

APPENDIX 1

SAMPLE DESCRIPTIONS

Interval 200 ft to 4912 ft

WEST MEREENIE NO. 7 DITCH SAMPLES BEGINS @ 200 FEET.

- 200' - 230' --- 100% SANDSTONE: clear to white and off white, dominantly fine grained, trace medium, subangular to subrounded, well sorted, siliceous cement, argillaceous matrix, minor red ferruginous staining, 80% loose grains.
TR SILTSTONE: brick red, mauve brown, orange brown, dark brown, firm, sandy.
POROSITY: Poor.
- 230' - 260' --- 100% SANDSTONE: 95% single grains, clear to white, minor milky and off white, medium grained, subrounded to rounded, very well sorted, quartzose, siliceous cement, minor argillaceous matrix, trace light ferruginous staining.
POROSITY: Good
- 260' - 290' --- 100% SANDSTONE: 95% single grains, clear to off white, trace pale mauve and red, fine to medium grained, sub-rounded to rounded, poor sphericity, moderately well sorted, quartzose.
POROSITY: Good.
- 290' - 320' --- 100% SANDSTONE: 95% single grains, clear to off white, minor milky A/A, moderately sorted.
POROSITY: Good.
- 320' - 350' --- 100% SANDSTONE: 90% single grains, clear to off white, very fine to medium grained, rare coarse, sub-angular to rounded, fair to good sphericity, poorly sorted, quartzose, siliceous cement.
POROSITY: Poor to fair.
- 350' - 380' --- 100% SANDSTONE: 95% single grains, dominantly coarse grained, minor medium and fine, clear, frosted, off white, minor milky, sub-rounded to well rounded, very poorly sorted. Fair to good sphericity, quartzose, trace pale orange brown and mauve staining.
POROSITY: Fair.
- 380' - 410' --- 100% SANDSTONE: 100% single grains, clear, frosted, off white, medium grained, sub-rounded to rounded, very well sorted, fair sphericity, quartzose.
POROSITY: Good.
- 410' - 430' --- 100% SANDSTONE: 100% single grains, frosted, off white, fine to medium grained, sub-rounded to rounded, moderately sorted, quartzose.
POROSITY: Fair.

430' - 460' --- 100% SANDSTONE: 100% single grains, clear, off white, minor milky and frosted, dominantly medium grained, minor fine, A/A.
POROSITY: Good.

460' - 490' --- 100% SANDSTONE: A/A, fine to medium grained.
POROSITY: Fair.

490' - 520' --- 100% SANDSTONE: 100% single grains, clear, off white, frosted, minor milky, medium grained, rounded, fair to good sphericity, very well sorted, quartzose.
POROSITY: Good.

520' - 550' --- 100% SANDSTONE: A/A, fine to medium grained, dominantly fine, sub-angular to rounded, moderately sorted.
POROSITY: Fair.

550' - 580' --- 100% SANDSTONE: A/A, medium grained, rounded, fair sphericity, well sorted, quartzose, rare red ferruginous staining.
POROSITY: Good.

580' - 610' --- 100% SANDSTONE: 100% single grains, clear, off white, frosted, fine to medium grained, sub-rounded to round, poor to fair sphericity, moderately sorted, quartzose.
POROSITY: Fair.

STARTED MISTING AT 585 FEET.

610' - 640' --- 100% SANDSTONE: A/A, 95% loose grains.
POROSITY: Fair.

640' - 700' --- 100% SANDSTONE: 80% loose grains, buff, white to clear, most grains frosted, fine to medium grained, A/A, trace mauve brown and orange ferruginous mottling. Buff and off white becoming a very pale orange brown overall colour.

700' - 730' --- 100% SANDSTONE: buff to pale orange brown, clear, fine to medium grained, occasionally coarse, sub-rounded to rounded, poor to fair sphericity, poorly sorted, quartzose, siliceous cement, argillaceous matrix in parts, minor ferruginous mottling, generally friable, 50% single grains.
POROSITY: Fair.

730' - 760' --- 100% SANDSTONE: clear to very pale orange, many grains frosted, fine to medium grained, sub-rounded to rounded, moderately sorted, quartzose, siliceous cement, white argillaceous matrix in parts, friable.
POROSITY: Good.

760' - 790' --- 100% SANDSTONE: A/A, also minor buff and mauve, trace heavy red black ferruginous staining.
TR SILTSTONE: dark purple, blocky, sandy.
POROSITY: Good.

790' - 820' --- 100% SANDSTONE: pale orange to orange, minor white, trace purple, fine to medium grained, sub-rounded to rounded, moderately sorted, quartzose, siliceous cement, argillaceous cement in parts, friable.
TR SILTSTONE: purple, firm to hard, blocky, sandy.
POROSITY: Good.

820' - 850' --- 80% SANDSTONE: pale orange, buff, orange brown, minor white, fine to medium grained, A/A, orange brown has silty matrix, brittle to friable.
20% SILTSTONE: purple, blocky to sub-fissile, hard, sandy and dolomitic in parts, interlaminated by SHALE fissile, argillaceous.
POROSITY: Poor to fair.

850' - 880' --- 60% SANDSTONE: orange to orange brown, minor white, clear and buff, fine grained, occasionally medium, moderate sorting, siliceous cement, silty matrix in parts, brittle to friable, ferruginous.
30% SILTSTONE: purple, minor brick red, generally subfissile, minor blocky, firm, sandy in parts, dolomitic.
10% SHALE: purple, fissile, argillaceous.
POROSITY: Poor.

880' - 910' --- 70% SANDSTONE: orange, orange brown, white, clear and mauve, generally fine grained, sub-rounded, moderately well sorted, siliceous cement, silty matrix in parts, grading to siltstone, friable to brittle, ferruginous.
30% SILTSTONE: purple, sub-fissile, minor blocky, sandy, dolomitic, firm.
POROSITY: Poor.

910' - 940' --- 70% SANDSTONE: A/A, increasing pale orange, pale mauve, trace yellow, weakly dolomitic in places.
30% SILTSTONE: A/A, arenaceous, minor brown.
POROSITY: Poor.

940' - 970' --- 90% SANDSTONE: mottled and speckled pale mauve, minor orange, clear and white, fine to medium grained, occasionally coarse, sub-rounded to rounded, poorly sorted, quartzose, siliceous cement, dolomitic in places, minor amount orange with silty matrix, brittle, some siliceous.
 10% SILTSTONE: purple, orange brown, blocky to subfissile, firm to brittle, arenaceous, sandy in parts, dolomitic (purple more so than orange brown).
 POROSITY: Poor.

970' - 1000' --- 100% SANDSTONE: A/A, slight increase in orange.
 TR SILTSTONE: A/A.
 POROSITY: Poor.

000' - 1030' --- 80% SANDSTONE: clear, pale mauve, orange, orange/brown, minor white, fine to coarse grained, sub-rounded to rounded, poorly sorted, fair sphericity, quartzose, siliceous/dolomitic cement, orange and orange brown have silty matrix, brittle to friable, increase in amount of orange and orange brown.
 20% SILTSTONE: orange brown to red brown, purple (minor), sandy, arenaceous, blocky, trace dolomitic, firm.
 POROSITY: Poor.

