ENCLOSURES
ENCLOSURE A:

1:200 SHENANDOAH-1A COMPOSITE LOG
**FALCON OIL AND GAS (AUSTRALIA) PTY LTD**
**SHENANDOAH-1A INTERIM COMPOSITE LOG**

**INTERPRETATION BY L.E.L. BURGESS  WESTMINSTER GEOLOGICAL PTY LTD**

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**SHENANDOAH-1A**

<table>
<thead>
<tr>
<th>COMPANY FIELD</th>
<th>FALCON (AUSTRALIA) OIL &amp; GAS P/L BEETALOO BASIN</th>
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</thead>
<tbody>
<tr>
<td>COUNTRY STATE</td>
<td>AUSTRALIA Northern Territory/EP98</td>
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<tr>
<td>RIG</td>
<td>ADS RIG-6</td>
</tr>
<tr>
<td>TD</td>
<td>2714 Mtr MD/RT</td>
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</tbody>
</table>

**RT ELEV** 231.0 Mtr AHD Datum

**GL ELEV** 226.8 Mtr AHD Datum

**LATITUDE** 16 37' 22.160" S

**LONGITUDE** 133 34' 38.220" E

**UTM Y** 8161624

**UTM X** 348248

**SPUD DATE** 23/8/2009

**RIG RELEASED** 19/10/2009

**SEISMIC LOCATION:** 200m southwest of SP 1725

**Line MC92-100**

**Geog. co-ords:** GDA 94,GRS80 Ellipsoid

**Grid co-ords:** MGA 94, Zone 53k

**WELL STATUS:** SUSPENDED PENDING RE-ENTRY AND DEEPENING.

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**SANDSTONE**

**SILTY SANDSTONE**

**SILTSTONE/CLAYSTONE/SHALE**

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**Oil Shows**

- **Good**
- **Fair**
- **Poor**
- **Trace**

**Gas Shows**

- **Good**
- **Poor**
- **Trace**

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**SCALE 1:200 Meters MD/RT**

- **Sonic uSft**
- **Density gm/cc3**
- **Density Correction gm/cc3**
- **CNL**
- **Lst (p.u.)**
- **Photoelectric c.u.**
- **Gas Composition**
- **Flashed Zone Resistivity ohm-M**

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**HALS Laterolog Deep ohm-M**

**HALS Laterolog Shallow ohm-M**

**Flushed Zone Resistivity ohm-M**

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**Core Lithology**

Possible Pay

DST Text

Log Interp

Descriptions

Formation Tops

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**Rate of Penetration mtr/hr**

0

**Gamma Ray Average apl**

0 200

**Bit Size inch**

6 16

**Density Caliper inch**

6 16

**Resistivity Caliper inch**

6 16

**Spontaneous Potential mV**

0 300 1550 1320

**Total Gas units**

0 500

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**Date:** 29/1/2010

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**GS SOFTWARE**

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**244mm (9.625) CASING**
SET @ 1553m (SHENANDOAH-1)

NB1RR Hughes GT1 Jets:
3x16 in: 1553 mMDRT Out: 1565 mMDRT Drilled 12 m in 6.0 hrs Grade:
1-1-WT-A-E-I-NO-BHA

FIT @ 1560m: 1300 psi with 8.4ppg mud. EMW = 10.9ppg

DRILLED WITH KCL/POLYMER MUD FROM 1555m

NB2 Hughes MXL18DX Jets: 2x14, 1x10 in: 1565 mMDRT Out: 1565 mMDRT Drilled 20 m in 4.2 hrs Grade:
1-1-WT-A-E-I-NO-CP


MW: 8.4ppg FV: 34 PV: 5 YP: 5 Gels: 1/1 KCl: 5%

1555 - 1574 SHALE WITH MINOR INTERBEDDED SILTSTONE SHALE:
(90%) black, very dark grey, vitreous in parts, flakey to granular carbonaceous texture, common very fine quartz to arenaceous siltstone, local microlaminae, fission to subfissile, brittle. SILTSTONE: (10%) dark grey/black, finely arenaceous grading to silty sandstone, argillaceous matrix, slightly carbonaceous, very fine translucent brown quartz grains, microlaminae, strong siliceous cement, hard to occasionally firm.

1574 - 1583 INTERBEDDED SANDSTONE AND SHALE WITH INTERGRADATIONAL SILTY SANDSTONE AND SILTSTONE SANDSTONE: (40 - 30%) clear to pale translucent brown quartz, very fine to fine, angular, poorly sorted, generally strong siliceous cement, common silicified aggregates with occluded relic silty matrix, trace kaolinitic matrix (7), disaggregated in parts, hard, no visual porosity, no fluorescence. SHALE: (30 - 20%) black, very dark grey, vitreous in parts, flake to granular texture, common very fine quartz microlaminae, fission to subfissile, brittle. SILTSTONE: (20%) dark brown-grey, arenaceous grading to very fine sandstone, common very fine rounded -angular quartz, common argillaceous matrix, slightly carbonaceous, firm to occasionally moderately friable. SILTY SANDSTONE: (20%) patchy pale grey/brown -grey, very fine silt sized quartz grains, argillaceous, carbonaceous and minor kaolinitic (7) matrix, firm to slightly friable, tough.
1593.5 - 1595.5 m THINLY INTERBEDDED CARBONACEOUS SHALE, SILTSTONE, SILTY SANDSTONE AND SANDSTONE—CARBONACEOUS SHALE: (60 -40%) black, very dark grey, sub vitreous in parts on carbonaceous bedding surfaces, micro granular texture in parts, silty grading to carbonaceous siltstone, occasional very fine angular quartz grains, laminated, platy cuttings, fissile, brittle. SILTSTONE: (20%) black/dark grey, minor brown grey, arenaceous to argillaceous, carbonaceous in parts, local fine quartz grains, firm to friable. SILTY SANDSTONE: (10%) finely laminated light-dark grey, black in parts, very fine to silt sized quartz grains, moderately well sorted, angular, weak to moderately strong siliceous cement, common argillaceous to silty matrix, trace mica, firm to friable, tight visual porosity, no fluorescence.

SANDSTONE: (10-30%) clear, translucent brown quartz grains in parts, very fine to fine, trace medium, angular, poorly sorted, common silica overgrowths and silicified aggregates, trace relict matrix, common shards and slivers of very had aggregates showing sheared quartz grains, clean to silty in parts, hard, no visual porosity, no fluorescence.

