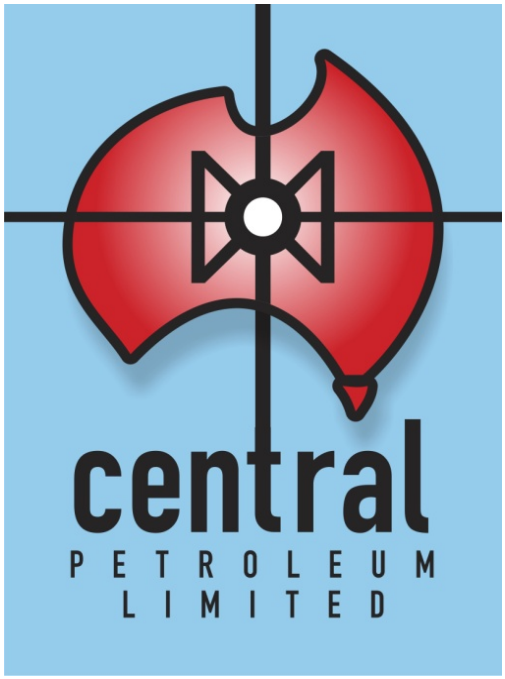

JOHNSTONE WEST-1

WELL COMPLETION REPORT

Basic Data

EP 115

19th August – 20th September 2010

Northern Territory

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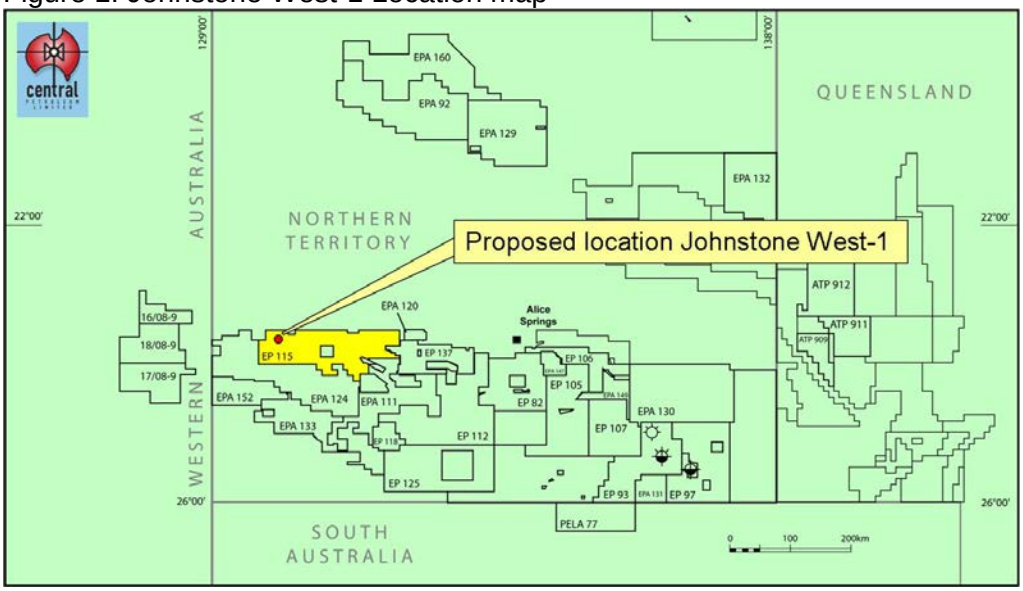
1 Introduction and Summary

Johnstone West-1 was drilled by Central Petroleum Ltd in Exploration Permit EP 115 in the western part of the Amadeus Basin, Northern Territory, location map (figure 1). The well was spudded on 19th August 2010 and reached TD of 1475m on the 7th September 2010 due to technical issues resulting from fish in hole when attempting to core in the Lower Stairway Sandstone. After unsuccessful fishing attempts, the well was plugged back and Johnstone West-1ST1 was kicked off at 1415m on the 14th September 2010. The well reached TD of 1666m on the 20th September 2010.

Figure 1: Johnstone West-1 Location map



The primary aim of Johnstone West-1 was to test the hydrocarbon potential of a robust back thrust faulted anticlinal structure mapped at the Pacoota and Stairway Sandstones and the Mereenie Sandstones. The secondary aim was to core the shales of the Horn Valley Siltstone, a sequence which separates the Pacoota and Stairway Sandstones.

It was proposed to drill a vertical well to a maximum depth of 1880mTVDRT using air drilling techniques. The primary reservoir objectives were the Ordovician Pacoota and Stairway sandstones. A secondary reservoir objective was in the shallower early Devonian Mereenie Sandstone/Parke Siltstone reservoir-seal couplet. The Mereenie Sandstone was intersected at 994mKB. This proved to be water bearing with very poor gas occurrences but strong water flows.

Prior to the 2007 Amadeus seismic survey acquired by Central Petroleum, the existing 1960's seismic coverage was sparse and of poor quality (1962 single fold coverage). Seismic acquired over the structure in 2008 and 2010 has resulted in a more robust understanding of structuring.

The drilling programme attempted to assess the potential of the Johnstone structure and fulfilled the minimum guaranteed commitment programme for permit year two. The Pacoota Sandstone was predicted at 1217m TVDRT. It was intersected at 1523.8m. No shows were observed in the Pacoota Formation although good oil shows were encountered in the Lower Stairway Formation and significant gas shows were recorded in the Horn Valley Siltstone. Although DST's failed to test any hydrocarbons from either the Lower Stairway sands or the Horn Valley Siltstone, there was significant encouragement from the show evaluation to warrant suspending the well for further investigation. Table 5 in this report shows the actual and prognosed Formation tops depth penetrated in this well.

2 General Data

Basic results are summarized in the Well Index Sheet (table 1).

Table 1: Johnstone West-1 & ST1 Well Index Sheet.

Well Name: Johnstone West-1. **Operator:** Central Petroleum Limited.	**Classification:** Exploration.	
Location: Latitude 23º 39' 21.861"S Longitude 129º 56' 39.124"E GDA 94 Zone 52	**Rig Details**: Rig Name: MB Century Rig 7. Contractor: Century Drilling. Rig Type: Land.	**Dates**: Spud date: 19th Aug 2010. TD date: 20th Sep 2010. Rig released: 5th Oct 2010.
Basin: Amadeus. **Field:** Wildcat. **Permit:** EP 115, Northern Territory, Australia.	**Depths:** Surface Elevation (asl): 531.3m. Rig Datum, KB: 5.2m agl. Total Depth: 1666m.	**Status** Plugged and suspended.
Casing/Liner Details Size Depth 13⅜" Conductor 30.84m 9⅝" 511.48m 7" 1662.17m	**Mud Details:** Mud Type Air/mist: 5.2-1147m KCL polymer mud: 1147-1666m	**Trajectory**: Vertical: Max deviation 7.5º at 1564m *Note: JW-1(ST1) was kicked off and sidetracked at 1415m after plugging back over core barrel left in hole at 1475m*
Coring Details 1327-1336m, 1475- core barrel stuck in hole.	**Sidewall Cores** No side wall coring was executed.	**Cuttings Interval** **Sample Rate** 30m to 490m, 810-1010m 10m 490m to 810m, 1010-1327m 5m 1336m to 1666m 3m