1030' - 1060' --- 80% SANDSTONE: clear to orange and orange brown, pale speckled mauve, minor white, fine to coarse grained, sub-rounded to well rounded, fair sphericity, very poorly sorted, medium and coarse grains loose, frosted and milky, siliceous cement, minor dolomitic, orange and orange brown have silty matrix, slight increase in white cuttings.
 20% SILTSTONE: red brown, sandy, grades from sandstone with silty matrix, occasionally weakly dolomitic.
 POROSITY: Poor.

1060' - 1090' --- 100% SANDSTONE: clear, frosted, medium to coarse grained, minor fine, sub-rounded to rounded, fair to good sphericity, moderately sorted, quartzose, 100% loose grains.
 POROSITY: Good.

1090' - 1120' --- 100% SANDSTONE: A/A, fine to coarse grained, poorly sorted, siliceous cement, fine grains as aggregates, medium and coarse loose.
 POROSITY: Fair.

1120' - 1150' --- 100% SANDSTONE: A/A.
 POROSITY: Fair.

1150' - 1180' --- 100% SANDSTONE: clear to frosted, fine to medium grained, occasionally coarse, sub-rounded, moderately sorted, dominantly loose grains, fine grains as small aggregates, siliceous cement. POROSITY: Fair.

1180' - 1210' --- 100% SANDSTONE: A/A, fine to coarse grained, medium and coarse in fine grained matrix. POROSITY: Poor.

1210' - 1240' --- 100% SANDSTONE: clear to white, frosted, very fine to coarse grained, medium and coarse in fine grained matrix, rounded, fair to good sphericity, very poorly sorted, quartzose, siliceous cement, friable. POROSITY: Poor. REMARKS: Abundant white rock fluorescence.

1240' - 1270' --- 100% SANDSTONE: A/A. POROSITY: Poor.

1270' - 1300' --- 100% SANDSTONE: clear to white, frosted, very fine to coarse grained, medium and coarse in fine grained matrix, rounded, poorly sorted, siliceous cement, 80% loose grains. POROSITY: Poor, A/A.

1300' - 1330' --- 100% SANDSTONE: A/A, trace yellow and orange, medium and coarse in fine grained matrix. POROSITY: Poor, A/A.

1330' - 1360' --- 100% SANDSTONE: clear to white, frosted, fine to medium grained, occasionally coarse, becoming finer grained, sub-rounded to rounded, moderately sorted, quartzose, siliceous cement. POROSITY: Poor, A/A.

1360' - 1390' --- 100% SANDSTONE: clear to white, pale yellow, minor brick red, trace yellow, fine to coarse grained, predominantly fine, coarse in fine grained matrix, sub-rounded to rounded, poorly sorted, quartzose, siliceous cement, hard to brittle. POROSITY: Poor.

1390' - 1420' --- 100% SANDSTONE: A/A, brick red has clay matrix. POROSITY: Poor.

1420' - 1450' --- 100% SANDSTONE: clear to white, minor pale pink (1st occurrence), pale yellow, trace brick red and purple, fine to coarse grained, dominantly fine, sub-rounded to rounded, poorly sorted, coarse in fine grained matrix, siliceous cement, brittle to friable.
 POROSITY: Poor to fair.
 EST. TOP LOWER MEREENIE @ 1450'.

1450' - 1460' --- 100% SANDSTONE: bimodal, 70% clear to white, dominantly fine grained, also medium and coarse, sub-rounded to rounded, moderately poorly sorted, siliceous cement, brittle to friable, 30% pale pink to pink orange, dominantly fine grained, occasionally coarse, moderately sorted, siliceous cement, slightly ferruginous, friable.
 TR SILTSTONE: light brown to red and mauve brown.
 POROSITY: Poor to fair.

1460' - 1480' --- 100% SANDSTONE: A/A, fine to coarse grained in both modes, large increase in medium and coarse, minor brick red to purple with matrix of silt/clay.
 TR SILTSTONE: A/A
 POROSITY: Poor.

1480' - 1510' --- 60% SANDSTONE: clear/white to pink, mauve and green, fine to very fine grained, rare coarse, sub-rounded, well sorted, quartzose, siliceous and dolomitic cement, all modes, cuttings are angular and subfissile.
 40% SILTSTONE: orange brown, purple brown, green, minor light brown, sub-fissile, firm, sandy, arenaceous, dolomitic in places.
 POROSITY: Poor.

1510' - 1540' --- 70% SANDSTONE: pale pink, clear to white, minor green, fine to medium grained, occasionally coarse, sub-angular to rounded, poorly sorted, fair to good sphericity, siliceous and dolomitic cement, appear sideritic in parts, brittle to hard.
 30% SILTSTONE: A/A.
 POROSITY: Poor.

1549' - 1570' --- 90% SANDSTONE: clear/white, orange decreasing pale pink and mauve, minor green, fine to coarse grained, becoming coarser grained, rounded, very poorly sorted, quartzose, siliceous and dolomitic cement, minor sideritic, increase in orange cuttings; some with orange brown, purple brown, sub-fissile, firm, becoming more argillaceous, weakly dolomitic in parts.
 POROSITY: poor.

1570' - 1700' --- 80% SANDSTONE: clear/white, pale pink, mauve green, minor brick red, purple and orange, trace yellow, fine to coarse grained, dominantly fine, sub-rounded to rounded, poorly sorted, siliceous, minor dolomitic cement, brick red and purple have clay matrix, brittle to hard.
20% SILTSTONE: dominantly mauve brown, also light brown, green and orange brown, sub-fissile to fissile, argillaceous, sandy in parts, firm.
POROSITY: poor.

EST. TOP CARMICHAEL SANDSTONE @ 1601 FEET.

1600' - 1610' --- 90% SANDSTONE: clear to pale pink to pink orange, speckled appearance, minor white and green, fine grained, occasionally medium and coarse, sub-rounded to rounded, moderately sorted, siliceous cement, hard.
20% SILTSTONE: mauve brown, light brown, sub-fissile, firm, sandy in parts, arenaceous.
POROSITY: poor.

Lithology records from 1610 to 3576 feet lost in rig fire. No samples 3576 to 3640 feet.

3640' - 3650' --- 80% SANDSTONE: clear to white, grey and pyritic. Generally fine grained with occasional coarse round grains, sub-angular to sub-rounded grains. 50% strongly pyritic minor silty matrix parts, moderate sorting, quartzose, siliceous cement, some chips sucrosic.
20% SILTSTONE: Medium grey and brassy, strongly pyritic, blocky, occasionally arenaceous.
POROSITY: poor - no fluorescence.

3650' - 3660' --- 70% SANDSTONE: A/A. Weakly calcareous.
30% SILTSTONE: Medium grey and brassy. Strongly pyritic, blocky, sub-fissile, arenaceous, grades to fine sandstone in parts.
POROSITY: poor-no fluorescence.

3660' - 3670' --- 80% SANDSTONE: clear to white and translucent, grey and pyritic, generally fine grained, occasionally medium, moderately sorted, angular to sub-angular, 50% strongly pyritic, minor silty matrix, quartzose, siliceous cement, some weak calcareous cement.
20% SILTSTONE: A/A.
POROSITY: poor - no fluorescence.

3670' - 3680' --- No Sample.

