

APPENDIX 1

CUTTINGS SAMPLE DESCRIPTIONS

800' - 830'	---	100%	SANDSTONE: frosted to clear, white to red, fine to medium grained, sub-rounded to rounded, quartzose grains, red colour due to iron oxide staining, weak cement.
830' - 860'	---	100%	SANDSTONE: A/A.
860' - 890'	---	100%	SANDSTONE: A/A, but mostly medium grained.
890' - 920'	---	100%	SANDSTONE: A/A 800'.
920' - 950'	---	100%	SANDSTONE: A/A, 800' more ferruginous.
950' - 980'	---	100%	SANDSTONE: frosted to clear, white and red, fine and medium grained, sub-rounded to rounded quartzose grains, well sorted, weak siliceous and ferruginous cement, partly filling pore space. Good porosity.
980' - 1010'	---	100%	SANDSTONE: frosted to clear, white to brown to red, fine to medium grained, moderately sorted, sub-rounded to rounded quartzose grains, with occasional coarse rounded frosted quartzose grains - siliceous and ferruginous cement. Fair porosity.
1010' - 1040'	---	100%	SANDSTONE: frosted to clear, orange, fine to medium grained, moderately sorted, rounded quartzose grains with occasional coarse rounded frosted quartzose grains, ferruginous and siliceous cement. Fair porosity.
1040' - 1070'	---	100%	SANDSTONE: A/A but fine grained. Fair porosity.
1070' - 1100'	---	100%	SANDSTONE: A/A 1010' but fine grained and with 5% opaques. Fair porosity.
1100' - 1130'	---	100%	SANDSTONE: mainly clear, white to red, trace orange, fine grained, sub-rounded quartzose grains, with siliceous ferruginous cement 5% opaques. Fair porosity.
1130' - 1160'	---	100%	SANDSTONE: clear, pink to red-brown, fine grained, sub-rounded, with siliceous ferruginous cement and opaques. Fair porosity.
1160' - 1190'	---	100%	SANDSTONE: A/A with occasional coarse rounded quartzose grains (clear). Fair porosity.
1190' - 1220'	---	100%	SANDSTONE: mainly clear, pink to red-brown, with some white, brown, fine to medium grained, sub-rounded with siliceous and ferruginous cement, 5% coarse rounded clear quartzose grains - opaques. Fair porosity.

1220' - 1250'	---	100%	SANDSTONE: A/A.
1250' - 1280'	---	100%	SANDSTONE: A/A.
1280' - 1310'	---	100%	SANDSTONE: 50% white, 50% pink and red-brown, clear, fine to coarse grained, sub-rounded to rounded, siliceous cement in part ferruginous (red colouring) - opaques. Fair porosity.
1310' - 1340'	---	100%	SANDSTONE: mainly white, minor pink and red-brown, clear, fine to medium grained, sub-rounded to rounded, siliceous cement, partly ferruginous - opaques. Fair porosity.
1340' - 1370'	---	100%	SANDSTONE: A/A many (increase to 20%) fragments of white sandstone have a yellow mottling. Fair porosity.
1370' - 1400'	---	100%	SANDSTONE: white with yellow mottling, mainly fine to medium grained, sub-angular to sub-rounded, clear quartzose, siliceous cement. 20% fragments. Fair porosity.
At 1365'	---	-	3" rock fragment, white, fine-grained, sub-angular to sub-rounded, scattered medium round grains, finely bedded, cross bedded, minor graded bedding, pale yellow 1/8" wide mottling starts 3/16" each side of and parallel to thin (1/32") medium grained bed truncating cross bedding, ie. mottling is post deposition scattered opaques. Fair to poor porosity.
1400' - 1430'	---	100%	SANDSTONE: white with abundant yellow mottling, fine to medium grained, occasional coarse grained, sub-angular to rounded (coarse grained) siliceous cement partly ferruginous (yellow) opaques 30% fragments. Fair to poor porosity.
1430' - 1460'	---	100%	SANDSTONE: A/A. Poor porosity.
1460' - 1490'	---	100%	SANDSTONE: A/A but mostly white, rare yellow and pink mottling occasional clayey matrix, opaques 20% fragments. Poor porosity.
At 1448'	---		CORE from junk basket. SANDSTONE: hard white very finely bedded, fine to coarse grained, sub-angular to sub-rounded quartzose grains, siliceous cement, cross bedded, bedding at 10° to hole direction.