FORMATION	MD KB (m)	TVD KB (m)	Isopach TVD (m)	Subsea TVD (m)	TWT (msec)	Comments
Brewer/Hermannsburg	5.2	5.2	940.3	+531.3		Mid- Late Devonian
Parkes Siltstone	945.5	945.5	48.5	-408.8		Mid Devonian
Mereenie Sandstone	994	994	319.5	-457.5		E Devonian
Stokes Siltstone	1313.5	1313.5	78.5	-781.5		Late Ordovician
Upper Stairway Sandstone	1392	1392	23.0	-855.5		E. Ordovician
M Stairway Sandstone	1415	1415	55.0	-878.5		E. Ordovician
Lower Stairway Sandstone	1470	1470	15	-933.5		Llanvarian
Horn Valley Siltstone	1485	1485	38.8	-948.5		Llanvarian
Pacoota Sandstone	1523.8	1523.8	114.2	-987.3		Arenigian
Goyder Formation	1638	1638	43+	-1101.5		Late Cambrian – E Ordovician
Total Depth	1666	1666				Late Cambrian

Logging

Date	Depth (m)		Description	
	From	To		
21 Sep 10	10	1665.7	SP-GR-DLL-MLL-Density-Neutron.	
21 Sep 10	1281	1661	CMI-GR, monopole/Xdipole semblance (1252-1652m).	
21 Sep 10	1046	1633.6	MFT-GR	
22 Sep 10	0	1564	VSP	BHI run on WFT line. 16 levels

Well Testing: DST 1: Horn Valley Siltstone 1501.95 -1519.62m, no flow.
DST 2: Lower Stairway Sandstone (1470-1481m), no flow. Bubbles at surface. Rev circ 12.5bbl diesel, 21bbl water.

Well Name:	Johnstone West-1
Well Classification:	Exploration
Interest Holders:	Central Petroleum Limited 100% (Operator)
Petroleum License:	EP 115, Northern Territory
Location:	Latitude: 23º 39' 21.861S" South Longitude: 129º 56' 39.124" East Australian Map Grid Zone: GDA 94, Zone 52
Ground Level (GL):	531.3m asl
Kelly Bushing (KB):	536.5m asl - Datum
Total Depth (KB):	1666m
Drilling Contractor:	MB Century Drilling
Drilling Rig:	Century Drilling Rig 7 (See Rig Specifications in Appendix 12)
Contractors:	
Drilling Fluids:	Australian Mud Company
Mud Logging:	Weatherford
Wireline Logging:	Weatherford
Cementing:	Viking Energy
Earth Works/water carting:	BJT Services
Spud Date:	19th August 2010
Total Depth Reached:	20th September 2010
Rig Released:	5th October 2010
Well Status:	Plugged and Suspended

3 Drilling

3.1 Summary of Drilling and Related Operations

Drilling 17 ½" Conductor Hole

The MB Century Rig 7 was rigged up on 18th August 2010 and the 17 ½" conductor hole was drilled to 7.41m MDRT as part of the cellar floor. The mouse hole and rat hole was drilled with compressed air and a 12 ¼" drill bit. These were considered the pre-spud activities.

Johnstone West-1 was spudded at 0130hrs on 19th August 2010. The 17 ½" insert bit was made up with an 8" drill collar and air drilled the conductor hole to 23m MDRT. Water was encountered at 21.5m MDRT. The hole was then drilled with spud mud to 30.84m MDRT and the drilling assembly tripped out.

13 $^{3}/_{8}$" Casing

The 13 $^{3}/_{8}$" 54.5ppf K-55 BTC conductor casing was ran on 19th August 2010. The casing was landed on bottom at 30.84m MDRT and 7bbls of 15.4ppg cement was pumped prior to the cement head being plugged up. 10bbls of 15.6ppg cement was then pumped followed by an additional 6bbls. 17 sacks of cement was mixed and placed around the cellar floor.

Approximately 5.48m of casing was cut off and the blooie line was rigged up with the rotating head to the casing stump.

Drilling 12 ¼" Surface Hole

A 12 ¼" air hammer assembly was picked up with a 12 ¼" string stabilizer and 8" drill collar prior to being tripped in. Drilling proceeded to 74.7m MDRT and a Totco wireline survey was conducted prior to the BHA being tripped out to be changed.

A new BHA with the 8" drill collar, 4x6 ¼" drill collars and 6 ½" drilling jar was tripped in with the air hammer assembly. Drilling proceeded to 299m MDRT where a blockage in the drill string was experienced and attempts to clear it were unsuccessful.

Upon tripping out, it was found that there were accumulated silts inside the air hammer which were cleaned out and the same BHA tripped in. Drilling proceeded to the section TD at 513m MDRT though loss circulation was encountered at 490m MDRT with a maximum overpull of 35,000 lbs.

The hole was blown clean and was displaced with 255bbls of basic gel/water based drilling fluid for casing running prior to the BHA being tripped out. An insert bit was then used to conduct a wiper trip with no fill tagged on bottom. Prior to tripping out, loss circulation material drill fluid was pumped into the well.

9 $^{5}/_{8}$" Casing

The 9 $^{5}/_{8}$" 36ppf K-55 BTC surface casing was ran on 24th August 2010. The casing was landed on bottom with the float shoe at 511.48m MDRT and the float collar at 499.02m MDRT.

The surface casing was cemented in place with 75.5bbls of 12.8ppg lead cement and 68.4bbls of 15.6ppg tail cement. There was 35bbls of cement returns and waited on cement for 8.5 hrs.

The 'A' section was installed, BOPs nippled up and the blooie line installed to the rotating head. BOP pressure tests were conducted on 26th August 2010.

Drilling 8 ½" Intermediate Hole

A Reed 8 ¾" insert bit was tripped in to drill out the shoe track and 3m of new formation whereby a formation integrity test was performed. With 8.4ppg of water in the hole and a maximum pressure of 1,320psi was recorded which gives an equivalent mud weight of 23.4ppg. The hole was drilled to 525m MDRT to clean and dry hole prior to being tripped out for an air hammer assembly.

The hole was air drilled to 546m MDRT and then continued with air mist to 620m MDRT prior to encountering a torqued up drill string which was jarred at 140,000 lbs. Drilling proceeded to 777m MDRT whereby the rotary table uni joints had to be replaced and a wiper trip was conducted from 668m MDRT to 777m MDRT with a wireline survey conducted after that.

The well drilled ahead to 791m MDRT prior to being tripped out to change the string stabilizer to an 8 ½" blade. Drilling proceeded to 1,040m MDRT where the drill string was tripped out and an 8 ½" Reed insert bit was tripped in to continue drilling to casing point.

It was programmed to set the 7" intermediate casing at 1,040m MDRT in the Stokes Siltstone. However this formation was not found at the prognosed depth. It was decided to continue drilling until the Stokes Siltstone was intersected.

The well was air mist drilled to 1,147m MDRT when water was pumped into the well to kill the water influx from the Mereenie Sandstone. The drill string was tripped out and the weekly BOP pressure test was conducted. Another 8 ½" Reed insert bit was picked up with an additional 10 x 6 ¼" drill collars and the jars repositioned.

The hole was displaced with a light gel based drilling fluid with a mud weight of 8.6ppg due to the heavy water influx from the Mereenie Sandstone. The well was mud rotary drilled to 1,327m MDRT. At that time it was interpreted that the Stokes Siltstone was missed and that the Horn Valley Siltstone may have been encountered at 1,315m MDRT.

A wiper trip was conducted to 1,139m MDRT and the BHA tripped out to run the Baker Inteq coring assembly. The 6" coring assembly was tripped in and an obstruction was tagged at 1,101m MDRT. An overpull of 60,000 lbs was required to free the drill string, it was attempted to ream the section with the core head and the 8 ½" string stabilizer. However, high torque was experienced prompting the decision to trip out.