3680' - 3690' --- 90% SANDSTONE: clear to white, minor light grey, fine to coarse grains, very poor sorting, sub-angular to angular, coarse grains with some frosting. Finely pyritic in parts, some silty matrix, trace calcareous cement in parts, quartzose, siliceous cement.
 10% SILTSTONE: Medium grey and brassy, blocky, finely pyritic.
 POROSITY: poor - no fluorescence.

3690' - 3700' --- 100% SANDSTONE: clear to white and translucent, coarse grains with some fine, poor sorting, coarse grains sub-rounded with some frosting, fine grains sub-angular to sub-rounded, calcareous cement in parts, quartzose, siliceous cement.
 TR SILTSTONE: grey, minor brassy, finely pyritic, blocky - sub-fissile.
 POROSITY: poor - no fluorescence.

3700' - 3710' --- 100% SANDSTONE: clear to off-white and light grey, very fine to coarse grains, predominantly fine, sub-angular to sub-rounded, very poor sorting, coarse grains with some frosting, quartzose, siliceous cement.
 TR SILTSTONE: A/A
 DOLOMITE: light grey, finely crystalline, blocky.
 POROSITY: very poor - no fluorescence.

3710' - 3720' --- 90% SANDSTONE: clear to off-white, brassy and grey, very fine to coarse grains, predominantly fine to very fine, sub-angular to sub-rounded
 10% SILTSTONE: A/A
 TR DOLOMITE: A/A
 POROSITY: very poor - no fluorescence.

3720' - 3730' --- 90% SANDSTONE: clear to off-white, coarse grained, trace fine, rounded and minor frosted, well sorted, quartzose, siliceous cement.
 10% SILTSTONE: dark grey, blocky, pyritic.
 POROSITY: fair - no fluorescence.

3730' - 3740' --- 90% SANDSTONE: clear to off-white and light grey, fine to coarse grained, coarse predominant, poorly sorted, sub-rounded to rounded, conglomeritic texture, quartzose.
 10% SILTSTONE: grey to dark grey, blocky - sub-fissile, pyritic, grades to very fine Sandstone.
 POROSITY: fair - no fluorescence.

3740' - 3750' --- NO SAMPLE

3750' - 3760' --- 90% SANDSTONE: clear to off-white, some brassy and light grey, coarse grained, moderately well sorted, minor fine grains, sub-rounded to rounded, quartzose.
 10% SILTSTONE: grey and brassy, blocky, finely pyritic, grades to very fine Sandstone.
 POROSITY: poor to fair - no fluorescence.

3760' - 3770' --- 90% SANDSTONE: clear to off-white and light brassy grey, fine grained, some medium and coarse, poor sort, sub-angular to sub-rounded, coarse grains round, quartzose, siliceous cement, some weak calcereous cement, occasional dark lithics.
 10% SILTSTONE: grey and brassy, blocky - subfissile, finely pyritic.
 POROSITY: poor - no fluorescence.

3770' - 3780' --- 90% SANDSTONE: clear to light grey, very fine to fine grained, moderately sorted, sub-angular to subrounded, occasional dark lithics, quartzose, siliceous cement, weakly calcareous in parts.
 10% STILSTONE: grey and brassy, blocky, grades to very fine Sandstone, finely pyritic.
 POROSITY: poor - no fluorescence.

3780' - 3790' --- 90% SANDSTONE: off white to light grey and light brown grey, fine grained, occasional medium and coarse, sub-angular to sub-rounded, moderate sorting, quartzose.
 10% SILTSTONE: grey and brassy to dark grey, blocky to sub-fissile, finely pyritic, grades to very fine Sandstone.
 POROSITY: poor - no fluorescence.

3790' - 3800' --- 90% SANDSTONE: off white to light grey, dark brown grey and brassy, very fine to fine grained, sub-angular, moderately well sorted, quartzose, pyritic, calcerous cement, 5% Stokes contamination.
 10% SILTSTONE: grey and brassy, blocky to sub-fissile, finely pyritic, arenaceous grades to very fine sandstone.
 POROSITY: poor - no fluorescence.

3800' - 3810' --- 50% SANDSTONE: light grey to grey, some brown grey, very fine to fine grained, subangular, moderately sorted, quartzose, silty matrix, finely pyritic, grades to siltstone in parts, siliceous and weak calcareous cement, 5% stokes contamination.
50% SILTSTONE: grey to dark grey, blocky - subfissile, some fine grained sands are finely pyritic.
POROSITY: poor - no fluorescence.

3810' - 3820' --- 30% SANDSTONE: A/A
70% SILTSTONE: grey and brassy grey, blocky - subfissile, finely pyritic, grades to very fine Sandstone. Faint oily odour.
POROSITY: poor - no fluorescence

3820' - 3830' --- 60% SANDSTONE: clear to light grey to grey, very fine to medium grained, sub-rounded, poor sorting, medium grains rounded, quartzose, minor silty/pyritic matrix, some pyritic aggregate, siliceous cement.
40% SILTSTONE: grey and brassy grey - dark grey, blocky to subfissile, minor fissile, finely pyritic, grades to very fine sandstone.
POROSITY: poor - no fluorescence. Very faint oily odour.

3830' - 3840' --- 30% SANDSTONE: light grey to brown grey, very fine to fine grained, some medium, subangular, moderately poor sorting, quartzose, 70% silty/pyritic matrix, siliceous cement.
70% SILTSTONE: A/A
POROSITY: very poor - no fluorescence.

3840' - 3850' --- 40% SANDSTONE: light grey to grey, fine grained, minor medium, moderately sorted, coarse grains appear oil stained, sub-angular, quartzose, occasional dark lithics.
60% SILTSTONE: grey to dark grey, blocky, minor pyritic.
POROSITY: generally poor, fair in medium grained cuttings.

3850' - 3860' --- 80% SANDSTONE: clear to white, off which and light grey, medium grained, moderately well sorted, sub-angular, minor brownish oil staining, quartzose, minor dark lithics and pyrite, siliceous cement .
20% SILTSTONE: A/A
POROSITY: fair, pale blue and yellow/white fluorescence to 2% of sample.

3860' - 3870' --- 90% SANDSTONE: off white to light brown/grey, 30% dark brown to grey, fine to medium grained, moderate sorting, subangular, brownish oil staining, quartzose, 30% with silty pyritic matrix, siliceous cement.
10% SILTSTONE: dark grey to brown, very sandy, blocky, minor pyritic.
POROSITY: poor, good light yellow fluorescence to 10% of sample.

3870' - 3880' --- 80% SANDSTONE: A/A
20% SILTSTONE: A/A
POROSITY: poor, fluorescence to 1% of sample.

3880' - 3890' --- 90% SANDSTONE: off which to light grey, light brown and dark brown, fine grained, well sorted. sub-angular to sub-rounded with brown to greyish oil staining, quartzose.
10% SILTSTONE: dark brown to grey, blocky - subfissile, pyritic, arenaceous in parts.
POROSITY: poor, good light yellow fluorescence to 2% of sample.

3890' - 3900' --- 80% SANDSTONE: off light brown to grey brown, minor brassy, fine grained, sub-angular, well sorted, some brown oil staining, quartzose, siliceous cement, minor pyrite.
20% SILTSTONE: A/A
POROSITY: poor, yellow to white fluorescence to 1% of sample.

3906' SPOT SAMPLE

10% SANDSTONE: A/A. Good yellow fluorescence, 100% of Sandstone.
90% SILTSTONE: dark grey, blocky - subfissile, finely pyritic in parts, arenaceous, some chips fissile.