1490' - 1520'	---	100%	SANDSTONE: clear, white, fine to medium grained, sub-angular to sub-rounded, quartzose grains, sometimes clayey matrix, siliceous cement, rare yellow mottling, poorly sorted. Poor porosity.
1520' - 1530'	---	100%	SANDSTONE: A/A Poor porosity.
1530' - 1560'	---	100%	SANDSTONE: A/A but mostly fine grained.
1560' - 1590'	---	100%	SANDSTONE: clear, white, pink, red, fine to medium grained, a few coarse rounded quartzose grains, sub-angular to sub-rounded, poorly sorted, clayey, siliceous, cement 5% opaques. Fair to poor porosity.
1590' - 1620'	---	100%	SANDSTONE: A/A and fine to coarse grained.
		TR	SILTSTONE: red-brown, micaceous.
1620' - 1650'	---	90%	SANDSTONE: white, pink, red-brown, mauve, minor green sub-angular, fine grained, ferruginous, siliceous cement in part hematitic cement - few medium to coarse rounded quartzose grains.
		10%	SILTSTONE: red-brown to green sub-fissile, weakly dolomitic and micaceous, sandy.
1650' - 1680'	---	80%	SANDSTONE: A/A.
		20%	SILTSTONE: A/A. Poor Porosity.
1680' - 1710'	---	90%	SANDSTONE: A/A.
		10%	SILTSTONE: A/A. Poor Porosity.
1710' - 1740'	---	90%	SANDSTONE: A/A.
		10%	SILTSTONE: A/A. Poor Porosity.
1740' - 1770'	---	100%	SANDSTONE: A/A.
		TR	SILTSTONE: 5% A/A. Poor porosity.
1770' - 1800'	---	100%	SANDSTONE: 60% A/A, 40% red-brown, fine to very fine grained, sub-angular, silty, ferruginous, siliceous cement.
		TR	SILTSTONE: A/A (5%).
1800' - 1830'	---	100%	SANDSTONE: 80% red-brown, fine to very fine sub-angular, silty. 20% white mauve, pink green.
		TR	SILTSTONE: A/A. Fair porosity.
1830' - 1860'	---	100%	SANDSTONE: red-brown, white, fine grained, sub-angular to sub-rounded, silty, highly ferruginous partly siliceous cement.
		TR	SILTSTONE: A/A Fair porosity.

1860' - 1890'	---	100%	SANDSTONE: 90% A/A. 10% white, pink, red-brown, mauve, green. TR SILTSTONE: A/A.
1890' - 1920'	---	100%	SANDSTONE: A/A.
1920' - 1950'	---	80% 20%	SANDSTONE: A/A 1860'. SILTSTONE: brown, very sandy, weakly dolomitic, blocky minor green and red-brown, weakly micaceous and dolomitic.
1950' - 1980'	---	60% 40%	SANDSTONE: A/A. SILTSTONE: A/A.
1980' - 2010'	---	80% 20% TR	SILTSTONE: brown minor green to grey sandy to very sandy, blocky, weakly dolomitic. SANDSTONE: White, red-brown, minor green, fine grained, sub-angular to sub-rounded, red-brown is silty, with ferruginous cement white is clear with siliceous cement. DOLOMITE: grey-green sandy micaceous.
2010' - 2040'	---	50% 50% TR	SILTSTONE: A/A. SANDSTONE: A/A. DOLOMITE
2040' - 2070'	---	90% 10% TR	SILTSTONE: brown (50%) green (40%) mottled, sandy in part, sub-fissile to blocky, green, dolomitic and micaceous, brown weakly dolomitic in part. SANDSTONE: A/A 5% DOLOMITE: grey-green, sandy in part micaceous.
2070' - 2100'	---	70% 30% TR	SILTSTONE: 50% brown, 20% green, A/A. SANDSTONE: white fine grained, sub-angular, moderately sorted, siliceous cement in part, slightly micaceous, glauconitic. DOLOMITE
2100' - 2130'	---	80% 20% TR	SILTSTONE: A/A 50% brown, 30% green. SANDSTONE: A/A. DOLOMITE: (.5%)
2130' - 2160'	---	90% 10% TR	SILTSTONE: brown (50%), green (30%), grey (10%) mottled in part micaceous, sub-fissile, to blocky, shaley in part, green and grey dolomitic to very dolomitic, micaceous. SANDSTONE: A/A. DOLOMITE: A/A. (.5%)
2160' - 2190'	---	90% 10% TR	SILTSTONE: A/A. SANDSTONE: A/A. DOLOMITE: A/A.

2190' - 2220'	---	100%	SILTSTONE: brown 50%, green 40%, grey, grey-red, 10% A/A. SANDSTONE: A/A. DOLOMITE: A/A.
		TR	
		TR	
2220' - 2250'	---	100%	SILTSTONE: A/A. SANDSTONE: A/A. DOLOMITE: A/A.
		TR	
		TR	
2250' - 2280'	---	100%	SILTSTONE: brown 60%, green 30%, grey, grey-red, 10% A/A. DOLOMITE: A/A.
		TR	
2280' - 2297'	---	100%	SILTSTONE: A/A.
2297' - 2330'	---	100%	SILTSTONE: brown, red-brown, 20% green, mottled, weakly micaceous, weakly dolomitic in part, sub-fissile.
2330' - 2360'	---	100%	SILTSTONE: A/A - 30% green.
		TR	DOLOMITE: 5% grey, grey-green, finely crystalline, weakly micaceous, blocky, weakly calcareous in part, rare gypsum.
2360' - 2390'	---	100%	SILTSTONE: A/A.
		TR	DOLOMITE: A/A.
2390' - 2420'	---	100%	SILTSTONE: A/A, 40% green becoming dolomitic.
		TR	DOLOMITE: (5%) A/A.
2420' - 2450'	---	90%	SILTSTONE: 60% brown, red-brown, 30% green, A/A.
		10%	DOLOMITE: off white to grey-green, finely crystalline, weakly micaceous, blocky, weakly calcareous in part.
2450' - 2480'	---	90%	SILTSTONE: 60% brown, minor grey, grey-red, 30% green, grey green, sandy mottled, weakly dolomitic, sub-fissile - sub-blocky.
		10%	DOLOMITE
2480' - 2510'	---	100%	SILTSTONE: 80% brown, red-brown, sandy in part sub-fissile - sub-blocky, 30% grey to green, weakly micaceous & dolomitic grading to dolomite.
2510' - 2540'	---	100%	SILTSTONE: 90% brown, 10% green, A/A, with trace gypsum.
2540' - 2570'	---	100%	SILTSTONE: 70% brown, 30% green, rare grey, mauve.
		TR	DOLOMITE.
2570' - 2600'	---	100%	SILTSTONE: 90% brown, 10% green, A/A.