1570.0 - 1670.0 m POT. GAS PAY 88m AV. POR 7.5% AV. SW 46.0%
RIG POWER FAILURE. GAS DATA LOST FROM 1636-1647m. DRILL DATA AVERAGED FROM 1640.5-1647m

1616-1640 SHALE WITH INTERVENING THIN SILTSTONE, SILTY SANDSTONE AND MINOR SANDSTONE. SHALE (50-60%): dark grey/black, very carbonaceous in parts - common vitreous to sub vitreous carbonaceous flakes and patches, silty laminae and lenses in parts, trace very fine sandstone, local mica, fissile.

SILTSTONE (10-20%): black/dark grey, minor brown grey, arenaceous to argillaceous, carbonaceous in parts, local fine quartz grains, firm to friable. SILTY SANDSTONE (10%): finely laminated light grey, black in parts, very fine to silt sized quartz grains, moderately well sorted, angular, weak to moderately strong siliceous cement, common argillaceous to silty matrix, trace mica, firm to friable, tight visual porosity, no fluorescence. SANDSTONE (10-20%): black/dark grey/brown, very fine, angular, moderately well sorted, strong siliceous cement, local carbonaceous and mica inclusions, hard, no visual porosity, no fluorescence.

1640-1694 SHALE WITH MINOR INTERGRADATIONAL SILTSTONE_SILTY SHALE (90-100%): dark grey/black, very carbonaceous in parts - common vitreous to sub vitreous carbonaceous flakes and patches, silty laminae and lenses in parts, trace very fine sandstone, local mica, fissile.

SILTSTONE (1%): dark grey grey/brown grey black, common silt sized quartz grains, occasional subrounded to subangular very fine quartz, common argillaceous matrix, common vitreous to sub vitreous carbonaceous flakes, local brown and clear mica, brittle to moderately friable.
1694-1723 DOMINANTLY SANDSTONE WITH INTERBEDDED SILTY SANDSTONE AND SUBORDINATE SILTSTONE AND SHALE. SANDSTONE (40%): clear to translucent, minor grey-brown quartz, very fine to fine, trace medium, subrounded-angular (common broken grains), strong to moderately strong siliceous cement, clay to occasionally silt aggregates, carbonaceous in parts, moderately friable to very hard, poor to no visual porosity, no fluorescence. SILTY SANDSTONE (20-30%): translucent to dark brown-grey quartz, fine to very fine, common silt sized quartz grains, silty and carbonaceous matrix, common mica, finely laminated in parts, hard to friable, occasionally brittle, tight porosity. SILTSTONE (10%): dark grey brown/black, arenaceous grading to silty sandstone, common very fine quartz grains, local argillaceous matrix, vitreous to sub vitreous carbonaceous plates and laminae, micaceous in parts, subfissile to firm. SHALE (20%): very dark grey/black, occasional vitreous carbonaceous flakes, common white and brown mica flakes, laminae in parts with arenaceous silt grading to very fine sandstone, platy to tabular cuttings, subfissile to fissile, firm to brittle.

Moroak Sst (1717.0 mMD-RT, -1485.3 mTVD-SS)  
True Thickness = 482.9 m
1723-1742 MASSIVE SANDSTONE WITH TRACE RED BEDS. SANDSTONE (99-100%): clear to translucent, trace rose pink and pale orange quartz grains, very fine to coarse grains - generally fine to medium, angular to subrounded, occasional shards of shattered siliceous aggregates, clean to minor carbonaceous and silty matrix (generally silicified), abundant disaggregated grains and broken aggregates, very poor to tight inferred porosity. Mineral fluorescence only from 1721-1724m (<10% dull to moderately bright orange - yellow, even to spotted, no direct cut, no crush cut, no residue, no odours, does not effervesce in HCl).

SANDSTONE (trace): moderate red, very fine to fine, angular, silicified welded grains, abundant iron oxide matrix and grain staining, hard, no visual porosity, no fluorescence.

SILTSTONE (trace): moderate red, finely arenaceous, iron stained, plaiy splinterly cuttings, subfissile in parts, firm and brittle.

1742-1775 MASSIVE SANDSTONE: clear to subordinate opaque white, trace pink quartz, very fine to coarse - generally fine to medium, rounded to angular, occasional pitted/frosted surfaces, common silicified aggregates and quartzitic shards, strong siliceous cement, generally clean aggregates with minor silt matrix, hard to moderately friable, no visual porosity, no fluorescence.

NB3 Hughes MXS44 Bit Jets: 2 x 14, 1 x 10 In: 1745 mMDRT Out: 1806 mMDRT Drilled 61 m in 15.3 hrs Grade: 6.7 W T A E OT 2-TW

1717.0 - 1802.0 m POT.
GAS PAY 68m AV. POR 7.3% AV. SW 51.0%


MW: 8.9 ppg FV: 34 PV: 9
YP: 13 Gels: 3/4 KCl: 4.6%
1775-1787 SANDSTONE WITH MINOR INTERBEDDED SILTY SANDSTONE AND SILTSTONE: as above with 20%+ moderate red brown to pale red brown stained quartz grains, hard to moderately friable aggregates, no visual porosity, no fluorescence. SILTY SANDSTONE: trace, pale grey aggregates interbedded with fine grained red brown sandstone, very fine to fine, frosted quartz, common black shale clasts, common clay/siltstone matrix, weak to moderately strong siliceous cement, micaceous, micro carbonaceous in parts, moderately friable, poor inferred porosity, no visual porosity, no fluorescence. SILTSTONE: trace as above, carbonaceous in parts, common biotite micaceous, sub blocky - subfissile.

1787-1817 MASSIVE SANDSTONE: clear to subordinate opaque white, trace to 50% maximum red brown, medium to dark greyish red stained quartz, very fine to medium, trace coarse – generally fine, rounded to angular, occasional pitted/frosted surfaces, local silicified aggregates and quartzitic shards, strong siliceous and occasional haematitic cement, generally clean aggregates with minor silt matrix, hard to moderately friable, no visual porosity, no fluorescence. SILTY SANDSTONE: trace as above. SILTSTONE: trace arenaceous as above.
1817 - 1841 SANDSTONE: clear to translucent, occasional opaque white quartz, 5 -10% red brown - greyish red stained quartz, very fine to very coarse - generally fine and medium, angular (common broken grains) to subrounded, poorly sorted, mainly strong siliceous cement, abundant fractured grains and quartzite shards (strongly cemented aggregate fragments). 80% disaggregated, moderately hard, very poor inferred porosity, tight visual porosity, no fluorescence. QUARTZITE: (trace) white, very pale yellow, microcrystalline to very fine quartz grains, welded in parts with crystalline texture, hard, fractured, tight porosity. METASILSTONE: (trace) pale yellow, sucroic texture, sub-phylilitic, relic laminae, micaceous, splintery, brittle.