EST TOP HORN VALLEY ON SAMPLE @ 3905'

3900' - 3910' 20% SANDSTONE: off white to dark grey, fine grained, subangular, moderately well sorted. quartzose, silty matrix, minor pyrite aggregates, siliceous cement.
80% SILTSTONE: dark grey, blocky to subfissile, occasionally fissile, finely pyritic, generally sandy.
POROSITY: poor, no show.

3910' - 3920' --- 20% SANDSTONE: A/A
80% SILTSTONE: A/A
POROSITY: poor, no show.

3920' - 3930' --- 90% SILTSTONE: grey, sub-fissile to fissile, rare pyrite, occasionally arenaceous.
10% LIMESTONE: dirty buff grey, medium crystalline, blocky.

3930' - 3940' --- 80% SILTSTONE: A/A.
20% LIMESTONE: off white to dirty buff grey, medium crystalline, blocky. Rare dirty yellow fluorescence.
POROSITY: poor.

3940' - 3950' --- 60% SILTSTONE: grey to dark grey, subfissile to fissile, calcareous in parts, occasional pyritic and arenaceous.
30% LIMESTONE: off white to dirty buff grey, medium to coarsely crystalline, blocky, occasional pyritic, fossiliferous.
10% SANDSTONE: off white, very fine grained, well sorted, calcereous cement, rounded grains.
POROSITY: poor, no shows.

3950' - 3960' --- 90% SILTSTONE: grey, subfissile to fissile, occasional pyrite, firm, weakly calcereous in places, trace shell fragments
10% LIMESTONE: off white - honey brown, A/A.
TR SANDSTONE: A/A, few dark lithics.
POROSITY: poor, no shows.

3960' - 3970' --- 80% SILTSTONE: light to dark grey, A/A, arenaceous in places, some cuttings are splintery.
20% LIMESTONE: A/A, contains some dark elongate lithics,
TR SANDSTONE: A/A.
POROSITY: poor, no show.

3970' - 3980' --- 70% SILTSTONE: grey, sub-blocky to sub-fissile and splintery, weakly calcereous, occasional fine pyrite aggregates, firm.
30% LIMESTONE: off white to dirty grey and honey brown, medium to coarsely crystalline, contains elongate siltstone lithics, fossiliferous.
TR SANDSTONE: clear to off white, generally very fine grained, occasionally medium, calcereous cemented.
POROSITY: poor, no shows.

3980' - 3990' --- 60% SILTSTONE: light to medium grey, A/A.
20% SANDSTONE: clear to light off grey, very fine to fine grained, well sorted, calcareous cement, occasional dark lithics.
20% LIMESTONE: A/A, medium crystalline, becoming more sandy, trace shell fragments.
POROSITY: poor, no show. .

3990' - 4000' --- 70% SILTSTONE: grey, subfissile to fissile, weakly calcareous,
20% SANDSTONE: A/A.
10% LIMESTONE: A/A.
POROSITY: Poor, no show.

4000' - 4010' --- 20% SANDSTONE: off white to dirty light grey, fine to very fine grained, well sorted, rounded grains, occasional lithics, calcareous cement.
70% SILTSTONE: A/A.
10% LIMESTONE: A/A.
POROSITY: Poor, no shows.

4010' - 4020' --- 10% SANDSTONE: A/A.
90% SILTSTONE: medium to dark grey, sub-blocky to fissile, also splintery, occasional finely disseminated pyrite, weakly calcareous.
TR LIMESTONE: A/A.
POROSITY: poor, no show.

4020' - 4030' --- 10% SANDSTONE: A/A, clear to off white and dirty light grey, very fine to fine grained, well sorted, rounded grains, occasional lithics, calcareous cement.
80% SILTSTONE: A/A.
10% LIMESTONE: off white to buff, medium to coarsely crystalline, sandy in parts, blocky.
POROSITY: poor, no show.

4030' - 4040' --- 20% SANDSTONE: A/A.
80% SILTSTONE: A/A.
TR LIMESTONE: A/A.
POROSITY: poor, no show.

4040' - 4050' --- 10% SANDSTONE: clear to off white and buff, fine to very fine grained, well sorted, calcareous cement.
90% SILTSTONE: medium grey, subfissile to fissile, also elongate splintery, firm, weakly calcareous, occasional disseminated pyrite.
TR LIMESTONE: A/A.
POROSITY: poor, no show.

4050' - 4060' --- TR SANDSTONE: A/A.
100% SILTSTONE: Light to dark grey, A/A, occasionally very calcareous.
TR LIMESTONE: off white to red, coarsely crystalline, occasionally silty and sandy, minor lithics.
POROSITY: poor, no show.

4060' - 4070' --- TR SANDSTONE: clear to off white and buff, fine to very fine grained, well sorted, calcareous cement.
 100% SILTSTONE: A/A.
 TR LIMESTONE: off white to dirty brown grey, coarsely crystalline, blocky.
 POROSITY: poor, no show.

4070' - 4080' --- 80% SILTSTONE: light to dark grey, sub-blocky to fissile, weakly calcareous, arenaceous and pyritic in places.
 20% LIMESTONE: off white to dirty brown grey, silty and lithic in places, fossiliferous, blocky.
 POROSITY: No show, trace shell fragments.

4080' - 4090' --- 50% SILTSTONE: A/A.
 50% LIMESTONE: off white to mottled dirty brown grey, coarsely crystalline, occasionally silty, sub-blocky to blocky, occasionally pyritic and fossiliferous.
 TRIP TO CHANGE BIT @ 4097 FEET.

4090' - 4100' --- 10% SANDSTONE: clear to off white and pale grey, fine grained, well sorted, rounded grains, occasionally dark elongate lithics, siliceous/calcareous cement.
 70% SILTSTONE: light to dark grey, A/A.
 20% LIMESTONE: A/A.
 POROSITY: poor, no shows.

4100' - 4110' --- 10% SANDSTONE: A/A.
 80% SILTSTONE: light to dark grey, some brown grey, blocky to subfissile, becoming more calcareous, finely pyritic in places, fossiliferous, firm to hard.
 10% LIMESTONE: off white to buff grey, fine to coarsely crystalline, silty in places, fossiliferous, blocky.
 POROSITY: poor, no show.

4110' - 4120' --- TR SANDSTONE: clear to off white and pale grey, fine grained, well sorted, rounded grains, siliceous/calcareous cement.
 80% SILTSTONE: A/A, becoming more fissile.
 20% LIMESTONE: A/A, becoming more sandy and silty.
 POROSITY: poor, no show.

4120' - 4130' --- TR SANDSTONE: A/A.
 90% SILTSTONE: dominantly light grey, subfissile to fissile, finely pyritic in parts, firm, weakly calcareous.
 10% LIMESTONE: off white to buff grey, pyritic, blocky, sandy in parts, fossiliferous, finely crystalline to coarsely crystalline.
 POROSITY: poor, no show.

4130' - 4140' --- TR SANDSTONE: clear to off white, fine grained, well sorted rounded grains, siliceous/calcareous cement, lithics, quartzose, occasional pyritic aggregates.
90% SILTSTONE: A/A, with occasionally pyritic aggregates.
10% LIMESTONE: A/A.
POROSITY: poor, no shows.