2600' - 2630'	---	100%	SILTSTONE: A/A, rare grey.
2630' - 2660'	---	100%	SILTSTONE: A/A, rare grey.
2660' - 2690'	---	90%	SILTSTONE: brown, argillaceous to finely arenaceous, weakly calcareous and dolomitic in part, occasional micro-micaceous, sub-fissile to blocky, soft to moderately hard.
		10%	DOLOMITE: pale green to grey green, finely crystalline, sub-fissile, occurs as thin intervals within the Siltstone.
2690' - 2720'	---	80%	DOLOMITE: 60% green to grey green, 20% grey variety, finely crystalline, sub-fissile to fissile, thinly bedded, occasionally pyrite.
		20%	LIMESTONE: off white to light grey, blocky medium to occasionally coarsely crystalline.
		TR	SILTSTONE: brown, A/A.
2720' - 2750'	---	100%	DOLOMITE: A/A.
		TR	LIMESTONE: A/A.
2750' - 2780'	---	90%	DOLOMITE: A/A.
		10%	LIMESTONE: A/A.
2780' - 2810'	---	90%	DOLOMITIC LIMESTONE: predominantly grey, sub-fissile to blocky, medium to finely crystalline occasional fine pyrite, grades to a dolomite.
		10%	LIMESTONE: grey to off white, crystalline.
2810' - 2840'	---	100%	DOLOMITIC LIMESTONE: light grey, grey white, sub-fissile to blocky, medium to finely crystalline, silty in part. Note: 10% Upper Stokes Siltstone cavings .
2840' - 2870'	---	100%	DOLOMITIC LIMESTONE: A/A. Silty to finely arenaceous (leaves a fine arenaceous silty deposit after digestion by HCL).
2870' - 2900'	---	100%	DOLOMITIC LIMESTONE: grey to light grey, sub-fissile, finely crystalline, moderately hard, silty in parts grading to a silty dolomite.
2900' - 2913'	---	100%	DOLOMITIC LIMESTONE: A/A, grading to a silty dolomite.
		TR	SANDSTONE: clear, medium grained, sub-rounded.
2913' - 2919'	---	100%	DOLOMITIC LIMESTONE: A/A.
		TR 5%	SANDSTONE: clear to off white to light grey intermixed with and grading to a brown dolomitic siltstone.

2919' - 2922' ---	60%	SILTSTONE (DOLOMITIC): grey to grey green, hard, blocky with fine quartzose and carbonate fragments.
	40%	SANDSTONE: clear to off white to grey, generally fine grained, sub-angular, occasional sub-rounded, siliceous and calcareous matrix. Rare medium to coarse sub-rounded clear grains. (Upper Stairway taken at 2920'). Very poor porosity and inferred permeability. No flare. No fluorescence.
2922' - 2930' ---	30%	SANDSTONE: off white to light grey, A/A.
	70%	SILTSTONE: grey green, dolomitic, grading to a fissile, hard, micro-micaceous shaley siltstone with contained lithics. Very poor porosity and permeability.
2930' - 2960' ---	50%	SANDSTONE: off white to light grey, fine grained, siliceous and calcareous matrix, occasional <11% medium grain, rounded, clear quartzose grain. Poor porosity and permeability.
	50%	SILTSTONE: grey green, dolomitic, calcareous with dolomitic limestone fragments.
2960' - 2990' ---	70%	SANDSTONE: clear to off white, to grey, very fine to medium grain, quartzose, siliceous with minor dolomite/calcite. 20% medium rounded grains with fair porosity, loosely cemented clear, occasional faceted grains.
	30%	SILTSTONE: A/A with increased pyrite as fine grains and granules. Poor to fair porosity.
2990' - 3020' ---	70%	SANDSTONE: clear to white, very fine grained, quartzose, sub-angular to sub-rounded, siliceous, with minor carbonate.
	30%	SILTSTONE: A/A. Poor porosity.
3020' - 3050' ---	80%	SANDSTONE: clear to white, fine to ultra fine grained - grades to siltstone (majority passes through fine -200 mesh sieve) sub-angular to sub-rounded, calcareous, argillaceous, siliceous.
	20%	SILTSTONE: grey, sub-fissile, pyritic, micro-micaceous. Very poor porosity.
3050' - 3080' ---	60%	SANDSTONE: A/A. clear, fine grained to very fine grained, sub-rounded with occasional rounded grain.
	40%	SILTSTONE: grey green to grey, finely pyritic, micro-micaceous, sub-fissile. Poor porosity.