1841 - 1859 SANDSTONE WITH MINOR INTERBEDS AND LAMINAE OF SILTSTONE AND SILTY SANDSTONE: _SANDSTONE: as above predominantly very fine to fine, occasional medium and coarse, poorly sorted, strong siliceous cement, tight inferred porosity no fluorescence. SILTSTONE: dark
1850-1868 SANDSTONE: translucent, white, clear, minor pale red brown and pale yellow quartz, very fine to coarse, generally fine to medium, sub-angular to sub-rounded, occasionally well rounded, moderately well sorted aggregates in parts, strong siliceous cement, hard aggregates (commonly sheared and 'sectioned'), predominantly clean to minor carbonaceous and silty matrix, carbonaceous laminae in parts (possibly bituminal), moderately hard to very hard, tight visual and inferred porosity, no fluorescence.

1868 - 1904 SANDSTONE WITH MINOR INTERBEDS AND LAMINA OF CLAYSTONE _ SANDSTONE: generally as above, white to very light grey, rarely greyish pink, clear to occasionally translucent quartz grains, very fine to coarse, rare very coarse grains, very fine to fine in part, poorly to moderately well sorted, angular with rare to common well rounded grains often showing druzy surfaces, abundant quartz overgrowths with common sutured grain boundaries, siliceous cement, rare pyrite cement and pore fill, siliceous matrix in part, occasional to common micaceous and argillaceous laminae, occasional bituminous pore fill (gilsonite), moderately hard to hard, very poor to poor visual and inferred porosity, no fluorescence. CLAYSTONE: very dark grey to very dark brownish grey, rarely greyish pink, occasional to abundant fine to very coarse mica flakes, slightly silt in part, moderately hard, sub-fissile to fissile.
1904 – 1916 SANDSTONE WITH MINOR THIN INTERBEDS AND LAMINAE OF CLAYSTONE. SANDSTONE: generally as above, white to very light grey, rarely greyish pink, clear to occasionally translucent quartz grains, very fine to fine, rare to occasional medium to very coarse grains, poorly to moderately well sorted, angular abundant quartz overgrowths with common sutured grain boundaries, common transverse grain fractures, siliceous cement, rare pyrite cement and pore fill, siliceous matrix in part, occasional to common micaceous and argillaceous laminae, rare to occasional glauconite grains, rare bituminous pore fill (gilsonite), moderately hard to hard, very poor to poor visual and inferred porosity, no fluorescence. CLAYSTONE: very dark grey to very dark brownish grey, rarely greyish pink, occasional to abundant fine to very coarse mica flakes, slightly to moderately silty in part, moderately hard, sub-fissile to fissile.


MW: 9.05 ppg FV: 35 PV: 11 YP: 17 Gels: 3/4 KCl: 5%

BAKER-HUGHES INTEQ OnTrak LOGGING WHILST DRILLING COMMENCED AT 1916.6m TO TD. RECORDED GR, RESISTIVITY & TEMP.

1916 – 1937 SANDSTONE WITH MINOR THIN INTERBEDS AND LAMINAE OF CLAYSTONE. SANDSTONE: generally as above, white to very light grey, rarely greyish pink, clear to occasionally translucent quartz grains, very fine to fine, rare to occasional medium to very coarse grains, poorly to moderately well sorted, angular abundant quartz overgrowths with common sutured grain boundaries, common transverse grain fractures, siliceous cement, rare pyrite cement and pore fill, rare to occasional iron staining, siliceous matrix in part, occasional to common micaceous and argillaceous laminae, occasional glauconite grains, rare bituminous
moderately well sorted, angular, abundant quartz overgrowths (rarely of rose quartz) with common sutured grain boundaries, grading to protoquartzitic, rare to occasional fine to medium well rounded frosted quartz grains, common to abundant transverse grain fractures, siliceous cement, rare to occasional pyrite cement and pore fill, rare to occasional iron staining (druzy rose quartz?), minor siliceous matrix in part, rare kaolin matrix, occasional to common micaceous and argillaceous laminae, rare kaolin grains (after orthoclase), rare to occasional glauconite grains, rare to locally abundant bituminous pore fill (gilsonite), moderately hard to hard, very poor to poor visual and inferred porosity, no fluorescence.

SILTSTONE: mid to dark brown -grey and dark to very dark grey -brown, moderately to very argillaceous, very micromosaic to very micaceous, rare to occasional very fine to medium sub-rounded to well rounded quartz grains, moderately hard, sub-fissile to fissile.

2036 – 2060 INTERBEDDED SANDSTONE AND SILTSTONE WITH MINOR THIN CLAYSTONE INTERBEDS. SANDSTONE: generally as above, white to very light grey and light brown -grey, clear to occasionally translucent quartz grains, very fine to fine, rare to occasional medium and coarse grains, poorly to moderately well sorted, angular, abundant quartz overgrowths with common sutured grain boundaries grading to protoquartzitic, rare to occasional fine to medium well rounded frosted quartz grains, common to abundant transverse grain fractures, siliceous cement, rare to occasional pyrite cement and pore fill, rare ferro-siliceous grain coating and matrix, minor siliceous matrix in part, rare kaolin matrix, occasional to common micaceous and argillaceous laminae, rare to locally common kaolin grains (after orthoclase?), rare to locally common glauconite grains, rare to locally abundant bituminous pore fill (gilsonite), moderately hard to hard, very poor to poor visual and inferred porosity, no fluorescence. SILTSTONE: mid to very dark brown -grey and dark...
2060 – 2004 SANDSTONE WITH INTERBEDS OF SILTSTONE

SANDSTONE: very light grey to off-white and very light yellowish grey, very fine to fine, moderately well sorted, angular, abundant quartz overgrowths, siliceous cement, siliceous matrix in part, siliceous and sericitic matrix in part, rare to occasional kaolin matrix, rare to locally abundant bituminous pore fill (gilsonite), rare fine glauconite grains, occasional to common kaolin grains (after orthoclase?), very firm to very hard, poor to very poor visual porosity, no fluorescence. SILTSTONE: mid to very dark brown -grey and dark to very dark grey -brown, moderately to very argillaceous, moderately to very micromicaceous, very micaceous in part, trace to common disseminated pyrite, rare carbonaceous flecks (?) in part, moderately hard, sub-blocky to fissile. CLAYSTONE: mid grey to mid brown -grey, silty, micromicaceous, occasional to common very fine to medium sub-rounded to rounded quartz grains, very firm to moderately hard, sub-blocky to blocky.