The 8½" string stabilizer was laid out, the coring assembly was tripped in whereby a 9m core was cut with 100% core recovery and the coring assembly tripped out. An 8 ½" Reed insert bit was tripped in and drilling proceeded with mud to 1,475m MDRT, where oil shows were observed in the drill cuttings. The drilling assembly was tripped out for the coring assembly.

The 6" coring assembly was tripped in to cut an 18m core. However only 0.2m was cut and it was noticed that a weight on bit past 3,000 - 4,000 lbs could not be applied and the pump pressure was very high with excessive rotary torque. Decision was made to trip out and it was found that the core head, bottom core barrel stabilizer & aluminum inner tubes were left in the hole.

Johnstone West-1ST1

Several attempts were made to fish the equipment left in the hole without success. The weekly BOP pressure test was conducted and it was decided to plug back to 1,415m MDRT and sidetrack the well on 10th September 2010. 15.91bbls of 15.6ppg Class G cement was pumped and displaced with 63.75bbls

of 8.6ppg mud. A tight spot was encountered while tripping out the drill string to dress off the cement plug at 1,399m MDRT. The drill string was worked in a downward manner to free it and the mud weight was increased to 8.9ppg.

Another drill string was tripped in to circulate the hole and conduct a 5 stand wiper trip. A tight spot was encountered at 1,401m MDRT and the mud was conditioned and circulated with the mud weight being increased to 9.2ppg. The wiper trip continued to 1,316m MDRT with minimal overpull.

The 6 ¾" Bico mud motor was picked up and tripped in with a new 8 ½" Reed insert bit. The sidetrack commenced on 14th September 2010 in a southerly direction. Directional drilling proceeded to 1,479m MDRT and the directional assembly tripped out.

The angle on the motor was reset to 0° and a new 8 ½" Reed insert bit was picked up, and tripped in with the mud motor. Drilling with the mud motor proceeded to 1,606m MDRT without incident and the assembly was tripped out for bit and BHA change.

The weekly BOP pressure test was conducted on 18th September 2010 and a new drilling assembly was tripped in with the mud motor. Drilling with the mud motor proceeded to TD of 1,666m MDRT at 0930 hrs on 20th September 2010. It was originally programmed to drill to 1,880m MDRT, however, it became more difficult to maintain the hole as there was a long open-hole section and the shallower sections have been open for close to a month.

A wiper trip was conducted to 1,562m MDRT and the drilling assembly tripped out. The Weatherford wireline unit was rigged up to run wireline logs. The supercombo logs, MBE-MCG-MDN-MPD-MSS-MUG-MLE-MMR were run in hole to TD and logged the well without problems on 21st September 2010.

The second run consisted of the SHA-MCG-MIM-MIE-MDM-MDT-MDR tools were run in hole to TD without problems on 21st September 2010. The third logging run consisted of the MCG-MFT tools with a total of 27 points logged on 22nd September 2010. The VSP was run using Baker Atlas equipment with the SGS air gun on 23rd September 2010.

7" Casing

The 7" 23 & 26ppf K-55 BTC production casing was run on 24th September 2010. The casing was landed on bottom with the float shoe at 1,662.17m MDRT, top of float at 1,649.72m MDRT and the marker joint from 1,348.38m – 1,349.38m MDRT.

The production casing was cemented in place with 90 bbls of 12.8ppg lead cement and 44bbls of 15.6ppg tail cement. 209bbls of water were used as displacement and the plug bumped at 1,590psi. There were full returns throughout the job as there were signs of preflush at surface.

The 'B' Section wellhead was installed and the 7 $^{1}/_{16}$" BOP stack was nippled up. The x bushing and the 7" slip and seal assembly was pressure tested on 25th September 2010. The BOPs were function and pressure tested.

Well Testing & Completion

The 7" casing scraper was tripped in on 2 $^{7}/_{8}$" tubing and the well was displaced with KCl brine. The scraper was then tripped out after tagging cement at 1,627m MDRT. The gauge ring and junk basket was run prior to pressure testing the Kelly cocks.

The TCP & DST tools were made up and tripped in to test the Horn Valley Siltstone. With the packer set and pressure tested, the bar was dropped and the interval from 1,502m - 1,520m MDRT was perforated. The well was allowed to flow and the slick-line unit was rigged up for slick-line operations.

The packer was freed and the test string tripped out. A CCL with gauge ring run was performed but the tool malfunctioned. It was found the CCL was flooded and the top slip on the bridge plug had split. The slip was replaced and the bridge plug was set at 1,499m MDRT which was then subsequently pressure tested to 2,500psi.

A second bridge plug was tripped in but it did not set at 1,498m MDRT. It was then decided to trip out to troubleshoot the problem. There was a sudden overpull at 330m MDRT. The decision was made to leave the bridge plug on top of the first at 1,499m MDRT. The bridge plug then got stuck at 1,130m MDRT as it was being run in.

The T-bar was installed and attached to the rig blocks to part the cable weak point. 3 ½" drill pipe was picked up and tripped in to fish out the bridge plug with 5 ¾" Bowen Overshot with a 3 $^{1}/_{8}$" basket grapple. The fish was not tagged when the fishing assembly was tripped in to 1,490m MDRT. The 3 ½" drill string was tripped out and the completion assembly was made up.

The completion packer was tripped in and set on 3 ½" drill pipe. The drill pipe was then tripped out and laid down. The completion tubing was made up with the already made up completion assembly and tripped in. The 7 $^{1}/_{16}$" BOPs were nippled down, the Xmas tree was nippled up and pressure tested.

The bar was dropped to perforate the Stairway Sandstone interval and the well monitored. The slick-line unit performed a gauge ring run and then ran in down-hole gauges to hang off the nipple in the completion assembly. The well was tested and the gauges retrieved with the bar. The Weatherford memory gauges were prepared and set using slick-line on the lower X profile nipple.

Hydrocarbon indicators were observed while drilling the well, though none flowed when the well was tested. It was decided to suspend Johnstone West-1 for later re-entry. The rig was released at 1200hrs on 5th October 2010.

Johnstone West-1 was the second well drilled in the Central Petroleum Limited 2010 Conventional Drilling Campaign.

3.2 Particulars of Drilling

3.2.1 Particulars of the equipment installed in or on the well

Other than casing, the following completion components were installed in/on the well:

Table 2: Johnstone West-1, equipment used on well.

Equipment	Depth
2 $^{9}/_{16}$" Xmas tree	Surface
7 $^{1}/_{16}$" x 2 $^{7}/_{8}$" tubing hanger	Surface
2 $^{7}/_{8}$" tubing 6.5ppf J-55 EUE	1,455.285m (total length)
2 $^{7}/_{8}$" CXD sliding sleeve	1,409.88m
X profile nipple (upper)	1,430m
Locator no-go sub	1,452.09m
Seal assembly & mule shoe	1,452.205m
7" x 4" Arrowdrill completion packer	1,455.01m

Equipment	Depth
X profile nipple (lower)	1,456.4m
2 $^{7}/_{8}$" ported debris sub	1,466.26m
2 $^{7}/_{8}$" Mechanical release	1,466.41m
2 $^{7}/_{8}$" Gun space (pup joint)	1,466.79m
Safety mechanical firing head	1,468.2m
4 ½" TCP gun	1,468.29m
4 ½" TCP bull nose	1,481.5m