3080' - 3100' ---	90% 10%	SANDSTONE: A/A. SILTSTONE: A/A. Flare on connection, less 1 minute - 3103'.
3100' - 3110' ---	90% 10%	SANDSTONE: A/A. SILTSTONE: A/A. (Mid stairway at 3110' estimated).
3110' - 3120' ---	60% 20% 20%	SANDSTONE: clear to off white, fine to very fine grained, sub-angular to sub-rounded quartzose, siliceous, weakly dolomitic. SHALE: light grey, fissile, micro-micaceous in part grading to Siltstone. SILTSTONE: grey, blocky, micaceous, pyritic in part. Poor - very poor porosity.
3120' - 3130' ---	50% 50% TR	SANDSTONE: A/A, occasional calcareous, strongly siliceous. SILTSTONE: light grey to grey, hard, blocky, arenaceous, pyritic, micro-micaceous, siliceous, quartzose. SHALE Very poor porosity.
3130' - 3160' ---	60% 20% 20%	SANDSTONE: off white to light grey, fine to very fine grained, sub-rounded to sub-angular, quartzose, siliceous, occasional calcareous. SILTSTONE: A/A. SHALE: light grey, fissile, hard, pyritic. Very poor porosity.
3160' - 3190' ---	80% 10% 10%	SILTSTONE: grey, blocky to sub-fissile, hard, arenaceous, pyritic, occasionally lithic and micro-micaceous. SANDSTONE: off white, fine grained, sub-angular to sub-rounded, quartzose, siliceous. SHALE: A/A. Very poor porosity.
3190' - 3220' ---	80% 10% 10%	SILTSTONE: A/A. SANDSTONE: A/A. SHALE: A/A.
3220' - 3250' ---	80% 20%	SILTSTONE: A/A with increase in pyrite. SANDSTONE: A/A. Very poor porosity.
3250' - 3280' ---	50% 40% 10%	SILTSTONE: grey, sub-fissile, hard to partly fissile, pyritic (disseminated, stringers and aggregates) occasionally micro-micaceous. SANDSTONE: off white, fine grained, sub-angular to sub-rounded, quartzose, siliceous. SHALE: light grey, hard, fissile. Very poor porosity.

3280' - 3310' ---	50%	SANDSTONE: clear to off white, fine grained sub-angular to sub-rounded, quartzose, siliceous, occasional weak calcareous/carbonate fragments and shale lithics.
	40%	SILTSTONE: grey, pyritic, hard, blocky to sub-fissile, arenaceous, siliceous.
	10%	SHALE: light grey, fissile, hard. Very poor porosity.
3310' - 3340' ---	90%	SILTSTONE: grey, pyritic, A/A.
	10%	SANDSTONE: A/A. Very poor porosity.
3340' - 3370' ---	60%	SILTSTONE: A/A.
	40%	SANDSTONE: A/A. Very poor porosity.
3370' - 3400' ---	70%	SILTSTONE: grey, sub-fissile to blocky, hard, arenaceous, fine disseminated pyrite, siliceous.
	30%	SANDSTONE: off white to light grey, fine grained, sub-angular to sub-rounded, quartzose, siliceous. Very poor porosity.
3400' - 3430' ---	70%	SILTSTONE: A/A.
	30%	SANDSTONE: A/A. Very poor porosity.
3430' - 3460' ---	80%	SILTSTONE: A/A.
	20%	SANDSTONE: A/A. Very poor porosity.
3460' - 3490' ---	80%	SANDSTONE: clear to off white, predominantly fine grained sub-angular, siliceous with 5% medium to large rounded grains, frosted, weakly cemented, occasionally faceted - fair porosity.
	20%	SILTSTONE: grey to occasional black, pyritic moderately hard to friable. Poor to fair porosity.
3490' - 3520' ---	100%	SANDSTONE: white, fine grained, sub-angular to sub-rounded, with occasional medium grain, rounded, frosted grain. Quartzose, siliceous. Poor porosity.
3520' - 3540' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: A/A. Poor porosity. Poor samples whilst sample catcher was modified.
3540' - 3560' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: A/A. Poor porosity. Poor samples whilst sample catcher was modified.