NB7 Reed R30APDH Bit
Jets: 2x15,1x14 In:
2094.50 mMDRT Out:
2280.00 mMDRT Drilled
185.5m in 78.1hrs
Grade: 5-5-WT-H-6-I-WT-HR

2094 – 2102 INTERBEDDED SANDSTONE AND SILTSTONE

SANDSTONE: very light grey to off-white and light brownish grey, dark grey to very dark brown -grey in part, very fine to fine, very fine to medium with common coarse grains in part, well to poorly sorted, mosaic of quartz overgrowths, siliceous cement, siliceous matrix in part, siliceous and sericitic matrix in part, very firm to moderately hard, sub-blocky to fissile.
WOB: 42-50 kbf Surf
RPM: 35-56 GPM: 351-363
SPP: 1255-1398 psi

2100 - 2110 INTERVAL: moderate to very fine, well sorted, angular, abundant quartz overgrowths, siliceous cement, occasional pyrite cement and matrix, siliceous matrix in part, rare to occasional kaolin matrix, abundant dark brown -grey argillaceous matrix in part, abundant carbonaceous matrix (glaucophane?) in part, rare fine to medium pale green to black glauconite grains, occasional to locally abundant kaolin grains (after orthoclase?), moderately hard to very hard, tight to very poor visual porosity, no fluorescence.

SILTSTONE: mid to very dark brown -grey and dark to very dark grey -brown, moderately to very argillaceous, moderately to very micromicaceous, very micaceous (muscovite) in part, rarely to commonly very finely arenaceous, silicified in part, trace to common disseminated pyrite, moderately hard to rarely very hard, sub-fossil to fissile, rarely blocky to sub-blocky.

2102 - 2120 SILTSTONE WITH THIN SANDSTONE INTERBEDS AND LAMINAE

SILTSTONE: mid grey to mid to very dark brown -grey and dark to very dark grey -brown, moderately to very argillaceous, moderately to very micromicaceous, rarely to commonly very finely arenaceous, silicified in part, trace to common disseminated pyrite, moderately hard to rarely very hard, sub-fossil to fissile, rarely blocky to sub-blocky.

SANDSTONE: very light grey to brownish grey, dark grey to very dark brown -grey in part, very fine to fine, well sorted, angular, abundant quartz overgrowths, siliceous cement, occasional pyrite cement and matrix, siliceous matrix in part, abundant dark brown -grey argillaceous matrix in part, rare fine glauconite grains, rare kaolin grains (after orthoclase?), moderately hard to very hard, tight to very poor visual porosity, no fluorescence.

2120 - 2168 SILTSTONE WITH THINLY INTERBEDDING AND INTERLAMINATED SANDSTONE

SANDSTONE: very light grey to brownish grey, dark grey to very dark brown -grey in part, very fine, very well sorted, angular, abundant quartz overgrowths, siliceous cement, occasional pyrite cement and matrix, siliceous matrix in part, rare fine glauconite grains, rare kaolin grains (after orthoclase?), moderately hard to very hard, tight to very poor visual porosity, no fluorescence.
part, rare fine glauconite grains, rare kaolin grains moderately hard to very hard, tight to very poor visual porosity, no fluorescence. SILTSTONE: mid grey to mid to very dark brown -grey and dark to very dark grey -brown, moderately to very argillaceous, moderately to very micaceous, rarely very micaeous, rarely to commonly very finely arenaceous, silicified in part, trace to common disseminated pyrite, moderately hard to rarely very hard, sub-fissile to fissile, rarely blocky to sub-blocky.

WOB: 42-53 lbf Surf
RPM: 45-59 GPM: 351-363
SPP: 1255-1406 psi

MW: 9.0 ppg FV: 37 PV: 12
YP: 15 Gels: 4/3 KCl: 3%

2168 – 2219 SANDSTONE WITH MINOR THIN INTERBEDS OF SILTSTONE.
SANDSTONE: off-white to very light brown -grey, very fine to fine, well sorted, rare to occasional subrounded to rounded frosted quartz grains, predominantly angular, abundant quartz overgrowths, siliceous cement, siliceous matrix in part, rare kaolinite grains, rare to occasional kaolinite, rare to occasional argillaceous grains, rare to occasional micaeous grains, rare pyrite crystals, moderately hard to very hard, tight to very poor visual porosity, no fluorescence. SILTSTONE: mid grey to mid brown -grey, occasionally dark grey -brown, moderately to very argillaceous, moderately to very micaceous, commonly very finely...
arenaceous in part, silicified in part, trace to common disseminated pyrite, moderately hard to rarely very hard, sub-blocky to sub-fissile.

WOB: 42-54 lbf Surf
RPM: 48-59 GPM: 351-363
SPP: 1350-1420 psi

Upr Velkerri Fm (2200.0 MD-RT, -1968.2 TVD-SS)
True Thickness = 357.9 m

2219 – 2237 SANDSTONE WITH VERY MINOR THIN INTERBEDS AND LAMINAE OF SILTSTONE
SANDSTONE 1): off-white to very light brown – grey, very fine to fine, well sorted, angular, abundant quartz overgrowths, siliceous cement, siliceous matrix in part, rare kaolinite matrix, rare to occasional kaolin grains, rare carbonaceous grains, rare lithic grains, rare pyrite crystals, moderately hard to very hard, tight to very poor visual porosity, no fluorescence. SANDSTONE 2): light to
mid grey -brown, very fine to fine, well sorted, angular, abundant quartz overgrowths, siliceous cement, argillaceous, micaceous and silty matrix, common to abundant very fine to fine mica flakes, rare to occasional very fine to coarse glauconite grains, moderately hard to hard, tight to very poor visual porosity, no fluorescence. Siltstone: mid grey to mid brown -grey, occasionally dark to very dark grey -brown, moderately to very argillaceous, moderately to very micaceous, commonly very finely arenaceous in part, silicified in part, trace to common disseminated pyrite, moderately hard to rarely very hard, sub-blocky to sub-fissile.

