# DAILY GEOLOGICAL REPORT

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|---|---|---|---|---|---|---|---|
| **WELL:** | Shenandoah #1 | **REPORT No.:** | 40 | **DAYS FROM SPUD:** | 40 | **DATE:** | 09/09/07 |
| **PEL:** | EP 98 | **00:00 DEPTH:** | 1545mKB | **LAST 24hr DEPTH:** | 1466mKB | **24 hr Progress:** | 79m |
| **LOCATION:** | Beetaloo Basin | **RIG:** | Century Rig 7 | **KB:** (Final Survey) | 232.55m | **13 $^{3}/_{8}$" Csg:** | 312m |
| **GEOLOGIST:** | J Hulse | | | **GL:** (Final Survey) | 226.75m | **PTD:** | 2,900m |

**NEARBY WELLS:** Balmain #1 (Twin)

**06:00 Depth/Operation:** **1555mKB /** Clean and condition hole ready to displace to mud.
**Operations 00:00 to 06:00:** Drill ahead to 12 ¼" hole TD at 1555mKB. Short Wiper trip to last bit mark.
**Previous 24 Hours Operations:** Ream to bottom, Drill ahead 12 ¼" hole from 06:00hours.

| Formation Tops | Actual Depths (m) | | | Prognosed Depths (m) | | | Diff to Prog. | Thickness |
|---|---|---|---|---|---|---|---|---|
| | MDKB | TVD | TVDSS | MDKB | TVD | TVDSS | H/L | (m) |
| Undifferentiated Tertiary | 5.8 | 5.8 | +227 | 5.8 | 5.8 | +227 | - | 45.7 |
| Jinduckin Formation | 51.5 | 51.5 | +181.3 | 54.8 | 54.8 | +178 | 3.3H | 32.7 |
| Tindall Limestone | 84.2 | 84.2 | +148.6 | 83.8 | 83.8 | +149 | 0.4L | 178.8 |
| Antrim Volcanics | 263.0 | 263.0 | -30.5 | 265.3 | 265.3 | -32.5 | 2.0H | 85.0 |
| Bukalara Sandstone | 348.0 | 348.0 | -115.5 | 348.3 | 348.3 | -115.5 | 0.0 | 58.0 |
| Hayfield Mudstone | 406.0 | 406.0 | -173.5 | 406.3 | 406.3 | -173.5 | 0.0 | 375.9 |
| Hayfield Sand | 782.5 | 782.3 | -549.7 | 782.2 | 782.2 | -549.4 | 0.3L | (10.5) |
| Jamison Sandstone | 855.0 | 854.8 | -622.2 | 856.3 | 856.3 | -623.5 | 1.3H | 85.0 |
| Kyalla Formation | 940.0 | 939.8 | -707.2 | 940.8 | 940.8 | -708.0 | 0.8H | |
| Moroak Sandstone | | | | 1551.8 | 1551.8 | -1319 | | |
| Velkerri Formation | | | | 1641.8 | 1641.8 | -1409 | | |
| Bessie Creek Sandstone | | | | 2481.8 | 2481.8 | -2249 | | |
| Total Depth | | | | 2900.0 | 2900.0 | -2667.2 | | |

**Remarks:**

| **Interval (m) ROP (min/m)** | **Lithology Description** | **Gas/B'ground Breakdown C1/C2/C3/C4/C5** |
|---|---|---|
| **Formation: Kyalla Shale / Sandstone** | | |
| 1466-1471mKB (18-56min/m) | **Mudstone (95-100%):** Pale grey green – light grey – dark grey brown, common – abundant micromicaceous, sub blocky, firm – moderately hard, massive – weakly laminar, minor sub fissile, trace pyrite, grading to siltstone and arenaceous siltstone in part.<br>**Sandstone (Trace – 5%):** Light yellow brown – light grey, very fine, siliceous, grading to siltstone, trace medium bit fractured clear quartz, nil visible porosity, no shows. | 1467mKB<br>Tg 6 units<br>Bkg < 1 unit<br>87/7/3/1/2 |
| **Fluorescence** | Nil | |
| **Gas Flaring** | Nil | |
| 1471-1491mKB (10-20min/m) | **Mudstone (60-90%):** Pale grey green, minor reddish brown, firm, uniform, massive, minor micromicaceous, trace carbonaceous laminae. Dark brown grey, hard – very hard, micromicaceous, weakly laminar, minor – common carbonaceous fragments and laminae, sub fissile – trace fissile.<br>**Sandstone (5-40%):** Light translucent grey – white, fine – coarse, predominantly medium, minor very coarse well rounded quartz, poorly consolidated – loose, quartzose, common siliceous cement, common - abundant bit fracture, trace pyrite, trace glauconite?, trace pale yellow – orange quartz, nil – poor visible porosity, nil – fair inferred porosity. | 1474.5mKB<br>Tg 12.9 units<br>Bkg 1 unit<br>75/16/6/2/1 |
| **Fluorescence** | 1482-1485mKB Trace dull yellow fluorescence, no cut | |
| **Gas Flaring** | Nil | |

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|---|---|---|
| 1491-1521mKB (8min/m) | **Mudstone (95-100%):** Pale green, soft – firm, minor micromicaceous, rare micaceous layers. Medium – dark brown, common – abundant carbonaceous fragments, hard, micromicaceous, rare black coaly silt; carbonaceous, abundant vitreous carbonaceous fragments.<br>**Sandstone (0-5%):** White – light grey, fine – coarse, predominantly medium, becoming fine – very fine at base of interval, sub angular - sub round, moderately sorted, abundant siliceous cement, moderately well consolidated, rare loose quartz, nil visible porosity and no shows. | 1503mKB<br>Tg 9.2 units<br>Bkg 3 units<br>77/14/5/2/1 |
| **Fluorescence** | Nil | |
| **Gas Flaring** | Nil | |
| 1521-1555mKB (12min/m) | **Mudstone (80-100%):** Predominantly pale green, soft – firm, sub blocky, massive, minor micromicaceous, minor micaceous layers. Common medium grey brown – dark brown, hard, sub blocky – sub platy, micromicaceous, common – abundant carbonaceous fragments and laminae.<br>**Siltstone (5-20%):** (1) Medium brown, micaceous, sub blocky, moderately hard, common arenaceous, siliceous in part, minor carbonaceous fragments. (2) Dark brown – black, carbonaceous, micaceous, blocky – sub blocky, minor light brown fossil fragments.<br>**Sandstone (Trace – 3%):** Dark – medium grey – light grey, very fine – medium, moderately sorted, siliceous cement, minor calcareous cement, trace argillaceous matrix, trace pyrite, minor - common carbonaceous specks, minor mica, friable – moderately well consolidated, nil – poor visible porosity, no shows.. | 1531.5mKB<br>Tg 11 units<br>Bkg 3 units<br>89/6/3/2/1 |
| **Fluorescence** | Nil | |
| **Gas Flaring** | Nil | |