3560' - 3600' --- -		NO SAMPLE collected. New catcher only collected Silica Dust. Therefore assume this section is predominantly a fine sandstone. Samples starting to be collected from end of Blooey Line from 3600' to 3700'.
3600' - 3620' ---	80%	SANDSTONE: clear to off white, medium grain sub-rounded, sub-angular, frosted in part, quartzose, siliceous, large % \pm 50% rounded grains.
	20%	SILTSTONE: grey, pyritic, blocky to sub-fissile. Fair to good porosity.
3620' - 3640' ---	30%	SANDSTONE: A/A fine to coarse grained
	70%	SILTSTONE: A/A fine to nodular pyrite, occasional lithics. Fair porosity.
3640' - 3660' ---	70%	SANDSTONE: clear to off white, sub-rounded to sub-angular to rounded, medium grained, frosted, quartzose, loose grains, siliceous.
	30%	SILTSTONE: dark grey to grey, finely pyritic, with pyrite aggregates, blocky to sub-fissile. No cut or fluorescence. Fair porosity.
3660' - 3680' ---	90%	SANDSTONE: A/A fine to medium grained.
	10%	SILTSTONE: A/A. No cut or fluorescence. Fair porosity.
3680' - 3700' ---	70%	SANDSTONE: A/A fine to medium grained.
	30%	SILTSTONE: A/A. No cut or fluorescence. Fair porosity.
3700' - 3710' ---	50%	SANDSTONE: off white to light grey, to occasional pale brown, predominantly fine grained, to very fine grained, sub-angular to sub-rounded, siliceous, quartzose, in part weakly calcareous.
	50%	SILTSTONE: grey, dark grey to black (lithic grades to black shale), sub-fissile, pyritic. Very poor porosity, no show, 76 mcf/d at 3704 connection. (gas sample collected).
3710' - 3720' ---	90%	SILTSTONE: A/A.
	10%	SANDSTONE: A/A grading to arenaceous siltstone.
3720' - 3730' ---	100%	SILTSTONE: A/A with pisolitic pyrite - phosphate ? occasional limestone fragment calcareous matrix.

3730' - 3760' ---	80%	SILTSTONE: A/A.
	10%	LIMESTONE: white to buff, blocky, finely crystalline, with silty lithics.
	10%	SHALE: grey, fissile, pyritic.
3760' - 3790' ---	70%	SILTSTONE: grey, blocky, hard, pyritic, arenaceous grades to a sandy siltstone.
	30%	LIMESTONE: white to buff A/A with silty, pyrite and arenaceous lithics.
3790' - 3820' ---	60%	SILTSTONE: grey, blocky, calcareous, arenaceous, pyritic.
	30%	SILTSTONE: pale grey, fissile (shaley siltstone) pyritic, weakly calcareous.
	10%	LIMESTONE: A/A.
3820' - 3850' ---	100%	SILTSTONE: grey, blocky, pyritic, calcareous micromicaceous occasional sub-fissile. Note: one fragment of flint-block amorphous silica.
	TR	LIMESTONE: A/A.
3850' - 3880' ---	90%	SILTSTONE: A/A.
	10%	LIMESTONE: A/A.
3880' - 3900' ---		(No sample - valve blew out).
3900' - 3910' ---	80%	SILTSTONE: A/A.
	20%	LIMESTONE: A/A.
3910' - 3920' ---	40%	SILTSTONE: A/A.
	40%	SHALEY SILTSTONE: light grey to grey, fissile, pyritic.
	20%	LIMESTONE: A/A.
3920' - 3930' ---	80%	SILTSTONE: grey to light grey, blocky to fissile, calcareous, pyritic, micromicaceous grading in part to a shaley siltstone.
	20%	LIMESTONE: white to buff, A/A. (Drill break 3935'. Pacoota (P1) Top).
3930' - 3940' ---	60%	LIMESTONE: white, cream to buff, fine to coarse crystalline, with glauconite lithics.
	30%	SILTSTONE: A/A.
	10%	SANDSTONE: off white, very fine grained, quartzose, siliceous, calcareous, glauconitic. Very poor porosity.
3940' - 3950' ---	70%	SILTSTONE: grey, blocky, hard to moderately friable, arenaceous, pyritic, weakly calcareous grade to a silty sandstone.
	20%	LIMESTONE: A/A.
	10%	SANDSTONE: off white, very fine grained, quartzose, siliceous, slightly calcareous, weakly glauconitic. Very poor porosity.
	TR	SHALE: light grey fissile.

3950' - 3957' ---	60%	SILTSTONE: A/A.
	20%	SANDSTONE: A/A.
	20%	LIMESTONE: A/A.
		Very poor porosity. (Geolograph slipping and was replaced at 3957'. There Pacoota Top could be 3930' - 3940').
3957' - 3960' ---	80%	SILTSTONE: grey to dark grey, predominantly blocky, hard, very glauconitic, finely pyritic. 10% grades to a shaly siltstone A/A, sub-fissile to fissile, pyritic, . minor glauconite.
	20%	SANDSTONE: off white to light grey, quartzose, glauconitic with silty aggregates fine to very fine grained, very calcareous, weakly siliceous. Grades to a silty sandstone. Very poor porosity and inferred permeability. White cut and yellow fluorescence from Oil Base Mud.
3960' - 3970' ---	50%	SANDSTONE: white to light grey, occasionally clear, glauconitic, fine to medium grained, quartzose, siliceous, weakly calcareous, pyritic.
	50%	SILTSTONE: A/A. Very poor porosity and permeability.
3970' - 3980' ---	30%	SANDSTONE: A/A but fine to very fine grained.
	70%	SILTSTONE: A/A. Very poor porosity and permeability.
3980' - 3990' ---	60%	SANDSTONE: white to light grey, to light brown (latter discoloured by residual hydro- carbons giving a stronger white cut than the white or light grey variety). Note approx- imately 40% (discoloured pale brown); quartzose, siliceous, fine grained, pyritic, grades to silty sandstone.
	40%	SILTSTONE: A/A. Very poor porosity and permeability.
3900' - 4000' ---	70%	SANDSTONE: clear to white variety, 40% fine to medium grained, sub-angular to sub-rounded, quartzose, siliceous. Light grey to pale brown discoloured variety 30% fine grained A/A Both glauconitic.
	30%	SILTSTONE: grey to light grey, sub-fissile to fissile (light grey) grades to a Shale. Poor porosity.