2237 – 2264 Sandstone 2) With very minor thin interbeds of sandstone 1) and Siltstone, Sandstone 1) off -white to very light brown -grey, very fine to fine, occasionally fine to medium, well to moderately sorted, angular, abundant quartz overgrowths, siliceous cement, siliceous matrix in part, rare kaolinite matrix, rare to occasional kaolin grains, rare carbonaceous grains, rare lithic grains, rare pyrite crystals, moderately hard to very hard, tight to very poor visual porosity, no fluorescence. Sandstone 2): light to mid grey -brown, very fine to fine, occasionally very fine to medium, well to moderately sorted, angular, abundant quartz overgrowths, siliceous cement, argillaceous, micaceous and silty matrix, common carbonaceous grains, common carbonaceous grain coatings, common to abundant very fine to fine mica flakes, rare very fine to fine glauconite grains, moderately hard to hard, tight to very poor visual porosity, no fluorescence.
to very poor visual porosity, no fluorescence. SILTSTONE: mid brown -grey to very dark grey -brown, moderately to very argillaceous, moderately micromicaceous, very finely arenaceous in part, occasional to common carbonaceous specks, trace disseminated pyrite, moderately hard to rarely very hard, sub-blocky to sub-fissile.

2264 – 2280 SANDSTONE WITH MINOR THIN INTERBEDS OF SILTSTONE - SANDSTONE: light to mid grey -brown, rarely very light grey to off -white, very fine to fine, occasionally very fine to medium, well to moderately sorted, angular, abundant quartz overgrowths, siliceous cement, argillaceous, micaceous and silty matrix, common carbonaceous(?), grains, common carbonaceous grain coatings, common to abundant very fine to fine mica flakes, rare very fine to fine glauconite grains, moderately hard to hard, tight to very poor visual porosity, no fluorescence. SILTSTONE: mid brown-grey to very dark grey -brown and very dark grey, moderately to very argillaceous, moderately micromicaceous, very finely arenaceous in part, occasional to common carbonaceous specks, trace disseminated pyrite, moderately hard to rarely very hard, sub-blocky to sub-fissile.

2280 – 2308 SILTSTONE WITH MINOR THIN INTERBEDS AND LAMINAE OF SANDSTONE - SILTSTONE: mid to dark grey, rarely dark brown -grey, moderately to very micromicaceous, occasional to rare micaceous laminae, rarely very finely arenaceous, moderately hard to hard, sub-fissile to fissile, rarely sub-blocky. SANDSTONE: off -white to light grey, occasionally mid brown -grey, very fine, very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures, siliceous cement, siliceous matrix, occasionally moderate argillaceous matrix, rare very fine glauconite grains, rare to common lithic grains, rare trace pyrite cement, hard to very hard, tight to very poor visual porosity, no fluorescence.
2308 – 2324 SILTSTONE WITH VERY MINOR THIN INTERBEDS AND LAMINAE OF SANDSTONE. SILTSTONE: mid to dark grey, rarely dark brown -grey, rarely light grey and quartzose grading to very fine Sandstone, moderately to vary micromicaceous, rare micaceous laminae, moderately hard to hard, sub-fissile to fissile, rarely sub -blocky.

SANDSTONE: light grey to mid brown -grey, occasionally off -white, very fine, very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures, siliceous cement, siliceous matrix, occasionally moderate argillaceous matrix, rare very fine glauconite grains, rare to common lithic grains, rare trace pyrite cement, hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence.

2334 – 2344 SILTSTONE WITH VERY MINOR THIN INTERBEDS AND LAMINAE OF SANDSTONE. SILTSTONE: mid to dark grey, rarely dark brown -grey, rarely light grey and quartzose grading to very fine Sandstone, moderately to vary micromicaceous, sub -phylilitic, moderately hard to hard, sub -fissile to fissile becoming increasingly splintery, rarely sub -blocky.

SANDSTONE: light grey to mid brown -grey, occasionally off -white, very fine, very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures, siliceous cement, siliceous matrix, occasionally moderate argillaceous matrix, rare very fine glauconite grains, rare to common lithic grains, rare trace pyrite cement, hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence.

MW: 9.0 ppg FV: 37 PV: 14 YP: 18 Gels: 5/9 KCl: 3%
2354 – 2385 Siltstone with very minor thin interbeds and laminae of sandstone. Siltstone: mid to dark grey and dark brown-grey, rarely light grey and quartzose grading to very fine sandstone, moderately to very micromicaceous, sub-phyllitic, trace to locally abundant disseminated pyrite, moderately hard to hard, sub-fissile to fissile becoming increasingly splintery, rarely sub-blocky. Sandstone: light grey to mid brown-grey, occasionally off-white, very fine, very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures, siliceous cement, siliceous matrix, occasionally moderate argillaceous matrix, rare very fine glauconite grains, rare to common lithic grains, rare trace disseminated pyrite, rare pyrite nodules, hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence.

MW: 8.95 ppg FV: 39 PV: 13 YP: 23 Gels: 9/14 KCl: 3%

2385 – 2400 interbedded and interlaminated siltstone and sandstone. Siltstone: mid to dark grey and dark brown-grey, rarely light grey and quartzose grading to very fine sandstone, moderately to very micromicaceous, sub-phyllitic in part, trace to locally abundant disseminated pyrite, very finely arenaceous in part, occasional micaceous laminae, moderately hard to hard, sub-fissile to fissile becoming increasingly splintery, rarely sub-blocky. Sandstone: light grey to dark brown-grey, occasionally off-white, very fine to fine, rarely very fine to medium, poorly to very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures in part, siliceous cement, siliceous matrix, occasionally moderate to abundant argillaceous and silty matrix, occasional to abundant mica flakes, rare to common.
Velkerri A (2400.0 MD-RT, -2168.1 TVD-SS)
True Thickness = 51.0 m

2400 – 2453 SANDSTONE WITH INTERBEDDED AND INTERLAMINATED SILTSTONE__SANDSTONE: light grey to predominantly dark brown -grey, very fine to fine, rarely very fine to medium, poorly to very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures in part, siliceous cement, siliceous matrix, occasionally moderate to abundant argillaceous and silt matrix, occasional to abundant mica flakes, common argillaceous inclusions in part, rare to common lithic grains, rare trace disseminated pyrite, rare pyrite nodules, rare glauconite grains, moderately hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence.

SILTSTONE: light to dark grey and dark brown -grey, rarely light grey and quartzose grading to very fine Sandstone, moderately to very micaceous, sub-phyllic in part, trace to locally abundant disseminated pyrite, very finely arenaceous in part, occasional micaceous laminae, moderately hard to hard, sub-fissile to fissile becoming increasingly splintery, rarely sub-blocky.
2435 – 2470 Siltstone with interbedded and interlaminated sandstone—siltstone: light to mid, rarely dark grey and dark brown -grey, commonly light grey and quartzose grading to very fine sandstone, moderately to very micromicaceous, sub -phyllitic in part, trace to locally abundant disseminated pyrite, generally argillaceous, very finely arenaceous in part, occasional micaceous laminae, rare to locally common carbonaceous?(?) specks, moderately hard to hard, sub -fissile to fissile, splintery, rarely sub -blocky. Sandstone: dark grey to dark brown -grey, occasionally very light to light grey, very fine, occasionally very fine to fine, rarely very fine to medium, moderately to very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures in part, siliceous cement, siliceous matrix, occasionally moderate to abundant argillaceous and silty matrix, occasional to abundant mica flakes, common argillaceous inclusions in part, rare to common lithic grains, rare trace disseminated pyrite, rare pyrite nodules, rare glauconite grains, moderately hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence.