3.2.2 Casing and equipment installed including details of suspension

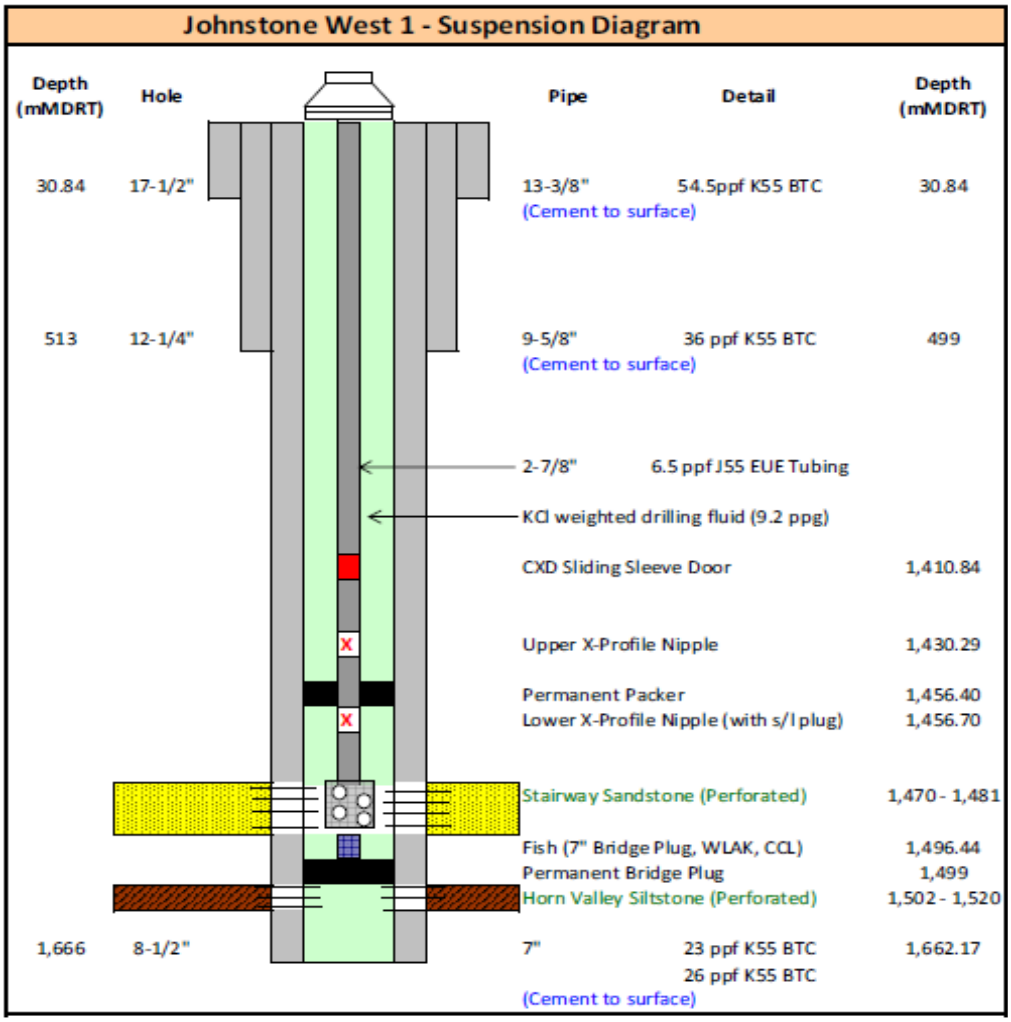
Conductor Casing – 13 $^{3}/_{8}$" conductor casing was set at 30.84m MDRT.

Surface Casing – 9 $^{5}/_{8}$" surface casing was set at 511.48m MDRT.

Production Casing – 7" production casing was set at 1,662.17m MDRT.

Completion – 2 $^{7}/_{8}$" 6.5ppf J-55 EUE completion tubing was run with the completion equipment to 1,481.5m MDRT. The pipe tally for the completion is included in Appendix 12 of this report.

Figure 2: Johnstone West-1ST1 Suspension diagram.



Suspension – The well was suspended with 9.2ppg weighted KCl fluid and the 2 $^{9}/_{16}$" Xmas tree was installed at surface.

3.2.3 Cementing operations

The following cementing operations were performed:

Conductor Casing – A 17½" hole was drilled to 30.84m MDRT. The 13 $^{3}/_{8}$" 54.5ppf K-55 BTC conductor casing was cemented in place with 15.4ppg cement consisting of 7bbls Class G cement. This followed by 15.6ppg cement consisting of 10bbls and 6bbls Class G cement with 2% and 1% calcium chloride respectively on 19th August 2010. 17 sacks of cement was mixed and used for grouting.

Surface Casing – A 12 ¼" hole was drilled to 513m MDRT. On 24th August 2010, the 9 $^{5}/_{8}$" 36ppf K-55 BTC surface casing was cemented in place with 12.8ppg lead cement consisting of 75.5bbls of Class G cement. This was followed by 68.4bbls of 15.6ppg tail cement consisting of Class G cement. The plug was bumped at 1,630psi. There were 35bbls of cement returns.

Plug Back – On 11th September 2010, 15.91bbls of 15.6ppg Class G cement was pumped to plug back from 1,475.2m MDRT to 1,415m MDRT. The plug was tagged at 1,410m MDRT and dressed off to 1,415m MDRT.

Production Casing – An 8 ½" hole was drilled to 1,666m MDRT. On 24th September 2010, the 7" 23 & 26ppf K-55 BTC production casing was cemented in place with 12.8ppg lead cement consisting of 90bbls of Class G cement. This was followed by 44bbls of 15.6ppg tail cement consisting of Class G cement. 209bbls of water (computer read 215.5bbls) was used as the displacement fluid. The plug was bumped at 1,590psi.

3.2.4 Bit Records

A record of drilling bits used on Johnstone West-1 is presented in Appendix 7.

3.2.5 Deviation Surveys

Deviation surveys were taken using a Totco ring and Magnetic Single Shot survey tool. Survey results are tabulated in Appendix 6.

3.2.6 Drilling Fluids

17 ½" Conductor Hole (0m – 30.84m MDRT)

The conductor hole was drilled with air to section TD.

12 ¼" Surface hole (30.84m – 513m MDRT)

Air Foam
From 30.84m – 74.7m MDRT, air was used with an injection of 5-6bbls/hr of 1.5L Super Foam Xtra, 16L hammer oil and 1L Castrol ClearEdge corrosion inhibitor.

From 74.7m – 513m MDRT, air was used with an injection of 5-6bbls/hr of 1.5L Super Foam Xtra, 12-16L hammer oil and 1L Castrol ClearEdge corrosion inhibitor.

8 ½" Intermediate/Production hole (513m – 1,666m MDRT)

Air
From 525m – 546m MDRT, air was with a flow rate of 1,665 scfm was used.

Air mist
From 546m – 1,040m MDRT, air mist with an injection of 10bbls/hr of 5-9L Super Foam Xtra, 6-7.5L hammer oil and 0.8L Castrol ClearEdge corrosion inhibitor and a flow rate of 1,590-1,690 scfm was used with the air hammer assembly.

From 1,040m – 1,147m MDRT, air mist with an injection of 10bbls/hr with 20L Superfoam Xtra and 2L Castrol Clear Edge corrosion inhibitor and a flow rate of 1,375-2,020 scfm was used with the insert bit.

