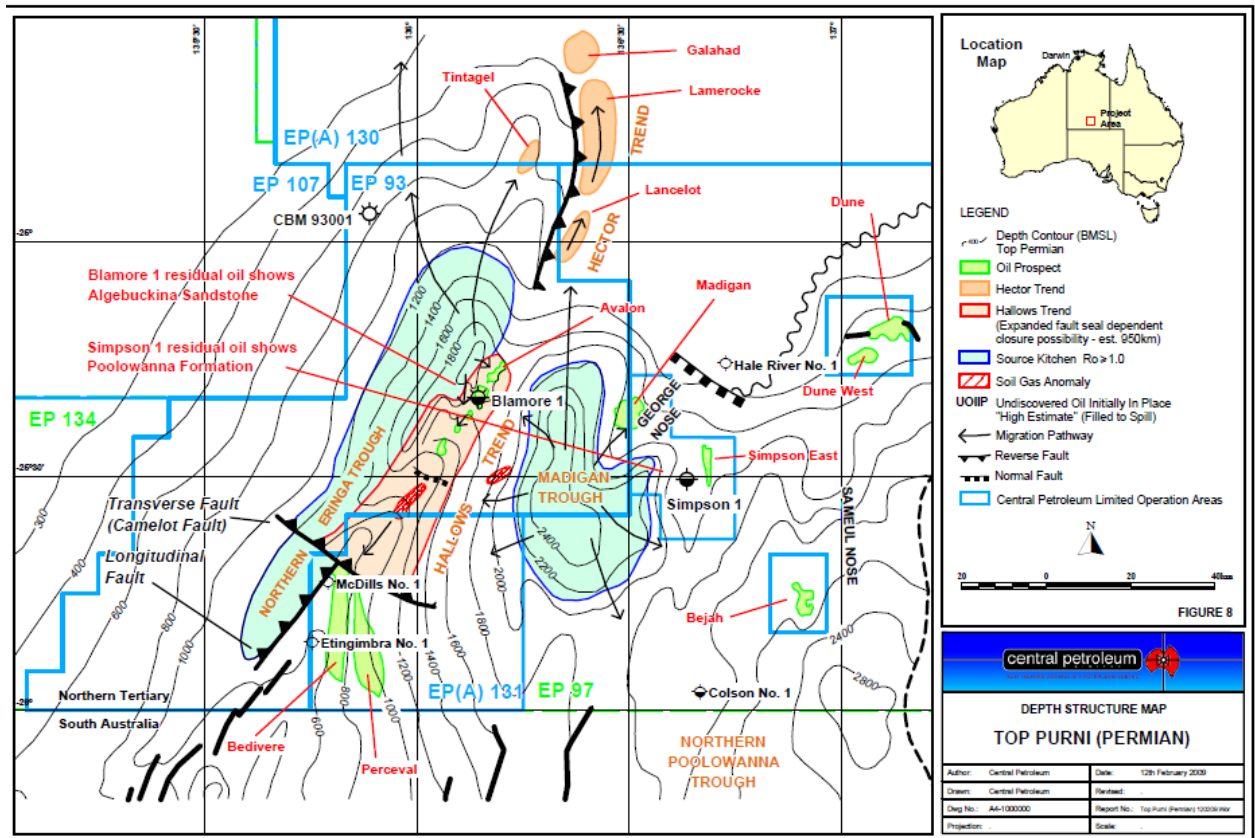
No drill stem tests were conducted in the Simpson-1 well.

5. Geology and Formation Evaluation

5.1 Regional Geological Setting and Prospect Description

The Pedirka area occupies the Simpson Desert and encompasses four vertically stacked sedimentary basins, namely the Palaeozoic Warburton Basin, the Permo-Carboniferous Pedirka Basin, the Triassic Simpson Basin, and the Jurassic-Cretaceous Eromanga Basin. The basins are superimposed to some extent and over wide areas reflect a structural footprint controlled by Palaeozoic structuring and palaeo-depositional facies.

Figure 4: Structural Elements Simpson-Blamore area, Pedirka Basin



The Simpson Prospect was mapped as a dip closure on the Simpson Nose which is a multi-crested structure plunging towards the southern Madigan Trough.

The structure has major Palaeozoic structural control at depth where a Devonian-Carboniferous carbonate platform is defined by major bounding normal faults (Erec Prospect). Younger Permo-Mesozoic targets (Simpson Prospect) are draped over the earlier platform with the structure dominated by the Erec Fault on the eastern margin of the platform.