WOB: 40-50 kbf Surf
RPM: 50-61 GPM: 358-370
SPP: 1411-1442 psi

2405.0 - 2503.0 m POT.
Gas pay 37m AV. POR 7.1% AV. SW 37.0%

Velkerri B (2470.0 MD-RT, -2238.1 TVD-SS)
True Thickness = 33.0 m

2470 – 2517 Sandstone with interbedded and interlaminated siltstone—sandstone: dark grey to dark brown -grey, occasionally very light to light grey, very fine, occasionally very fine to fine, rarely very fine to medium, moderately to very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures in part, siliceous cement, siliceous matrix, occasionally moderate to abundant argillaceous and silty matrix, occasional to abundant mica flakes, common argillaceous inclusions in part, rare to common lithic grains, rare trace disseminated pyrite, rare pyrite nodules, rare glauconite grains, moderately hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence.
2555 – 2591 CLAYSTONE WITH RARE LAMINAE OF SANDSTONE AND SILTSTONE CLAYSTONE: dark to very dark grey, abundantly micritic, common to abundant mica flakes in part, common to abundant disseminated pyrite, rare carbonaceous (?) specks, hard, sub-fissile to fissile. The following lithologies are in trace amounts only: SANDSTONE: very light to light grey, very fine, occasionally very fine to fine, well to very well sorted, angular to subangular, abundant quartz overgrowths, abundant sutured grain boundaries and transverse grain fractures in part, siliceous cement, siliceous matrix in part, occasional to abundant mica flakes, rare lithic grains, trace disseminated pyrite, rare pyrite nodules, rare carbonaceous (?) grains, hard to very hard, protoquartzitic in part, tight to very poor visual porosity, no fluorescence. SILTSTONE: mid to dark brown -grey, argillaceous, very finely arenaceous in part, common disseminated pyrite, very micritic, micritic, hard, sub-fissile.

2591 – 2651 SILTSTONE WITH INTERBEDS OF CLAYSTONE AND VERY MINOR THIN INTERBEDS AND LAMINAE OF SANDSTONE SILTSTONE: mid to dark brown -grey, argillaceous, very finely arenaceous in part, common to abundant disseminated pyrite, very micritic, micritic, hard, sub-fissile. CLAYSTONE: dark to very dark grey, abundantly micritic, common to abundant mica flakes in part, common to abundant disseminated pyrite, hard, sub-fissile to fissile, commonly splintery. SANDSTONE: light to dark brown -grey, rarely off-white to light grey, very fine, occasionally
good to poor visual porosity, no fluorescence.

MW: 9.0 ppg FV: 37 PV: 13
YP: 12 Gels: 2/6 KCl: 3%

WOB: 24-40 kbf Surf
RPM: 46-58 GPM: 341-373
SPP: 1471-1526 psi
Very fine to fine sandstone, well sorted, angular to subangular, moderate quartz overgrowths, siliceous cement, generally moderate to abundant argillaceous and silty matrix, siliceous matrix in part, occasional mica flakes, common argillaceous inclusions in part, rare to common lithic grains, trace disseminated pyrite, moderately hard to very hard, tight to very poor visual porosity, no fluorescence.
2651 – 2669 SILTSTONE WITH INTERBEDS OF CLAYSTONE AND MINOR SANDSTONE. SILTSTONE: light to mid grey, moderately argillaceous in part, slightly to abundantly micromicaceous, rarely quartzose grading to very fine Sandstone, trace to abundant disseminated pyrite, hard to rarely very hard, sub-fissile to fissile, commonly splintery, rarely sub-blocky. CLAYSTONE: mid to dark, occasionally very dark grey, abundantly micromicaceous, occasional micaceous laminae, common to abundant disseminated pyrite, hard, sub-fissile to fissile, commonly splintery. SANDSTONE: light brown-grey, rarely off-white to light grey, very fine, very well sorted, angular to subangular, moderate to abundant quartz overgrowths, siliceous cement, generally moderate to abundant argillaceous and occasionally silty matrix, siliceous matrix in part, common argillaceous inclusions in part, rare to common lithic grains, trace disseminated pyrite, moderately hard to very hard, tight to very poor visual porosity, no fluorescence.

2669 – 2714 SILTSTONE WITH INTERBEDS OF CLAYSTONE AND TRACES OF SANDSTONE. SILTSTONE: light to mid grey, occasionally dark grey, moderately argillaceous in part, slightly to abundantly micromicaceous, rarely quartzose grading to very fine Sandstone, trace to abundant disseminated pyrite, hard to rarely very hard, sub-fissile to fissile, commonly splintery, rarely sub-blocky. CLAYSTONE: mid to dark, occasionally very dark brownish grey, abundantly micromicaceous, occasional micaceous laminae, common to abundant disseminated pyrite, hard, sub-fissile to fissile, commonly splintery. SANDSTONE: off-white, rarely light brown -grey to light
grey, very fine to med, occasionally very fine, moderately well to very well sorted, angular to subangular, moderate to abundant quartz overgrowths, siliceous cement, generally moderate to abundant argillaceous and occasionally silty matrix, siliceous matrix in part, common argillaceous inclusions in part, rare to common lithic grains, rare carbonaceous grains, trace disseminated pyrite, moderately hard to very hard, tight to very poor visual porosity, no fluorescence.

WOB: 35-44 kbf Surf

RPM: 50-60 GPM: 341-358

SPP: 1471-1529 psi

TD 2714.3m Driller, 2714.5m Logger
REACHED AT 20:00 HRS, 11/10/2008.

BAKER-ATLAS WIRELINE LOGGING RUN

RUN 1: RD-RS-RMILL-SP-GR

DSL(GR)-MAC(DT24)-CAL. MAX. TEMP.

108°C (226°F) @ 2684m after 22.8 hrs

RUN 2: ZDL-ZCOR-CNC-GR-CALX-PE.