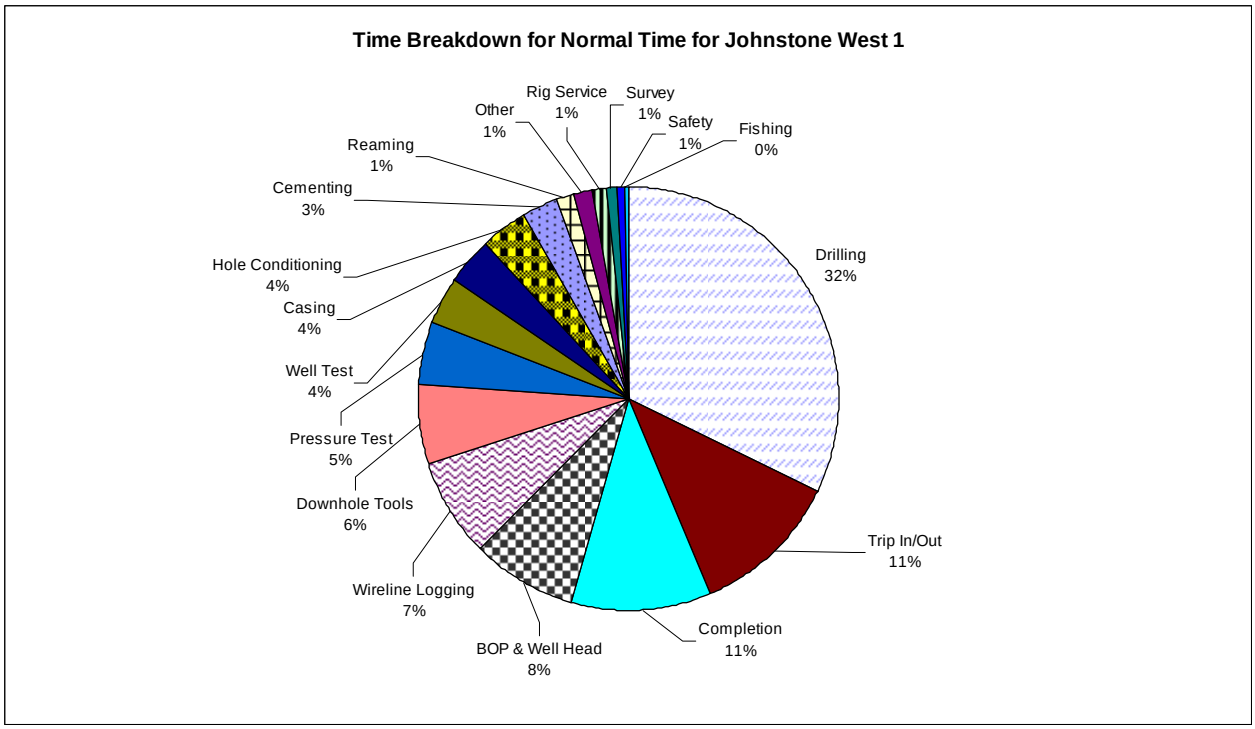
KCl Polymer Mud (Water Based)
Mud weight was kept between 8.6ppg and 9.2ppg from 1,147m MDRT to the well's TD of 1,666m MDRT. Further detail on Drilling Fluid composition, performance and usage can be found in the Drilling Fluid Recap located in Appendix 10. A detailed daily record of drilling fluid properties can be found in the daily reports supplied by RMN Pty Ltd within this document.

3.2.7 Lost Time

A total of 255.5 hrs were summed as actual lost time. The major items that contributed to the lost time were the coring equipment that got lost in hole and the subsequent time spent plugging back and sidetracking the well, which totaled 39 hours. The next item was tight hole resulting in tripping out to remove a stabilizer that was hanging up on the first coring run and multiple wiper trips had to be conducted resulting in 49.5 hrs of downtime.

An additional contribution to lost time was the 2nd bridge plug that got stuck during the completion phase resulting in 41.5 hrs of downtime.

Figure 3: Johnstone West-1 ST1 Time breakdown.



3.2.8 Water Supply

Water for drilling purposes and human consumption was taken from the water bore on the Johnstone West-1 lease, the road bore on the CPL private road and the high flow water bore past the Surprise-1 lease. Water from these bores was carted to the turkey's nest built at the well site where it was then pumped to the rig to be used as drill water. Water was also pumped to the RO plant at the camp to be treated for human consumption as the water had a high salt content.

4 Logging, Sampling and Testing

4.1 Cuttings Samples Collected

Table 3: Johnstone West-1/ST1 cuttings sample summary

Sample type	Interval RT	frequency
Washed and air dried	30-490m, 810-1010m	10m
Washed and air dried	490-810m, 1010-1327m	5m
Washed and air dried	1336-1475m(JW-1) 1415-1666m (JW-1 ST1)	3m

Note: Cored 1327-1336m. Cutting samples description is provided in Appendix 3.

4.2 Conventional Cores

One conventional core in fiberglass sleeve was cut from 1327-1336m, recovery was 8.8m. The core was sampled each meter for wellsite description, then cut into 1m lengths and the fiberglass tube was sealed at both ends and the core was shipped to the Central Petroleum Alice Springs warehouse for storage.

4.3 Mudlogging

Mudlogging services were provided by Weatherford, which included monitoring of drilling parameters, continuous gas monitoring, pit level sensors and cuttings sampling and bagging. A mud log was provided at the end of the well. Refer to Appendix 11 and Enclosure 2.

4.4 Wireline Logging/ Sidewall cores

Wire line logging services were provided by Weatherford. The following table summarizes the wireline logging evaluation program conducted in Johnstone West-1. The logs are provided in Appendix 8.

Table 4: Johnstone West-1 wireline logging summary.

Run No	Logs run	Date	Depth interval mRT	BHT ºC	remarks
1	SP-GR-DLL-MLL-Density-Neutron	21 Sep 2010	10-1665.7	58	
2	CMI-GR	21 Sep 2010	1281.6-1661.6	59.4	Run with dipole sonic.
2	monopole/Xdipole semblance	21 Sep 2010	1252-1652		
3	MFT-GR	21 Sep 2010	1046.6-1633.59	59	31 points
4	VSP	22 Sep 2010	0-1564		BHI run on WFT line16 levels.

There were no sidewall cores taken in the well.

4.5 Vertical Seismic Profile

A zero offset Vertical Seismic Profile was obtained by Baker Hughes with their ASR tool run on the Weatherford wireline, refer to Appendix 9.