4140' - 4150' --- 90% SILTSTONE: A/A.
10% LIMESTONE: off white to buff grey, also honey brown, becoming more finley crystalline, blocky, sandy in parts, occasionally pyrite aggregates.

4150' - 4160' --- 90% SILTSTONE: dominantly light grey, subfissile to fissile, occasional pyritic aggregates, firm, indurated, weakly calcareous in places.
10% LIMESTONE: A/A.

4160' - 4170' --- 90% SILTSTONE: light to medium grey, A/A.
10% LIMESTONE: A/A.

4179' SPOT SAMPLE 10% SANDSTONE: off white to pale grey, fine grained, well sorted, sub-rounded grains, calcareous dolomitic cement, quartzose, 5% glauconite.
50% SILTSTONE: light to medium grey, blocky to fissile, firm, indurated, finely pyritic in places.
40% LIMESTONE: off white to pale buff grey and honey brown, generally coarsely crystalline, some sandy, glauconitic in places, occasional pyrite disseminates and aggregates blocky.
POROSITY: poor, no shows.

4170' - 4180' --- TR SANDSTONE: A/A.
70% SILTSTONE: A/A.
TR LIMESTONE: A/A.
POROSITY: poor, no shows.

4180' - 4190' --- 40% SANDSTONE: pale grey to dirty brassy grey, very fine to fine grained, well sorted, rounded grains, quartzose, 10% glauconite, siliceous/dolomitic cement, silty pyritic matrix in places, hard.
30% SILTSTONE: A/A.
30% LIMESTONE: off white to buff and honey brown, coarsely crystalline, slight mottled appearance, minor glauconite, dolomitic, blocky, very hard, pyritic aggregates.
POROSITY: poor, no shows.

4190' - 4200' --- 60% SANDSTONE: A/A, fine grained, 20% glauconitic.
30% SILTSTONE: light to medium grey, subfissile to fissile, firm, indurated, finely pyritic (disseminated) in places, very weakly dolomitic in parts.
10% LIMESTONE: A/A, sandy in places, more dolomitic.
POROSITY: poor, no shows.

4200' - 4210' --- 80% SANDSTONE: clear to pale grey to dark grey, mottled appearance, fine to medium grained, moderately well sorted, subrounded grains, quartzose, 10% glauconitic, high proportion interstitial residual hydrocarbons, siliceous/dolomitic cement, some with silty pyritic matrix, 20% with fair porosity, medium grained, friable.
 20% SILTSTONE: A/A.
 TR LIMESTONE: A/A.
 POROSITY: poor to fair, no fluorescence.

4210' - 4220' --- 80% SANDSTONE: clear to pale grey, honey brown, predominately fine grained, well sorted, subrounded grains, siliceous cement, weakly dolomitic in places, glauconite and residual hydrocarbons are confined mainly to the clear to pale grey sandstone, minor pyritic aggregates, brittle to hard, trace fair porosity.
 10% SILTSTONE: medium grey, sub-blocky, firm, indurated.
 10% LIMESTONE: off white to buff, fine to coarsely crystalline, blocky, glauconitic in places, occasional pyrite aggregates.
 POROSITY: poor, no shows.

4220' - 4230' --- 60% SANDSTONE: A/A.
 30% SILTSTONE: light to dark grey, sub-blocky to subfissile, arenaceous, sandy in parts, firm, indurated.
 10% LIMESTONE: A/A.
 POROSITY: poor, no shows.

4230' - 4240' --- 20% SANDSTONE: pale grey to brassy grey, fine to very fine grained, well sorted, subrounded grains, siliceous/weak dolomitic cement, minor glauconite and residual hydrocarbons, silty pyritic matrix in places, occasional pyrite aggregates, brittle to hard.
 80% SILTSTONE: A/A, grades to sandstone in places.
 TR LIMESTONE: A/A.
 POROSITY: poor, no shows.

4240' - 4248' --- 60% SANDSTONE: bimodal, 70%, A/A; 30%, white to clear, fine to medium grained, moderately well sorted, subrounded grains, siliceous cement, firm to friable, trace glauconite, poor porosity, trace fair porosity.
40% SILTSTONE: light to medium grey, brassy, sub-blocky to sub-fissile, occasional pyrite aggregates, micromicaceous in places, fossiliferous.
TR LIMESTONE: off white to buff grey, fine to coarsely crystalline.
POROSITY: poor yellow white fluorescence to 1% of cuttings. No cut (crushed). Yellow residual fluorescence.
POH TO CUT CORE NO. 1
4248 TO 4271 REFER TO CORE DESCRIPTIONS SHEETS

4271' - 4280' --- 90% SANDSTONE: white to pale grey, fine to very fine grained, sub-rounded grains, well sorted, siliceous cement, dark clay matrix in places, trace dead oil, occasional pyrite aggregates, tight.
10% SHALE: light to dark grey, sub-blocky to fissile, arenaceous in places, indurated.
POROSITY: poor, trace blue white fluorescence (< 1% of cuttings). No immediate cut. Yellow white residual fluorescence.

4280' - 4290' --- 60% SANDSTONE: A/A.
TR SILTSTONE: light to medium grey and brassy, sub-blocky to sub-fissile.
40% SHALE: A/A.
POROSITY: poor, trace blue white fluorescence (< 1% of cuttings), very faint streaming cut.

4290' - 4300' --- 60% SANDSTONE: clear to dirty pale grey, fine grained with occasional medium grains, moderately well sorted, subrounded grains, siliceous cement, quartzose, occasionally lithic, silty clay matrix in places, minor pyrite aggregates.
40% SHALE: light to dark grey, sub-blocky to fissile, arenaceous, grades to sandstone in places, minor disseminated pyrite, non-calcareous, indurated.
POROSITY: poor, rare blue white fluorescence, no cut.

4300' - 4310' --- 50% SANDSTONE: A/A.
30% SILTSTONE: light to dark grey, arenaceous grading to sandstone, sub-blocky, minor disseminated pyrite.
20% SHALE: light to dark grey, sub-fissile to fissile, indurated.
POROSITY: poor, trace blue white fluorescence.
No cut.

4310' - 4320' --- 20% SANDSTONE: generally pale to dirty grey, occasionally white, fine to very fine grained, well sorted, subrounded grains, siliceous cement, occasional dark lithics, silty clay matrix in parts, hard, tight.

20% SILTSTONE: light to dark grey, sub-blocky, grades to sandstone in places, occasional pyrite aggregates.

60% SHALE: dark grey, fissile, moderately soft, flaky.

POROSITY: poor, trace blue white fluorescence (<1% of cuttings). No cut.

4320' - 4330' --- 60% SANDSTONE: off white to pale and dirty grey, very fine to fine grained, rare medium and coarse rounded grains, generally well sorted, subrounded, siliceous cement, occasionally lithic, trace clay matrix, hard, tight.

10% SILTSTONE: A/A.

30% SHALE: A/A.

POROSITY: poor, no shows.

4330' - 4340' --- 70% SANDSTONE: A/A, becoming more poorly sorted with medium and coarse rounded grains becoming apparent, silty/pyritic matrix in places, micromicaceous planes in areas of silty lamination, minor pyritic aggregates and disseminations.

10% SILTSTONE: light to dark grey, sub-blocky, indurated, grades to sandstone in places.