MAX. TEMP. 108°C (226°F) @ 2695 m

after 34 hrs

RUN 3: MREX-GR. 2571-18205m. MAX.

TEMP. 108°C (226°F) @ 2554m after 37 hrs.

RUN 4: STAR-GR. 2529.5-1555m. FOUR

ZONES LOGGED: 2529.5-2538.3m,

2304.6-2150m, 2150-1817.6m,

1814.8-1555m

EXTRAPOLATED BHT = 108°C (226°F)@ 2714.5m.

AUSTRALIAN DRILLING SERVICES RIG-6

RELEASED AT 12:00 HRS, 19/10/2009

216mm (8.5) HOLE

DRILLED TO

2714.3m, DRILLER

RAN SUSPENSION PLUGS.

HALS Laterolog Deep

ohm-M 2000

0.2

HALS Laterolog Shallow

ohm-M 2000

0.2

Bit Data

Drill Data

Mud Data
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<th>Formation Tops</th>
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ENCLOSURE B:

1:200 SHENANDOAH-1A MUDLOG
**Company**: Falcon Oil & Gas Ltd  
**Well**: Shenandoah-1A  
**Interval**: 1551.00 - 2720.35 meters  
**Created**: 12/Oct/2009 6:35:23 AM

---

**Formation Evaluation Log**

### Interpreted Lithology

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<tr>
<th>Lithology</th>
<th>% Core Oil Fluorescence</th>
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### Chromatograph

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### Remarks

- **DATA RECORDING STARTED FROM 1573 m**
- **Trace Gas**
- **Gas System Operational FROM 1576 m**
- **Pump Maintenance**
  - MW: 8.4ppg  
  - FV: 34  
  - PV: 5  
  - YP: 5  
  - Gels: 1/1 KCl: 5%
- **Replaced Gas Trap**
- **Drilled out cement track and shoe on 23rd August 2009**
- **Siltstone**: dk gry-bk, f aren grdg to silt SST, arg mtx, sli carb, v f trnsl brn qtz gr, miclam, strng sil cnt, hd-occ fm
- **Shale**: blk-v dk gry, vit i/p, v carb, fky-gran text i/p, com v f qtz miclam, fis-sbfis, brit
- **Sandstone**: cir-pl trnsl brn qtz, v f occ m, ang, pr srt, gen strng sil cnt, com sil agg, dissag i/p, hd, no vis por, no fluor

---

**ROP**

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**WOB**

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<tbody>
<tr>
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**Core**

- NB1 Hughes GT-1  
  - Jets: 3x16  
  - In: 1553 mMDRT  
  - Out: 1565 mMDRT  
  - Drilled 12 m in 6.0 hrs  
  - Grade: 1-1-WT-A-E-I-NO-BHA

- NB2 Hughes MXL-18DX  
  - Jets: 2x14, 1x10  
  - In: 1565 mMDRT  
  - Out: 1585 mMDRT  
  - Drilled 20 m in 4.2 hrs  
  - Grade: 1-1-WT-A-E-I-NO-CP
Coring Bit HCC URC-427
TFA: 1.08
In: 1585 mMDRT
Out: 1585.5 mMDRT
Cored 10.5 m in 4.5 hrs

(trace gas. gas lines blocked)

CORE-1: 1585-1595.5 m. CUT AND RECOVERED 10.5 m

RBB2 Hughes M XL-18DX
Jets: 2x14, 1x10
In: 1595.5 mMDRT
Out: 1745.0 mMDRT
Drilled 149.5 m in 29.4 hrs
Grade: 6-6-WT-A-E-3-CT-TW

(SANDSTONE: clr, trns brn qtz gr i/p, v f-f, tr m, ang, pr srt, com sil ovghth and sil agg, tr rel mtx, hd, no vis por, no fluor)

(SILTY SANDSTONE: f lam lt-dk gry, blk i/p, v f-slty qtz gr, mod wlt srt, ang, wk-mod string sil cmt, com arg-slt mtx, tr mic, fm-fri, tt vis por, no fluor)

CARBIDE CHECK @ 1606 m
TG: 56.8 units (1.14%)
HOLE IN GAUGE

(GAS LEVEL INCREASING IN UNIFORM FORMATION DUE TO AERATED MUD)

SERVICED GAS EQUIPMENT

FMG 901 units
35/29/20/10/4

FMG 969 units
36/29/18/10/4

(SILTSTONE: m-dk brn gry, aren, occ v f qtz gr, carb i/p, arg mtx, tr mic, fm-occ fri)

(SHALE: dk gry-bik, v carb i/p, com vit-sub vit carb flik and pst, sily lam i/p, tr v f SST, loc mic, fis)

(SANDSTONE: blk, dk gry, drk brn gry, v f, ang, mod wlt srt, string sil cmt, loc carb and mic incl, hd, no vis por, no fluor)
1640 - 1647m

GENERATOR FAILURE. GAS DATA LOST FROM 1636-1647m. DRILL DATA AVERAGED FROM 1640.5-1647m

SHALE: dk gry-blk, v carb i/p, com vit-sub vit carb flk and pat, silty lam i/p, tr v f SST, loc mic, fis

FMG 727 units 36/29/19/10/4

WOB: 13-28 klbf
RPM: 91-124
GPM: 212-381
SPP: 458-1173 psi

MW: 8.7 ppg   FV: 36
PV: 8   YP: 10
Gels: 1/3  KCl: 5%

FMG 175 units 33/28/21/12/6 30/08/09

---------------

31/08/09

SANDSTONE: clr-trnsl, mnr trnsl dk gry-dk brn qtz gr, v f-f, loc m and tr crs, ang-sbrnd, gen strng sil cmt, com agg w/ occ mtx, v hd, no vis por, no fluor

BG 10 units 34/28/20/12/6

SILTY SANDSTONE: trnsl-dk brn-gry qtz, f-v f, silty and carb mtx, com mic, f lam i/p, hd-fri, occ brit, ti por

SILTSTONE: dk gry-brn-gry blk, com silt qtz gr, occ sbrnd-sbang v f qtz gr, com arg mtx, com vit-sub vit carb flk, loc brn and clr mic, brit-occ fri

FMG 175 units 33/28/21/12/6 30/08/09

SANDSTONE: clr-trnsl, mnr trnsl dk gry-dk brn qtz gr, v f-f, loc m and tr crs, ang-sbrnd, gen strng sil cmt, com agg w/ occ mtx, v hd, no vis por, no fluor