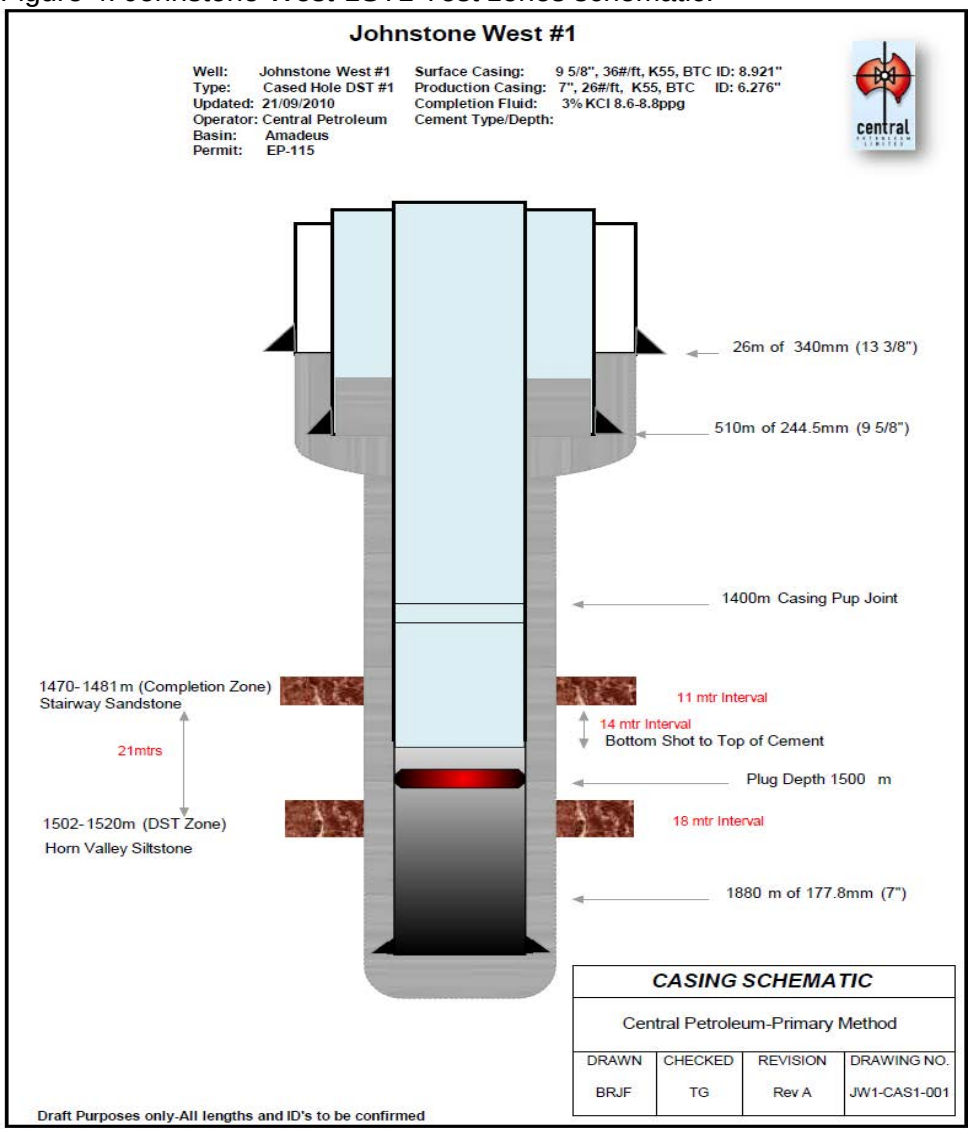
4.6 Drill Stem Testing

Two DST's (Drill Stem Tests) were conducted over the intervals 1502-1520m (Horn Valley Siltstone) and 1470-1481m (Lower Stairway Sandstone) by APAC well services Australia.

In the first test (HVS), bubbles were observed at surface of the water bucket from the hose connected to the flow out, upon opening the tool. Although no pressure increase was observed. Down-hole pressure gauges were run in the hole on wireline and set on bottom for one hour. No gas or liquid production was recorded.

The second test (1470-1481m) was conducted after a bridge plug had become stuck in the hole at 1496m and could not be retrieved. Prior to perforating a 22bbl diesel cushion was placed in the test string. Upon opening the tool bubbles were observed with no increase in pressure. After 10 hours the well was shut in for 8 hours and then reverse circulated. 12.5bbl of diesel and 21 bbl of water were recovered. The well was then shut in and the wireline pulled out of the hole. The well was then opened and flow directed to the storage tank. In all 71.25bbl of oil (diesel previously pumped in) and 28.25bbl of water were recovered. No oil odours or crude oil traces were evident.

Figure 4: Johnstone West-1ST1 Test zones schematic.



5 Geology and Formation Evaluation

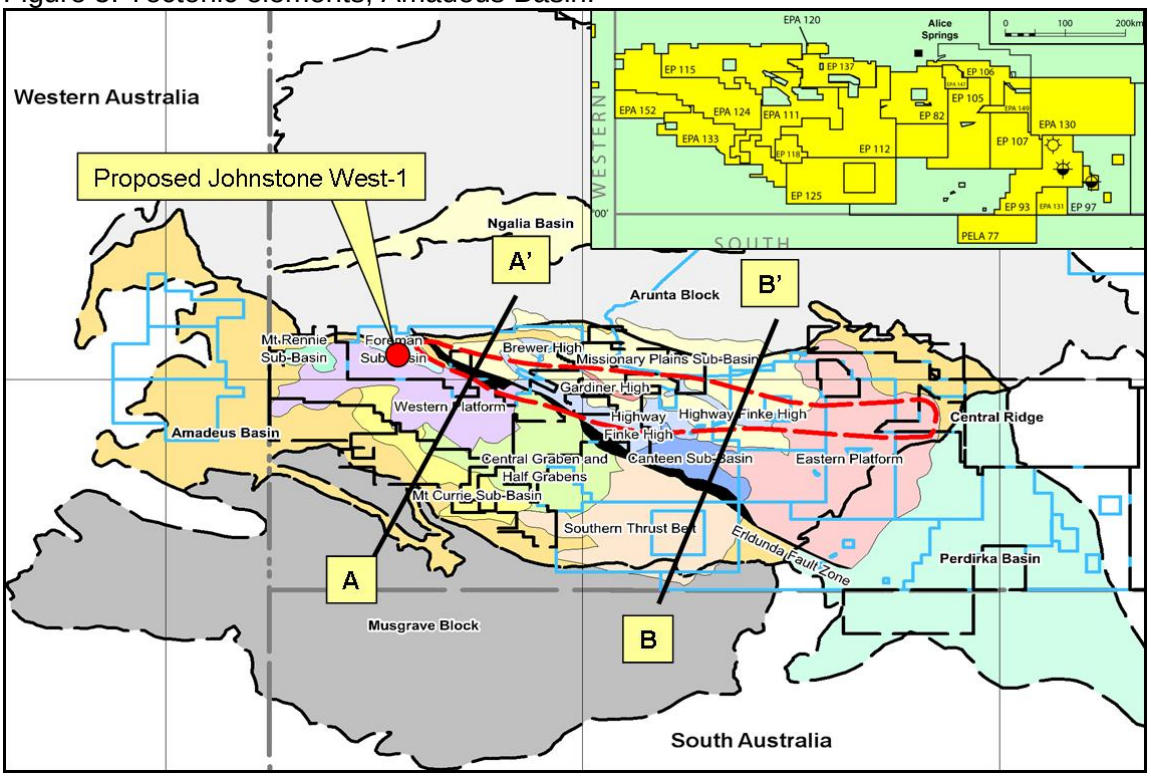
5.1 Regional Geological Setting

5.1.1 Structural Elements

The Amadeus Basin is at the heart of a series of intra-cratonic basins on the Australian continent that share their origins in the breakup of the supercontinent Rodinia. Strong stratigraphic ties have been made between the Officer, Ngalia and Georgina Basins, leading to them being referred to collectively as the Centralian Superbasin. The Amadeus Basin is a broad intra-cratonic structure in the north-westerly trending Amadeus Transverse Zone and is the product of a number of tectonic cycles. The basin was formed by a series of tectonic events incorporating a variety of mechanisms.

The Amadeus Basin is a multiphase rift-foreland basin with thrusting occurring in the Late Neoproterozoic and Devonian-Carboniferous eras. The basin hosts thick sequences of Proterozoic to Carboniferous sediments. The tectonic elements of the Amadeus Basin in the Neoproterozoic are shown in Figure 5.

Figure 5: Tectonic elements, Amadeus Basin.



5.2 Lithology and Formation Tops

The following table shows Formation top depths and thickness and comparison to predicted depths.