20% SHALE: light to dark grey, fissile, moderately soft, flakey.

POROSITY: poor, no shows.

4340' - 4350' --- 70% SANDSTONE: off white to pale grey, minor white, fine grained, occasional medium to coarse rounded grains, well sorted, sub-rounded grains, siliceous cement, minor pyrite aggregates and coarse grained disseminations, interlaminated by shale in places.

10% SILTSTONE: light to dark grey, sub-blocky, arenaceous, grades to sandstone.

20% SHALE: light to dark grey, fissile, micromicaceous and finely pyritic in parts.

POROSITY: poor trace blue white fluorescence. No cut, poor porosity.

4350' - 4360' --- 70% SANDSTONE: off white to pale grey, becoming more clear to white, very fine to fine grained, well sorted, sub-rounded grains, siliceous cement, finely interlaminated by micromicaceous/pyritic shales, hard, brittle.
30% SHALE: dominantly light grey, minor dark grey, sub-fissile to fissile, micromicaceous and finely pyritic in parts, firm, moderately indurated, interlaminated with sandstone.
POROSITY: poor, no shows.

4360' - 4370' --- 70% SANDSTONE: A/A.
30% SHALE: light to dark grey and brassy, A/A.
POH TO CHANGE BIT @ 4369 FEET.
POROSITY: poor, no shows.

4370' - 4380' --- 80% SANDSTONE: clear to off white/pale grey, generally fine grained, tending to medium in places, sub-angular to subrounded, moderately well sorted, siliceous cement, quartzose, minor pyrite aggregates, hard, trace clay matrix and interlaminations by shale.
20% SHALE: mainly dark grey, subfissile to fissile, micromicaceous and finely pyritic in parts, moderately indurated, firm.
POROSITY: poor, no shows.

4380' - 4390' --- 90% SANDSTONE: off white to clear and white, fine grained, well sorted, subrounded grains, siliceous cement, occasional dark lithics, minor silty/pyritic matrix, hard, tight.
10% SILTSTONE: brassy grey, blocky to sub-fissile, arenaceous, grades to sandstone, finely pyritic.
POROSITY: poor, no shows.

4390' - 4400' --- 90% SANDSTONE: A/A.
10% SILTSTONE: A/A.
POROSITY: poor, no shows.

4400' - 4410' --- 80% SANDSTONE: A/A.
20% SILTSTONE: A/A.
POROSITY: poor, no shows.

4410' - 4420' --- 80% SANDSTONE: clear and off white, fine grained, well sorted, subrounded grains, siliceous cement, occasional clay/pyrite matrix and pyrite aggregates, finely interlaminated by shale in places.
10% SILTSTONE: A/A.
10% SHALE: light to dark grey and brassy, subfissile to fissile, micromicaceous and finely pyritic in places.
POROSITY: poor, no shows.

4420' - 4430' --- 80% SANDSTONE: A/A.
10% SILTSTONE: A/A.
10% SHALE: A/A.
POROSITY: poor, no shows..

4430' - 4440' --- 80% SANDSTONE: off white to pale grey, fine grained, sub-rounded to rounded grains, well sorted, siliceous cement, clay/pyritic/micaceous matrix in places, finely interlaminated by shale in places, occasional pyrite aggregates, hard, tight.
10% SILTSTONE: medium to dark grey, sub-blocky, arenaceous, finely pyritic.
10% SHALE: medium to dark grey, sub-fissile to fissile, micromicaceous and finely pyritic in parts.
POROSITY: poor, no shows.

4440' - 4450' --- 80% SANDSTONE: A/A, becoming more clear and white.
10% SILTSTONE: A/A.
10% SHALE: A/A.
POROSITY: poor, no shows.

4450' - 4460' --- 80% SANDSTONE: dirty pale grey to off white and clear, 80% fine grained, 20% medium to coarse, subangular to subrounded, poorly sorted, siliceous cement, minor calcareous/dolomitic cement, clay/pyritic matrix in parts, interlaminated by micaceous shale in places.
20% SHALE: A/A, calcareous in places.
POROSITY: poor, no shows. Increase in white rock flour, up to 20% of sample.

4460' - 4470' --- 90% SANDSTONE: dominantly off white, medium to coarse grained, sub-angular to sub-rounded, moderately sorted, siliceous cement with off white argillaceous matrix in parts, occasional pyrite aggregates, moderately brittle, generally well cemented, traces fair porosity.
10% SHALE: A/A.
POROSITY: poor to fair, no shows. Noticeable increase in torque between 4460-4470.

4470' - 4480' --- 90% SANDSTONE: clear to off white and dirty pale grey, 70% medium to coarse grains, 30% fine grains, medium to coarse moderately sorted, sub-angular to sub-rounded grains, fine grained aggregates, well sorted, subrounded, siliceous cement, occasional dark lithics, few coarse grains, milky quartz, occasionally disseminated and aggregates of pyrite, medium to coarse grained sandstone is brittle with trace fair porosity.
10% SHALE: light to dark grey and brassy, micromicaceous and finely pyritic in parts, sub-blocky to fissile, finely interlaminated with some sandstone.
POROSITY: poor to fair, no shows.

4480' - 4487' --- 90% SANDSTONE: clear to off white and pale grey, fine to coarse grained, subangular to subrounded grains, poorly sorted, siliceous/trace calcareous cement, generally tight with a high degree of secondary silicification, occasional pyrite aggregates and fine shale laminae.
10% SHALE: A/A.
POH TO CHECK BIT AND BHA. BIT CONDITION 8-5-1/2
POROSITY: poor, no shows.

4487' - 4490' --- 90% SANDSTONE: clear to pale grey and off white, generally fine grained, occasionally medium to coarse, subrounded, moderately well sorted, siliceous cement, hard, tight, highly silicified, interlaminated finely in places by pyritic shale.
10% SHALE: medium to dark grey and brassy, sub-fissile, finely pyritic in parts, occasionally calcareous, firm, indurated.
POROSITY: poor, trace pale dull blue yellow fluorescence in fine grained sandstone. (< 1% of cuttings). No cut.

4490' - 4500' --- 100% SANDSTONE: A/A.
TR SHALE: A/A.
POROSITY: poor, dull blue yellow fluorescence to 10% of sample. Occasionally in fine grained sandstone - appear live oil stained. No cut, bright white to white yellow residual fluorescence.

4500' - 4510' --- 100% SANDSTONE: clear to pale grey and minor off white, fine grained, tending to medium in parts, sub-rounded grains, moderately well sorted, siliceous cement, occasional dark lithic, traces fine shale laminations, occasional pyritic aggregates, hard, tight, well cemented.
 TR SHALE: brassy grey, subfissile, finely pyritic, indurated.
 POROSITY: poor, dull blue yellow fluorescence to 2% of sample. No cut.

4510' - 4520' --- 90% SANDSTONE: clear to pale grey, off white, fine to coarse grained, sub-angular to sub-rounded, poorly sorted, siliceous cement, occasional dark lithic, minor pyrite aggregates, hard, tight.
 10% SHALE: A/A.
 POROSITY: poor, very dull pale blue yellow fluorescence to 10% of sample. No cut.
 EST. TOP P2 @ 4526'.

4520' - 4530' --- 100% SANDSTONE: A/A.
 TR SHALE: A/A.
 POROSITY: A/A to 20% of sample.