4000' - 4010'	80%	SANDSTONE: 50% fine grained, off white to light grey with brownish (HC discolour ?) stain, sub-angular, quartzose, siliceous, glauconitic 30% white, to clear, medium grained, quartzose, sub-rounded, siliceous.
	20%	SILTSTONE/SHALE: grey to black (shale) pyritic, sub-fissile to fissile. Poor porosity.
4010' - 4020' ---	90%	SANDSTONE: 60% off white to light grey, fine grained A/A. 30% clear to white, medium to coarse grain, sub-rounded to rounded showing fair porosity, loose grains Pl-80 sand.
	10%	SILTSTONE/SHALE: A/A. Poor Porosity. Fair porosity on 30%.
4020' - 4030' ---	90%	SANDSTONE: 80% off white to grey, fine grain A/A. 10% clear to white, rounded A/A.
	10%	SILTSTONE-SHALE: A/A. Poor porosity. Fair porosity on 10%.
4030' - 4040' ---	80%	SANDSTONE: clear to white, to light grey, fine grained, sub-angular to sub-rounded, quartzose, siliceous with Trace to 5% medium grain sub-rounded to rounded grains.
	20%	SILTSTONE: grey to black, pyrite, sub-fissile, hard. Grades to a shaley siltstone. Poor porosity. Fair porosity on <5%.
4040' - 4050' ---	70%	SANDSTONE: A/A.
	30%	SILTSTONE: A/A. Poor porosity.
4050' - 4060' ---	60%	SANDSTONE: clear to light grey, fine grained, quartzose, siliceous. Occasional medium grained sub-angular fragments.
	40%	SILTSTONE: grey to black, pyritic, sub-fissile to fissile - grades to shaley siltstone. Very poor porosity.
4060' - 4070' ---	20%	SANDSTONE: A/A.
	80%	SILTSTONE: grey to black, pyritic (disemminated and as aggregates), sub-fissile to fissile grades to shaley Siltstone. Very poor porosity.
4070' - 4080' ---	60%	SANDSTONE: A/A.
	40%	SILTSTONE: A/A. Very poor porosity.

4080' - 4090' ---	70%	SANDSTONE: clear to light grey, fine grained, angular to sub-rounded, poorly sorted with occasional medium grain, pyrite granule and shaley lithic, quartzose, siliceous.
	30%	SILTSTONE: A/A. Very poor porosity.
4090' - 4100' ---	60%	SANDSTONE: A/A.
	40%	SILTSTONE: A/A. Very poor porosity.
4100' - 4110' ---	50%	SANDSTONE: off white to light grey, fine grained, sub-angular, quartzose, siliceous, with some pyrite, and silty lithics.
	50%	SILTSTONE: grey, sub-fissile to fissile, lithic grades to a silty shale. Pyritic - disseminated and aggregates. Very poor porosity.
4110' - 4120' ---	70%	SANDSTONE: clear to off white, fine to medium grained, sub-rounded to sub-angular, poorly sorted, quartzose, siliceous.
	30%	SILTSTONE: Grey A/A. Poor to fair porosity.
4120' - 4130' ---	90%	SANDSTONE: A/A note poor sorting of medium to coarse rounded grains in fine grain, sub-angular sand, shale & pyritic lithics.
	10%	SILTSTONE: grey to black, more shaley. Poor to fair porosity.
4130' - 4140' ---	80%	SANDSTONE: A/A.
	20%	SILTSTONE: A/A. Poor porosity.
4140' - 4150' ---	80%	SANDSTONE: A/A.
	20%	SILTSTONE: A/A. Poor porosity.
4150' - 4160' ---	30%	SANDSTONE: off white to light grey, very fine to fine grained, sub-angular to sub-rounded quartzose, siliceous, contains shale and silty lithics, pyritic in part.
	70%	SILTSTONE: grey to black, sub-fissile to fissile, hard, pyritic, arenaceous grades to a silty sandstone. Very poor porosity.
4160' - 4170' ---	80%	SANDSTONE: clear to off white, stained brown/black, pitted by residual hydrocarbons, sub-rounded, medium grained, quartzose, siliceous - generally more friable with improved inferred porosity.
	20%	SILTSTONE: A/A. Fair porosity whiteyellow fluorescence strong white cut.