Table 5: Johnstone West-1 Formation tops, actual and predicted

Formation Top	Depth KB (m)	Depth GL(m)	Isopach (m)	Sub-sea (m)	prognosis		
					TVDSS m	TVDKB m	Hi/lo m
Brewer/Hermannsburg	5.2	0	945.5	531.3	531.3	0	-
Parkes Siltstone	945.5	940.3	48.5	-408.8	50	487	458.8L

Formation Top	Depth KB (m)	Depth GL(m)	Isopach (m)	Sub-sea (m)	prognosis		
					TVDSS m	TVDKB m	Hi/lo m
Mereenie Sandstone	994	988.8	319.5	-457.5	-230	767	227.5L
Stokes Siltstone	1313.5	1308.3	73.5	-781.5	-495	1032	281L
Upr Stairway Sandstone	1387	1381.8	28	-850.5	-525	1062	325.5L
Mid Stairway Sandstone	1415	1409.8	55	-878.5			
Lwr Stairway Sandstone	1470	1464.8	15	-933.5			
Horn Valley Siltstone	1485	1479.8	38.8	-948.5	-595	1157	353.5L
Pacoota Sandstone	1523.8	1518.6	114.2	-987.3	-680	1217	307.3L
Goyder Formation	1638	1632.8	43+	-1101.5	-780	1317	321.5L
Total Depth	1666	1661.8		-1130.5			

Elevations: GL 531.3m ASL KB 5.2m AGL

5.2.1 Undifferentiated Quaternary/Brewer/Hermannsburg Formation (5.2-945.5m)

5.2-130m

This section comprised Aeolian alluvium down to 70m. This is essentially the Quaternary to Recent dune deposits seen at surface, comprising white to light grey quartz grains stained yellow-orange and commonly reworked grey brown siltstone grains. The grains are fine to coarse and rounded, subspherical and frosted. There are abundant composite grains of quartz sand and siltstone grains weakly bound with yellow-orange iron oxide cement. Many grains are irregular, broken indicating it is possibly pebbly. Gypsum appeared in the form of white to off white, chalky, soft material. It is occasionally micro to coarsely crystalline and abundant in parts, suggesting it is probably distributed as nodular clumps.

130-480m

Bedrock was encountered around 130m comprising sandstone down to 175m. The sandstone is weathered at the top of the interval and becomes fresher with depth. It is yellow stained brown and green grey, becoming medium brown grey, friable to hard and generally blocky, very fine to medium grained, occasionally coarse, subangular to subrounded and poorly sorted. It is commonly argillaceous and silty, grading to brown micaceous siltstone. Below 175m, the sequence comprises interbedded sandstone and siltstone to approximately 480m. The sandstone is white to light grey and clear to translucent, becoming yellow brown where argillaceous, generally friable to hard, occasionally loose and granular, very fine to medium grained, subangular to subrounded, moderately well sorted. It is commonly argillaceous and silty and intergradational with siltstone where micaceous. It has poor to fair visible porosity. The siltstone is medium yellowish brown, brownish grey, hard, blocky to subfissile, argillaceous, very micaceous in part with traces of carbonaceous matter and clear crystalline gypsum.

480-755m

This interval is almost entirely siltstone. It comprises medium grey to medium grey brown, red brown, hard, blocky to subfissile, argillaceous, sandy in parts,- comprises abundant rounded fine to medium grained, occasionally coarse quartz and lithic grains in a argillaceous/silty matrix. This grades to sandstone around 590-630m.

755-945.5m

The base of the Hermannsburg Sandstone becomes sandy. Although predominantly siltstone, numerous sandstone interbeds occur. The sandstone is white to light grey and medium grey to brown in parts. It is hard very fine to fine grained and occasionally medium, subangular to subrounded, moderately sorted with siliceous cement, slightly calcareous, with traces of kaolin and other argillaceous matrix, silty with

traces of carbonaceous specks. Porosity is very poor in general. The siltstone is medium brown and grey brown, hard, blocky to subfissile, slightly dolomitic, sandy and in parts grades to very fine sandstone.

5.2.2 Parkes Siltstone Mid Devonian

945.5-994m
The Parkes Siltstone comprises similar siltstone and sandstone interbeds to the overlying Hermannsburg sequences. These sequences are similar lithologically and represent fluvial, and alluvial rapidly deposited molasse sediments typical of the mountain building period known as the Pertnjara movement. They have typical greywacke textures. The siltstone is medium grey brown and olive brown, hard, blocky to subfisile, argillaceous, siliceous, and micaceous with a trace of carbonaceous specks. The sandstone is gradational with the siltstone, light greenish grey, hard, blocky, very fine to occasionally medium grained, subangular to subrounded, generally poorly sorted, silty, slightly calcareous, very siliceous, trace carbonaceous specks with poor visible porosity.

5.2.3 Mereenie Sandstone Early Devonian

994-1313.5m
An abrupt change to Aeolian sandstone occurs at 994m. The sandstone is clear to translucent white, light grey. It becomes orange brown and reddish orange with depth over the interval. It is loose to friable, fine to coarse grained, predominantly medium, subangular to well rounded, frosted, poor to moderately well sorted, common bimodal grain size, common silica cement, trace kaolin, fair to good inferred porosity. Some minor inundations are represented in the sequence by the presence of siltstone and claystone beds and some gypsum occurrences indicate possible playa lake occurrences over the interval 1025-1040m and 1055-1080m. The siltstone is red brown to medium brown, hard, blocky, argillaceous and micromicaceous. The Claystone is steel grey, hard, blocky and micromicaceous. Gypsum generally appears as white, soft, chalky material. Air drilling was attempted from 1040-1060m, however excessive water was produced and the drilling reverted to a mud system.

5.2.4 Stokes Siltstone Late Ordovician

1313.5-1387m
The Stokes Siltstone comprises siltstone and claystone interbeds. Thin carbonate intervals prevail in the lower part of the sequence. This is considered a restricted marine sequence. A core was cut in this unit from 1327-1336m on the mistaken assumption that the formation was Horn Valley Siltstone.. The siltstone is medium red brown with grey green and occasionally buff mottling. It is hard, blocky to subfissile very argillaceous, micaceous and often interlaminated with claystone. Slickenslided surfaces were also observed. The claystone is medium greenish grey, hard, subfissile, micromicaceous, commonly with subhorizontal slickensiding.

Below 1370m, carbonate units appear in the form of limestone and dolomite. The limestone is white to light grey, and greenish grey, soft to hard, cryptocrystalline, dolomitic with poor visible porosity. The dolomite is light grey, firm, blocky and silty and also of poor porosity.

5.2.5 Upper Stairway Sandstone Early Ordovician

1387-1415m
The upper Stairway sandstone is predominantly sandstone with interbeds of siltstone, claystone and dolomite.

The sandstone is white to light grey green, in parts light grey brown to dark grey, brittle and hard, very fine to fine, occasionally medium grained, subangular to rounded, moderately sorted, slightly calcareous,

siliceous with common intergranular brown to black staining (residual oil?). Visible porosity was poor. Poor to fair oil shows were observed throughout the section. Fluorescence was moderately bright yellow with an instant blooming bright white fluorescent cut and a bright thick white ring.

An unusual occurrence of a granite like lithology appeared in the 1390-1393m sample. The description was …white to pink, with dark brown to black mottling, hard, fine to coarse angular grains, common pink feldspar grains. The rock had a interlocking crystalline matrix and appeared granitic. It may possibly represent an igneous erratic boulder or glacial erratic within the sandstones.

The siltstones are light to medium grey, occasionally brown, hard, blocky, argillaceous, very siliceous, and micromicaceous. Claystone is light grey to light green, hard, subfissile, micromicaceous. The dolomite is light grey to grey brown, hard, blocky, argillaceous, microcrystalline with no visible porosity.

5.2.6 Middle Stairway Shale Lower Ordovician (Llanvirnian)

1415-1470m
This section comprises claystone with minor sandstone siltstone and dolomite. Hydrocarbon shows diminished significantly over this interval.