4530' - 4540' --- 90% SANDSTONE: two lithologies (a) 40% clear to pale grey and off white, medium to coarse grained, sub-angular to sub-rounded, moderately poorly sorted, siliceous cement, tight, occasional pyrite aggregates. (b) 60% white to clear, fine to very fine grained, well sorted, subrounded grains, siliceous cement, occasionally calcareous, chloritic (pale green) in places, minor pyrite, very well cemented, tight, very hard.
 10% SILTSTONE: light grey, pale green grey, medium grey, blocky to fissile, arenaceous, grades to sandstone, finely pyritic and micaceous in places, argillaceous in parts, grading to shale.
 POROSITY: poor, trace very dull blue yellow fluorescence. No cut..

4540' - 4550' --- 90% SANDSTONE: white to off white, fine to very fine grained, subrounded grains, very well sorted, dominantly siliceous cement, chloritic in places, grey silty matrix in places, well cemented, hard, brittle in parts.
 10% SILTSTONE: grey to green grey, sub-blocky to sub-fissile, arenaceous, grades to sandstone, finely pyritic and micaceous in places.
 POROSITY: poor, no shows.

4550' - 4560' --- 90% SANDSTONE: A/A.
 10% SILTSTONE: A/A, also dark grey and fissile, shaley in places.
 POROSITY: poor, no shows.

4560' - 4570' --- 90% SANDSTONE: off white to white, generally fine grained, occasionally medium to coarse grained (may be uphole contamination - running string reamer and stabilizers) well sorted, subrounded grains, siliceous cement, trace calcareous cement, pyritic/clay matrix in parts, interlaminated by shale in places.
 10% SILTSTONE: light to dark grey and brassy, finely pyritic and micromicaceous in parts, sub-blocky to sub-fissile, calcareous in places.
 POROSITY: poor, no show.

4570' - 4580' --- 90% SANDSTONE: clear to off white, fine to medium grained, occasionally coarse, subangular to subrounded grains, poorly sorted, siliceous cement, occasional dark lithic and clay matrix, minor pyrite, interlaminated by shale in places, hard, tight.
 10% SHALE: brassy grey, sub-fissile to fissile, finely pyritic, arenaceous and grading to sandstone in places, occasionally micromicaceous, indurated.
 POROSITY: poor, trace blue yellow fluorescence.
 No cut.

4580' - 4590' --- 80% SANDSTONE: off white to clear and white, fine to coarse grained, poorly sorted, subangular to subrounded grains, siliceous cement, minor pyritic aggregates and disseminations, clay/siltstone/pyritic matrix in places, trace chlorite in parts, interlaminated by shale in places.
 10% SILTSTONE: brassy grey, blocky to sub-fissile, finely pyritic, arenaceous, grades to sandstone, firm, indurated.
 POROSITY: poor, no shows.

4590' - 4600' --- 90% SANDSTONE: A/A.
 10% SHALE: A/A.
 POH TO CHANGE BIT 4601 FEET.
 POROSITY: poor, no shows.

4600' - 4610' --- 80% SANDSTONE: clear to off white and white, dominantly fine grained, 20% medium to coarse, moderately poorly sorted, sub-angular to sub-rounded grains, siliceous cement, weakly dolomitic in places, occasional dark lithics, minor argillaceous matrix and interlaminated by shale and siltstone.
 10% SILTSTONE: brassy grey, blocky to sub-fissile, finely pyritic, grades to sandstone.
 10% SHALE: brassy grey, subfissile to fissile, finely pyritic, argillaceous.
 POROSITY: poor, no shows.

4610' - 4620' --- 80% SANDSTONE: A/A, occasional interstitial aggregates of pyrite.
 20% SILTSTONE: light brassy grey to dark grey, blocky to sub-fissile, finely pyritic, arenaceous grading to sandstone.
 POROSITY: poor, no shows..

4620' - 4630' --- 80% SANDSTONE: clear to off white, pale green grey, fine to coarse grained, occasionally very coarse, poorly sorted, sub-angular to rounded grains, siliceous cement, 10% argillaceous pyritic matrix, weakly dolomitic in parts, occasional interstitial pyrite, very well cemented, tight.
 10% SILTSTONE: A/A.
 10% SHALE: A/A.
 POROSITY: poor, no shows.

4630' - 4640' --- 90% SANDSTONE: A/A, 20% with argillaceous pyritic matrix, occasional dark lithics.
 10% SHALE: light to dark brassy grey, sub-fissile to fissile, finely pyritic, indurated, interlaminated with sandstone.
 POROSITY: poor, no shows.

4640' - 4650' --- 90% SANDSTONE: clear to pale grey and off white, fine to coarse grained, coarse in fine grained matrix, sub-angular to rounded grains, poorly sorted, siliceous cement, minor interstitial and aggregates of pyrite, dark argillaceous matrix in places, hard, very well cemented, tight.
 10% SILTSTONE: light to dark grey, brassy, arenaceous, grades to sandstone, generally blocky, calcareous in places, indurated, interlaminated with sandstone.
 POROSITY: poor, no shows.

4650' - 4660' --- 90% SANDSTONE: distinct change in lithology to dirty pale grey, fine to coarse grained, dominantly fine to medium, poorly sorted, sub-angular to sub-rounded, siliceous cement, high proportion argillaceous, dirty matrix, very lithic, minor disseminated pyrite, hard, tight, very well cemented.
 10% SILTSTONE: medium to dark grey, brassy, grades to sandstone, blocky, indurated, finely pyritic.
 POROSITY: poor, no shows.

4660' - 4670' --- 90% SANDSTONE: pale to dirty mottled grey, fine grained, occasionally medium, sub-rounded to rounded, moderately well sorted, siliceous cement, weakly dolomitic in places, 40% with argillaceous pyritic matrix, very lithic (5%) with dark rounded shale fragments, trace glauconitic, grades to pyritic siltstone in places.
10% SILTSTONE: brassy grey, subfissile, finely pyritic, occasionally dolomitic, grades to shale.
POROSITY: poor, no shows.

4670' - 4680' --- 80% SANDSTONE: A/A, increase in glauconite (2%).
20% SILTSTONE: A/A.
POROSITY: poor, no shows.

4680' - 4690' --- 80% SANDSTONE: dirty and mottled light grey, fine grained, sub-rounded to rounded, well sorted, siliceous cement, pyritic argillaceous matrix in places, quartzose, 2% dark rounded lithics, 7% glauconitic, minor pyrite disseminations and aggregates, hard to brittle, tight, interlaminated by shales in places.
20% SHALE: light to dark grey and brassy in places, sub-fissile to fissile, argillaceous, finely pyritic in parts.
POROSITY: poor, no shows.

4690' - 4700' --- 80% SANDSTONE: A/A, occasional medium grains, 10% glauconite.
20% SHALE: A/A.
POROSITY: poor, no shows.

4700' - 4710' --- 90% SANDSTONE: pale to dirty grey, fine grained, sub-rounded grains, well sorted, siliceous cement, weakly dolomitic in parts, quartzose, dark lithics in parts, 15% glauconite, occasional pyritic argillaceous matrix, interlaminated in places by shale, well silicified, hard to brittle, tight, occasional pyrite aggregates.
10% SHALE: medium brassy grey, sub-fissile to fissile, finely pyritic, firm, indurated, occasionally dolomitic.
POROSITY: poor, no shows.