BG 10 units 34/28/20/12/6

SILTY SANDSTONE: trnsl-dk brn-gry qtz, f-v f, silty and carb mtx, com mic, f lam i/p, hd-fri, occ brit, ti por
SHALE: v dk gry-blk, occ vit carb flks, com wh and brn mic flks, lam i/p, w' aren sit grdg-v f SST, plt-tab cutt, sbfis-fis, frm-brit

WOB: 19-30 klbf
RPM: 89-113
GPM: 204-409
SPP: 510-1422 psi

SANDSTONE: clr-trnsl, mnr gry-brn qtz, v f-f, tr m, ang-sbrnd, mod srt, strng-mod sil cmt, silty and carb mtx, mod fri-v hd, no vis por, no fluor

DEACTIVATED DE-GASER

MOROAK SANDSTONE
1723m (-1492mSS)

MW: 8.9 ppg   FV: 37
PV: 10   YP: 16
Gels: 4/7   KCl: 5%

SANDSTONE: mass clr-trnsl qtz, tr pnk, pl or, v f-crs qtz gr, gen f-m, com ang-sbrnd, shards sil agg, mnr carb and slts sil mtx, disagg, pr-tr inf por, no fluor

SANDSTONE (trace): mod red, v f-f, ang, sil wel gr, abun iron oxide mtx and gr stain, hd, no vis por, no fluor

SILTSTONE (trace): mod red, f aren, iron stain, platey spin cut, sbfis i/p, frm and brit

DST-1 (1580-1745m)
Conventional On-Bottom test.
Misrun lost packer seat when opening. No Hydro-Carbons detected

NB3 Hughes Tri-cone Bit
Jets: 2x14, 1x10
SILTSTONE: m gy-m brn gy, occ dk gy-brn, mod-v arg, mod-v micmic, rr v mic, com v f aren i/p, sil i/p, tr-com dissem pyr, mod hd-rr v hd, blky-sbbilky, occ sbfiss

MW: 9.0 ppg  FV: 37
PV: 12  YP: 15
Gels: 4/3  KCl: 3%

SANDSTONE: v lt gy-brnsh gy, occ dk gy-brn, v-f, v w-wl srt, ang, abd qtz ovghts, sil cmt, sil mtx i/p, occ pyr cmt & mtx i/p, rr kln gr, rr f glauc gr, loc com mafic gr, hd-v hd, ti-v pr vis por, no fluor

SILTSTONE: m gy-m brn gy, occ dk gy-brn, mod-v arg, mod-v micmic, rr v mic, com v f aren i/p, sil i/p, tr-com dissem pyr, mod hd-rr v hd, sbbilky-sbfiss

SANDSTONE: o/w-v lt gy, v-f, w-srt, rr-occ sbmd-rnd, fros qtz grs, pred ang, abd qtz ovght, sil cmt, sil mtx i/p, rr kln mtx, rr-occ kln gr, rr-occ carb grs, rr lith grs, rr pyr xl, mod hd-v hd, ti-v pr vis por, no fluor

SILTSTONE: m gy-m brn gy, occ dk gy-brn, mod-v arg, mod-v micmic, rr v mic, com v f aren i/p, sil i/p, tr-com dissem pyr, mod hd-rr v hd, sbbilky-sbfiss
SILTSTONE: med-dk gy, rr lt gy & qtzose grndg to vf Sandstone, mod-v micmic, sbphyl, mod hd-hd, sbfiss-fiss bcmg inc splin, rr sbblky

MW: 8.95 ppg   FV: 39  
PV: 13   YP: 23
Gels: 9/14  KCl: 3%

WOB: 40-52 klf
Surf RPM: 50-60
GPM: 358-370
SPP: 1411-1467 psi

SANDSTONE: lt gy-m brn gy, occ o/w, vf, pr-wl srt, ang-sbang, abd qtz ovgth, abd sut gr bound & transv gr frac, sil cmt sil mtx, occ mod arg mtx & sly mtx, rr tr dissem pyr, rr pyr nod, rr glauc grs, rr- com lith grs, occ-abd mic flks, com arg incl i/p, hd-v hd, protoqtzic i/p, ti-v pr vis por, no fluor

SILSTONE: med-dk gy, rr lt gy & qtzose grndg to vf Sandstone, mod-v micmic, sbphyl, mod hd-hd, sbfiss-fiss bcmg inc splin, rr sbblky

SANDSTONE: lt gy, pred dk brn gy, occ o/w, vf, rr vlf, pr-v wl srt, ang-sbang, abd qtz ovgth, abd sut gr bound & transv gr frac, sil cmt sil mtx, occ mod arg mtx & sly mtx, rr tr dissem pyr, rr pyr nod, rr glauc grs, rr- com lith grs, occ-abd mic flks, com arg incl i/p, hd-v hd, protoqtzic i/p, no fluor

SILSTONE: med-dk gy, rr lt gy & qtzose grndg to vf Sandstone, mod-v micmic, sbphyl, mod hd-hd, sbfiss-fiss bcmg inc splin, rr sbblky

SILSTONE: med-dk gy, rr lt gy & qtzose grndg to vf Sandstone, mod-v micmic, sbphyl, mod hd-hd, sbfiss-fiss bcmg inc splin, rr sbblky

02/10/09 03/10/09
WOB: 24-40 klbf
Surf RPM: 46-58
GPM: 341-373
SPP: 1471-1526 psi

CLAYSTONE: dk-v dk gy, abd micmic, abd-com mic flks i/p, com-abd dissem pyr, rr carb spks, hd, sbfiss-fiss

FMG 38 units
85/12/2/1

CLAYSTONE: med-dk gy, occ v dk gy, abd micmic, abd-com mic flks i/p, com-abd dissem pyr, com carb spks, hd, sbfiss-fiss

FMG 55 units
84/12/3/1

SILTSTONE: m-lt gy, arg, vf aren i/p, com dissem pyr, v micmic, hd, sbfiss

SANDSTONE: lt-dk brn gy, rr o/w-lt gy, vf, occ vf-f, wi-v wi srt, ang-sbang, mod qtz ovgth, sil cmt, mod-abd arg & slty mtx, sil mtx i/p, occ mic flks, com arg incl i/p, rr com lith grs, tr dissem pyr, mod hd-v hd, ti-v pr vis pr, no fluor

FMG 51 units
84/12/3/1
WOB: 35-44 klbf
Surf RPM: 50-60
GPM: 341-358
SPP: 1471-1529 psi

SILTSTONE: lt-med gy, mod arg i/p, sli-abd micmic, tr-abd dissem pyr, hd-rr v hd, sbliss-fiss, com splin, rr stblky

Reached TD of 2714mMDRT at October 11, 2009 at 20:11hrs