4170' - 4180' ---	40%	SANDSTONE: A/A but fine grained, medium grains \pm 10%, less friable.
	60%	SILTSTONE: grey, pyritic, fissile to sub-fissile, shaley in part. Poor to fair porosity.
4180' - 4190' ---	80%	SANDSTONE: clear to white, to light grey, strongly stained brown and pitted with black residual hydrocarbons, sub-rounded, quartzose, siliceous, medium grained.
	20%	SILTSTONE: grey to black, arenaceous in part, pyritic, sub-fissile - grades to a shaley siltstone. Poor to fair porosity, strong white cut and yellow fluorescence.
4190' - 4200' ---	50%	SANDSTONE: off white, fine grained, occasionally medium grained, quartzose, siliceous, sub-angular to sub-rounded. Minor brown staining.
	50%	SILTSTONE: A/A- Poor porosity.
4200' - 4210' ---	50%	SANDSTONE: clear to off white, with mainly medium grain, sub-rounded, quartzose, fragments and 10-20% loose grains. Remainder fine grained, sub-angular, siliceous.
	50%	SILTSTONE: A/A Poor to fair porosity.
4210' - 4220' ---	80%	SANDSTONE: clear to light grey, heavily stained to black/brown, also pitted by residual hydrocarbons, fine to medium grained, sub-angular to sub-rounded, quartzose, siliceous, strongly cemented.
	20%	SILTSTONE: grey, fissile, shaley in part, to sub-fissile. Poor porosity. Note heavily stained with residual H/C.
4220' - 4230' ---	70%	SANDSTONE: clear to light grey, heavily stained brown to black, pitted by residual hydrocarbons, fine to medium grained, sub-angular to sub-rounded, quartzose, siliceous.
	30%	SILTSTONE: grey, sub-fissile, fossil 'scalitfid' markings. Poor porosity. Residual H/C staining.
4230' - 4240' ---	90%	SANDSTONE: clear to light grey, heavily stained brown to black by residual hydrocarbons, fine sub-angular to medium/coarse sub-rounded (P1-280 sand) the latter usually clear grains. Large rounded pyrite nodules (rolled pyrite aggregates) quartzose, siliceous.

4230' - 4240' --- (CONT'D)	10%	SILTSTONE/SHALE: grey, gradational to shale, pyritic, fissile to sub-fissile. Fair porosity on 10% white and yellow fluorescence. Streaming white cut (P1-280).
4240' - 4250' ---	90%	SANDSTONE: clear to off white, heavily stained brown and black by hydrocarbons. Medium grained, sub-rounded, quartzose, siliceous, pyritic in part.
	10%	SILTSTONE/SHALE: A/A Fair porosity on 50% (P1-280 sand) white and yellow fluorescence, streaming white cut.
4250' - 4260' ---	70%	SANDSTONE: clear to grey, A/A with an increase in fine grained, off white, sub-angular sand (30%). Crystalline pyrite noted in coarse aggregates.
	30%	SILTSTONE: A/A. Fair porosity on 10%. Generally poor porosity.
4260' - 4270' ---	90%	SANDSTONE: clear, off white to grey, heavily stained, brown and pitted black by hydrocarbons, fine to medium grained, predominantly sub-angular, occasionally sub-rounded, quartzose, siliceous, some shale lithics. Poor porosity generally, pyritic in part.
	10%	SILTSTONE: A/A Note rounded, coarse, pyrite aggregates. Poor porosity. Fair porosity on 10%.
4270' - 4280' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: A/A. Poor porosity.
4280' - 4290' ---	90%	SANDSTONE: clear to light grey, A/A predominantly fine grained, sub-angular, quartzose, siliceous. Some brown hydrocarbon staining and black pitted H/C, also black, angular shaley lithics.
	10%	SHALEY/SILTSTONE: grey to black, pyrite, fissile to sub-fissile. Poor porosity.

4290' - 4300' ---	90%	SANDSTONE: clear, to off white to light grey, discoloured brown, black, by hydrocarbons, mainly fine grained, sub-angular to sub-rounded, quartzose, siliceous with 20% medium to coarse, rounded-subrounded grains, often frosted, sandstone poorly sorted.
	10%	SILTSTONE: grey, pyritic with pyrite aggregates, subfissile to fissile grading to Shale, arenaceous. Poor porosity.
4300' - 4310' ---	90%	SANDSTONE: A/A hydrocarbons discoloured.
	10%	SILTSTONE: A/A. Poor porosity.
4310' - 4320' ---	80%	SANDSTONE: A/A hydrocarbons discoloured.
	20%	SILTSTONE: A/A. Poor porosity.
4320' - 4330' ---	70%	SANDSTONE: clear to light grey, brown and black (bituminous) discolour, fine grained, poorly sorted with intermixed medium to coarse rounded grains, subangular to sub-rounded, quartzose, siliceous. Poor Porosity.
	30%	SILTSTONE: A/A.
4330' - 4340' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: shaley Poor porosity.
4340' - 4350' ---	90%	SANDSTONE: clear, predominantly off white to light grey. Occasional brown discolour, but predominantly black bituminous, pitted inclusions mainly fine grained subangular, with medium to coarse rounded grains, enclosed by fine grain sand - very poorly sorted, quartzose, siliceous.
	10%	SHALEY SILTSTONE: grading to arenaceous siltstone, subfissile to fissile. Poor porosity.
4350' - 4360' ---	80%	SANDSTONE: A/A (note 50% off white, fine grain not discoloured sand - very low porosity)
	20%	SHALEY SILTSTONE: A/A. Very poor porosity.
4360' - 4370' ---	90%	SANDSTONE: A/A (70% off white fine to medium grain, not discoloured, quartzose, strong siliceous matrix).
	10%	SHALEY SILTSTONE: A/A pyritic in part. Very poor porosity.
4370' - 4380' ---	100%	SANDSTONE: A/A.
	TR	SHALEY SILTSTONE: A/A. Very poor porosity.