4710' - 4720' --- 90% SANDSTONE: becoming cleaner, pale grey to off white, fine grained, A/A, 5% dark pyritic lithics, 15% glauconite, minor pyritic argillaceous matrix.
10% SHALE: A/A.
POROSITY: poor, no shows.

4720' - 4730' --- 100% SANDSTONE: pale grey, occasionally dirty, fine grained, sub-rounded, well sorted, siliceous cement, weakly dolomitic, 10% glauconitic, dark lithics, occasional pyritic argillaceous matrix, generally brittle, tight.
TR SHALE: A/A.
POROSITY: poor, no shows.

4730' - 4740' --- 100% SANDSTONE: A/A.
TR SHALE: A/A.
POROSITY: poor, trace speckled bright yellow fluorescence. No cut.

4740' - 4750' --- 90% SANDSTONE: pale grey, fine grained, sub-rounded to rounded grains, well sorted, siliceous/occasionally dolomitic cement, glauconite decreasing down to 2%, 5% dark rounded pyritic lithics, minor pyrite aggregates and disseminations, generally brittle.
10% SHALE: medium grey, brassy, sub-fissile to fissile, finely pyritic, indurated.
POROSITY: poor to fair, 30% speckled blue yellow fluorescence. Faint streaming white cut. Residual yellow fluorescence.

4753' SPOT SAMPLE 90% SANDSTONE: A/A, with traces of clear, white and off white, fine to medium grained, siliceous sandstone.
10% SHALE: A/A, (possible uphole contamination running stabilizers and string reamer).
POROSITY: poor, 20% fluorescence and cut A/A.
EST TOP P3 @ 4753 FEET.

4750' - 4760' --- 90% SANDSTONE: A/A, 20% clear to white, fine to medium grained, occasionally coarse, siliceous sandstone.
10% SHALE: A/A.
POROSITY: A/A, significant increase in white rock flour.

4760' - 4770' --- 90% SANDSTONE: 60% clean, white to clear and off white (live oil stained), fine to medium grained, loose coarse grains, sub-angular to sub-rounded, poorly sorted, siliceous cement, brittle to hard, 40% pale grey, dirty fine grained, lithic, glauconite P2 sandstone (uphole contamination).
10% SHALE: A/A, (uphole contamination).
POROSITY: poor to fair, 30% blue yellow fluorescence in both dirty P2 sandstone and clean P3-10 sandstone. No cut. Yellow white residual fluorescence.
POH to run electric logs and 8-5/8" casing. Displace water based mud with oil based mud.

4770' - 4780' --- 100% SANDSTONE: clear and milky, off white to white, oil stained, fine to coarse grained, sub-rounded to rounded grains, fair sphericity, poorly sorted, siliceous cement, friable.
POROSITY: poor to fair, oil based mud in hole, 100% bright blue white fluorescence. Faintstreaming white cut.

4780' - 4790' --- 100% SANDSTONE: A/A.
POROSITY: poor to fair, A/A, instant flood cut, occasional white streaming cut.

4790' - 4800' --- 100% SANDSTONE: A/A, trace chloritic.
POROSITY: poor to fair, 100% bright blue white fluorescence. Instant flood cut and good white streaming cut.

4800' - 4810' --- 100% SANDSTONE: clear, off white to pale yellow white, fine to coarse grained, sub-rounded, poorly sorted, siliceous cement, moderate to poorly friable, occasional oil stain.
POROSITY: poor, A/A.

4810' - 4820' --- 90% SANDSTONE: clear, off white to pale yellow white, with 20% pinkish red iron discolouration, fine to coarse grained, sub-rounded, poorly sorted, siliceous.
10% SILTSTONE: red brown, red grey, arenaceous, haematitic, sub-fissile.
POROSITY: poor, A/A.

4820' - 4830' --- 80% SANDSTONE: red brown, pinkish, clear, off white, fine to coarse grained, sub-rounded, poorly sorted, siliceous cement.
20% SILTSTONE: A/A.
POROSITY: poor, A/A.

4830' - 4840' --- 80% SANDSTONE: red brown, clear to off white, fine grained, sub-rounded, quartzose, siliceous, haematitic, poorly sorted, strong cementing.
20% SILTSTONE: red brown, haematitic, argillaceous, siliceous, friable, sub-fissile.
POROSITY: poor, blue white fluorescence and streaming white cut - oil base mud contamination.

4840' - 4850' --- 80% SANDSTONE: A/A.
20% SILTSTONE: A/A.
POROSITY: poor, A/A.

4850' - 4855' --- 80% SANDSTONE: red/brown, clear to off white, fine to medium grained, generally fine, fine grains, sub-rounded, medium grains, sub-rounded to rounded, quartzose, siliceous cement, haematitic, poor sorting.
 20% SILTSTONE: A/A.
 POROSITY: poor, A/A.

4855' - 4860' --- 80% SANDSTONE: A/A.
 20% SILTSTONE: A/A.
 POROSITY: poor, A/A.

4860' - 4870' --- 90% SANDSTONE: off white to very light brown, light red/brown, medium grained, sub-rounded to moderately well sorted, quartzose, siliceous cement, ferruginous (decreased from previous sample).
 10% SILTSTONE: red/brown, ferruginous, argillaceous, sub-fissile, friable, some sandy and micaceous in part.
 POROSITY: fair, A/A, with increased fluorescence.

4870' - 4880' --- 100% SANDSTONE: off white to light brown, some red/brown, fine to medium grained, well sorted, sub-rounded to rounded, quartzose, siliceous cement, minor ferruginous, trace silty matrix in parts.
 TR SILTSTONE: red/brown, blocky to sub-fissile, ferruginous, micaceous in parts.
 POROSITY: fair to good, excellent blue/white fluorescence to 80% of sample, streaming white cut - oil base mud contamination.

4880' - 4890' --- 100% SANDSTONE: off white to light brown, off white predominates, rare red/brown, medium grained, well sorted, sub-rounded to minor rounded, quartzose, siliceous cement, trace ferruginous.
 TR SILTSTONE: A/A, .
 POROSITY: fair to good, A/A.

4890' - 4900' --- 100% SANDSTONE: off white, minor light brown and light red/brown, rare intergranular, green/black staining, fine to medium grained, some coarse, poor sorting, sub-rounded, quartzose, siliceous cement, trace ferruginous.
 TR SILTSTONE: A/A.
 POROSITY: fair to good, A/A.

4900' - 4910' --- 90% SANDSTONE: off white to red/brown, fine to coarse grained, mostly coarse, coarse grains, rounded and frosted, fine to medium with ferruginous silty matrix, moderately poorly sorted, quartzose, siliceous cement.

10% SILTSTONE: red/brown, blocky, sub-fissile, ferruginous, micaceous.
POROSITY: fair to poor, fluorescence to 20%, white cut.

4910' - 4912' --- 90% SANDSTONE: 50% red brown, 50% off white, fine to medium and coarse grained, sub-angular, coarse grains rounded, very poor sorting, quartzose, ferruginous and siliceous cement, minor silty matrix in parts.

10% SILTSTONE: red/brown, blocky and sub-fissile, ferruginous, micaceous in parts.

TD @ 4912 FEET.