The stratigraphic section encountered in Simpson-1 is very similar to that encountered in Colson-1, 50 km to the south. This is true for the Jurassic- Cretaceous section which is similar to that seen to the south and a full section is recorded – i.e. Winton Formation, Oodnadatta Formation, Bulldog Shale, Cadna-Owie Formation, Murta Member, Algebuckina Sandstone and Poolowanna Formation.

As at Colson-1, Cycle-1 of the Poolowanna Formation was present with the claystones at the top of the formation providing good seal and potential source rocks. Significantly some orange-brown staining of sandstone grains, indicated to be probable residual oil (dead oil) was described in the lower part of the Cycle-1 sandstone in the Poolowanna Formation in Simpson-1 with abundant orange brown staining noted through the upper part of the Triassic Walkandi Formation. The presence of this staining suggests that oil at least migrated through this zone, however it is possible that there was a 15m thick oil column in this unit later remobilised during late stage Tertiary epeirogenesis. Source rocks, in particular the Poolowanna Formation and Purni Formation coals are indicted to be mature for oil generation immediately west of the well location within the Madigan Trough.

Similar staining was observed in the Poolowanna Formation stratigraphic level in Colson -1, where based on the increase in fluorescent cut, the staining was concluded to be residual oil stain.

In Simpson-1, one 7 m coal is present with a major part of the upper part of the Purni Formation being eroded. The lower part of the Purni Formation is sandstone-dominant and in the Simpson-1 well is highly indurated. The Tirrawarra Sandstone equivalent conformably underlies the Purni Formation, improved porosity is demonstrated however it is still poor in Simpson-1.

The Crown Point Formation comprises an upward fining cycle (75 m thick) with generally medium sandstones at the base with fair porosity; this correlates with a conglomeratic sandstone intersected in Colson-1.

A sequence of red brown to grey brown silty shales mark the top of the Warburton Basin section which lies in sharp contact with well sorted aeolian sandstones with very poor porosity. The main stratigraphic component of the underlying carbonate platform, believed to be of Devonian –Carboniferous age, was not intersected.

5.2 Lithology and Formation Tops

Drill Cuttings sample lithological descriptions and SWC descriptions are included within this report as Appendix 3. Table 4 shows predicted vs actual Formation Top depths

TABLE 4: PREDICTED V ACTUAL FORMATION TOP DEPTHS

Formation Tops	Prognosed Depths		Final Depths		Difference High / Low To Prog (m)
	(mKB)	(mSS)	(mKB)	(mSS)	
Surficial & Namba Fm	4.3	49.3	4.3	49	
Eyre Fm			53	0.3	
Winton Fm			117	-64	
Oodnadatta Fm	664.3	-611.3	705	-651.7	
Toolebuc Fm			absent		
Bulldog Shale	925.3	-872.3	1011	-957.7	- 85.7
Cadna-owie Fm	1213.3	-1160.3	1154	-1100.7	+59.3
Murta Fm					
Algebuckina Sandstone	1235.3	-1182.3	1189.6	-1136.3	+45.7
Poolowanna Formation Cycle 1	1427.3	-1374.3	1696	-1642.7	+268.7
Peera Peera Formation					
Walkandi Formation			1735	-1642.7	
Purni Formation	1625.3	-1572.3	1834	-1780.7	+208.7
Tirrawarra Sandstone Equivalent	1750.3	-1697.3	1969	-1915.7	+218.7
Crown Point Formation	1817.3	-1764.3	2000	-1946.7	+182.7
Warburton Basin	1949.3	--1896.3	2075	-2021.7	+125.7
TD	1979.0	-1926.0	2165	-2111.7	

5.3 Hydrocarbon Shows

5.3.1 Gas Shows

Mudgas readings recorded in Simpson-1 were generally low throughout with the exception methane shows from 633m to 775m in the lower part of the MacKunda Formation and upper part of the Oodnadatta Formation with 5 to 15 units of background gas recorded, with three gas peaks from 740m to 775m, the highest being 65units, predominantly methane gas from a depth of 757m. It is likely that the gas detected has a biogenic origin, probably generated in the earlier part of the Tertiary.

The only other gas reading of significance was 3.6units of gas from the only significant Purni Formation coal intersected 1868m to 1875m. The chromatographic breakdown of this peak was, C1 1975ppm, C2 185ppm, C3 146ppm, iC4 88ppm, nC4 24ppm.

5.3.2 Top Walkandi Formation Residual Oil Shows and Residual Oil Shows in the lower part of the Poolowanna Formation, Cycle 1

The upper part of Poolowanna Formation from 1695m to 1727m drilled relatively slowly, generally a consistent 10 m/hr and predominantly claystone with a series of thin coals that are clearly seen on wireline logs, with minor thin beds of poor quality sandstone towards the base. No oil shows or residual oil (dead oil) staining was seen, fluorescent cut was pale white.