The upper 20m of this section is depicted on the mudlog as mostly cement contamination, however, this was logged from the sidetracked hole after the coring tool became stuck in the hole at 1476m. The tool was eventually left in the hole and the hole then plugged back to 1415m where the sidetrack was kicked off.

The original hole was logged over the top 20m as dolomite and sandstone. The dolomite is light grey brown to dark grey green, friable to hard, blocky, fossiliferous and ooidal with traces of pyrite. The sandstone is white to light grey and dark grey in parts, hard, laminated in parts, very fine to medium, predominantly fine, subangular to subrounded, moderately sorted, argillaceous, with traces of fine glauconite pellets, traces of dark lithic grains, trace of carbonaceous matter and traces of feldspar degrading to kaolin. Porosity is poor. Fluorescence was negligible, although a weak white fluorescent cut persisted.

Claystone predominated in the basal 30m of the interval. It is predominantly brick red, hard, subfissile, slightly calcareous, slightly dolomitic, micaceous, with common blebs of light grey green bioturbation (worm burrows). It is also silty in parts. Siltstone is light to medium grey, red brown where grading to claystone, hard, blocky, argillaceous, occasionally pyritic.

5.2.7 Lower Stairway Sandstone Lower Ordovician (Llanvirnian)

1470-1485m
This is a moderately clean sandstone sequence with fair to good porosity in parts. Good oil shows were observed in the drill cuttings although later logging indicated the zone had no moveable hydrocarbons and was at best a transition zone where water was the only moveable fluid.

The sandstone is white with clear to translucent quartz grains. It is light to dark grey in parts and bronze where pyritic cement dominates. It is friable to hard, very fine to coarse grained, predominantly medium, subrounded to rounded, poorly to moderately well sorted. It is slightly kaolinitic and silica cemented with quartz overgrowths. Pyrite is commonly present as microcrystalline disseminations and coarsely crystalline cement in the upper band. Fluorescence is 90-100% solid bright gold with immediate slow to fast blooming and streaming bright white fluorescent cut and light brown while light cut and residue. A very strong bright yellow white ring is observed. All samples also had very strong petroliferous odour and free black oil droplets were observed on the mud during circulation.

A core was attempted at 1475m; however, the core barrel appeared to jam at 1476m and became stuck in the hole. After several fishing attempts, the well was plugged back and a sidetrack was kicked off at 1415m. This formation was re-intersected in the sidetracked hole with similar results.

5.2.8 Horn Valley Siltstone Lower Ordovician (Arenigian)

1485-1523.8m
The Horn Valley siltstone was also a target in this well in order to obtain source rock geochemical data and to help ascertain its potential as a shale gas/oil reservoir in the region. It is a claystone unit with marl, and limestone interbeds.

The claystone is medium to dark grey, hard, silty and carbonaceous in parts. The Marl is medium to dark grey, soft to hard, subfissile to blocky, silty in part and carbonaceous. It is described as having a subconchoidal fracture which may be attributable to its carbonaceous content, The limestone is predominantly light grey, white and grey-green, with pervasive black to green glauconite specks (subangular to subrounded), moderately hard, blocky, calcisiltitic in parts, poor visible porosity.

High background and peak gas was recorded whilst drilling The Horn Valley Siltstone.

5.2.9 Pacoota Sandstone Late Cambrian to Early Ordovician

1523.8-1638m
The Pacoota Sandstone did not indicate any hydrocarbons in Johnstone West-1. It is a major reservoir in the nearby Mereenie and Palm Valley oil and gas fields and was the primary objective in Johnstone West-1.

This is a predominantly sandstone unit with minor claystone over the interval 1585-1610m.

The sandstone at the top of the unit is white to light grey with clear to translucent quartz grains, friable to hard, very fine to coarse, subangular to rounded and poorly sorted. It is arkosic, with abundant kaolin from weathered feldspar, silica cement, disseminated pyrite and generally poor visible porosity. With depth the unit becomes finer grained, ranging from very fine to medium, predominantly medium grained. It is generally arkosic with traces of glauconite indicating a marine depositional environment. The claystone is light to medium grey and brown grey and white where kaolinitc and soft.

5.2.10 Goyder Formation Late Cambrian

1638-1666m (TD)
The Goyder Formation is a argillaceous sequence comprising claystone and interbedded siltstone with minor sandstone interbeds.

The claystone is light to medium grey, brownish grey and soft. The siltstone is medium dark grey, hard, brittle, micaceous, very sandy in parts, trace dolomitic cement. The sandstone is light grey to medium and dark grey, loose very fine to medium pale orange very fine to medium quartz grains, subangular to subrounded, poor to moderately well sorted, siliceous cement in parts, silty in parts, micaceous in laminae, slightly calcareous, trace argillaceous, trace dolomite, trace glauconite and poor visible porosity. There were no shows recorded in the Goyder Formation.

The well reached TD in this formation at 1666mKB.

5.3 Hydrocarbon Indications

5.3.1 Gas while drilling

Gas was monitored constantly while drilling either from the blooie line when air drilling or the shale shaker ditch whilst conventionally drilling with mud. Problems with the reported gas readings were noted through the well and were associated with insufficient gas trap agitator speed and incorrect gas calibration of the detectors.

Increased gas accompanied the observed oil shows from 1470-1485m in the Lower Stairway sandstone. Total gas peaked at 159units at 1479m and contained up to C5, background gas over the interval was 50-100 units.

Increased gas was also recorded over the Horn Valley Siltstone interval from 1485-1524m with several peaks over 200units of gas and the maximum of 523units at 1512m. The gas was composed of predominantly methane with components up to C5+.

Background gas decreased to generally less than 20 units below the Horn Valley Siltstone Formation and no fluorescent shows were noted.

5.3.2 Hydrocarbon fluorescent and oil shows

Generally patchy, poor fluorescent oil shows were encountered in the Stairway Sandstone Formation from 1387m-1409m. The sandstone appeared tight at this level and trace to 40% fluorescence was observed as dull to moderately bright yellow green fluorescence, nil to instant blooming/streaming cut, nil to instant crush cut, weak diffuse to occasionally thick moderately bright white residual ring. A further occurrence of fluorescent oil shows were observed over the interval 1430-1445m in the Middle Stairway Sandstone which is a sequence of thinly bedded sands silts and shales A general increase in background gas with traces up to C5 were recorded although the gas detector was suspected to be faulty. There was no observed fluorescence in the original hole and traces of dull yellow orange fluorescence were noted over the same interval in the sidetracked hole. A slow dull yellow white blooming cut with slow dull yellow white milky blooming crush cut and a thick yellow green ring was also recorded in the sandstones. The Mid Stairway shows are rated as very poor and no hydrocarbon saturation was deemed present from the logs.

The Lower Stairway Sands were intersected from 1470-1485m in the original and sidetracked hole and showed good to excellent hydrocarbon fluorescence in sandstones of moderately good porosity. Hydrocarbon (oil) odour was noted and oil staining and free dark brown and black oil was observed on the mud returns. The fluorescence was, 90% bright gold solid with instant streaming blooming blue white cut, strong bright white thick residual ring which was light brown in white light. This was also accompanied by an increase in gas.

5.3.3 Geochemistry

Samples from the interval1484-1508m were submitted for ToC analysis and solvent extracts were performed on cuttings samples from the interval 1423-1475m.

Geochemical results are included as Appendix 4.

6.0 References

Do Razario, R.F., The Palm Valley Gas Field, Amadeus Basin, Central Australia.