A drilling break at the base of the lowest claystone at 1727m (1726.5m, mudlog) was marked with the drill rate increasing to over 30 m/hr, with wireline log porosity of about 20%.

A grab sample from 1727m did not show obvious indication of oil or stain, pale white cut fluorescence was present. In the 1725m to 1735m samples some brown staining of sand grains is reported, this associated with orange stained kaolin clay. The brown staining of sand grains was considered to be likely dead oil stain.

Main Residual Oil Show – Walkandi Formation

The top of the Walkandi Formation was picked at 1735m. A two metre claystone is present at the top. From wireline logs a porous streak was intersected between 1737m to 1741m, with the claystone drilling slowly and the sand break drilling to 20 m/hr. Log derived porosity is lower than the overlying Poolowanna, however still appears to be greater than 15% for sands in the Upper Walkandi.

The sample from this sand 1735m to 1740m was very striking in colouration. It was described as medium orange grey sandstone, with “common brown iron staining”, really should have been described as abundant, with 60% of sand grains demonstrating obvious stain, with the pattern of staining suggesting dead oil. No visual fluorescence was detected in this sample.

Common brown staining of quartz grains in subsequent samples, 1740m to 1745m and 1745m to 1750m although from logs the interval 1741m to 1748m is a claystone. Brown staining of grains is not specifically reported in descriptions, however the sandstone colouration reported, very light grey to very light orange grey, suggests some residual oil stain is present.

Geochemical Assessment Zone 1720m to 1750m

Preliminary analysis of samples the zone was carried out by Geoscience Australia. This consisted of extract analysis and Rockeval analysis of five cuttings samples.

The results of these analyses are tabled below.

TABLE 5: Preliminary Extract Analysis, Lower Poolowanna – Upper Walkandi

TOP m	BASE m	AGSO No	extraction (g)	EOM (mg)	Sats (mg)	Aroms (mg)	Sats/Arom	ppm HC
1720	1725	1980464	22.30	62.1	11.5	8.4	1.4	892.4
1725	1730	1980465	22.32	41.3	6.2	5.4	1.1	519.7
1730	1735	1980466	22.53	29.8	0.8	1.3	0.6	93.2
1735	1740	1980467	20.38	29.7	0.8	3.1	0.3	191.4
1740	1745	1980468	22.01	20.8	2.2	2.5	0.9	213.5
1745	1750	1980469	23.05	11.7	1.4	1.7	0.8	134.5

TABLE 6: Preliminary Rockeval Results, Lower Poolowanna – Upper Walkandi

Sample	Tmax	S1	S2	S3	PI	TOC	HI	OI	Depth,m
1980464	429	0.23	5.94	0.35	0.04	3.2	186	11	1725
1980465	428	0.15	2.82	0.5	0.05	1.57	179	32	1730
1980466	429	0.08	1.31	0.54	0.06	0.83	158	65	1735
1980467	438	0.04	0.34	0.29	0.1	0.27	125	106	1740
1980468	441	0.03	0.91	0.43	0.03	0.72	126	60	1745
1980469	437	0.04	0.57	0.27	0.06	0.46	125	59	1750

The top sample (1720 – 1725m) had the highest yield of extractable hydrocarbon with the gas chromatographic trace coupled with Rockeval data generally consistent with a marginally immature to marginally mature source rock or initial locally derived migrated oil. This sample is from the lower part of the seal predominant section of the Poolowanna, with the porous Poolowanna Sandstone intersected from 1727m. There is no indication from the results that live reservoir oil was present in the lower part of the Poolowanna Formation.

The sample demonstrating greatest orange-brown stain of sandstone grains, probable dead oil stain was the 1735m – 1740m sample. Analysis numbers for this sample are consistent with lower TOC, the sample having the greatest percentage of sand grains. Trace fragments of caved Poolowanna coal were likely present in the sample, considered contamination. Detailed analysis of the longer chain molecules, say C17 plus may be more pertinent as results tabled are influenced by the presence of cuttings of other lithologies present in the sample and a dead oil stain of this nature is liable to comprise very long chain molecules.

5.4 Source Rock Quality

Rockeval Pyrolysis and Coal Petrology work was carried out on cuttings samples of the Poolowanna and Purni Formations. Raw Geochemical data for can be found in Appendix No.5 and on Coal Petrology/Maturity in Appendix No.4.

6.0 References

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