4380' - 4390' ---	90%	SANDSTONE: clear to off white to light grey, (predominantly clear to off white). Poorly sorted, fine with high % of rounded medium to coarse grains, in fine grain, subangular sand. Quartzose siliceous. Some grains frosted and bluish.
	10%	SHALEY SILTSTONE: A/A. Poor porosity.
4390' - 4400' ---	100%	SANDSTONE: A/A.
	TR	SHALEY SILTSTONE: A/A. Very poor porosity.
4400' - 4410' ---	70%	SANDSTONE: off white to light grey, fine to medium grained, poorly sorted, subangular to subrounded, quartzose, siliceous with contained shale and siltstone lithics, occasionally pyrite.
	30%	SHALEY SILTSTONE: grey, fissile to subfissile, finely pyritic, arenaceous. Very poor porosity.
4410' - 4420' ---	80%	SANDSTONE: A/A.
	20%	SHALEY SILTSTONE: A/A. Very poor porosity.
4420' - 4430' ---	90%	SANDSTONE: off white to light grey, occasionally clear, fine to medium grained, subangular to subrounded, quartzose, siliceous, weakly GLAUCONITIC pyritic. weakly calcareous.
	10%	SILTSTONE: A/A. Very poor porosity.
4430' - 4440' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: A/A. Very poor porosity.
4440' - 4450' ---	70%	SANDSTONE: off white to grey, glauconitic, fine to medium grained, subangular to subrounded, quartzose, siliceous, lithic grades to a sandy -Siltstone.
	30%	SILTSTONE: grey, pyritic, subfissile to fissile, frequently coats sandstone surfaces. Very poor porosity.
4450' - 4460' ---	80%	SANDSTONE: A/A, weakly calcareous.
	20%	SILTSTONE: A/A. Poor porosity.

4460' - 4470' ---	90%	SANDSTONE: clear to light grey, strongly glauconitic, fine to medium grain, sub-angular to subrounded, occasionally faceted pyritic in part, calcareous and dolomitic, also lithic siltstone/shale fragments. Minor light brownish (hydrocarbon) discolouration. Laminae fracture.
	10%	SILTSTONE: A/A. Poor Porosity.
4470' - 4480' ---	90%	SANDSTONE: A/A (note rock has a laminae fracture) siliceous, calcareous and dolomitic. Occasional coarse clear grain.
	10%	SILTSTONE: A/A. Poor porosity.
4480' - 4490' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: A/A. Poor porosity.
4490' - 4500' ---	90%	SANDSTONE: A/A.
	10%	SILTSTONE: A/A. Poor porosity.
4500' - 4510' ---	100%	SANDSTONE: 80% clear to white to cream-white, medium grained, subrounded, quartzose, siliceous, occasionally fine grained, laminae fracture, generally poor porosity. 20% clear to light grey, fine to medium grained, sub-angular to subrounded, glauconitic, pyritic, mainly as crystalline aggregates, quartzose, siliceous, calcareous, contains silty lithics. Poor porosity, white fluorescence and cut due to oil base mud.

ESTIMATED PACOOTA (P3) TOP AT 4501'

4510' - 4520' ---	100%	SANDSTONE: clear to cream white, A/A.
	TR	Grey glauconitic sandstone. Poor porosity to poor-fair porosity.
4520' - 4530' ---	100%	SANDSTONE: A/A, but siliceous bonding stronger, fewer loose grains and slower penetration rate.
	TR	Grey glauconitic sandstone. Very poor porosity.
4530' - 4540' ---	100%	SANDSTONE: A/A. Very poor porosity.
4540' - 4550' ---	100%	SANDSTONE: clear to white, occasionally cream, fine to predominantly medium grain, subrounded, to subangular, quartzose, siliceous. Poor porosity.

- 4550' - 4560' --- 90% SANDSTONE: A/A.
10% SILTSTONE: light grey to grey, friable, subfissile, arenaceous, pyritic, grading to a poorly sorted silty Sandstone. Poor porosity.
- 4560' - 4570' --- 90% SANDSTONE: clear, off white to cream, mainly medium grained (occasionally fine grained) subangular, predominantly subrounded. Quartzose, siliceous.
10% SILTSTONE: light grey, subfissile, finely pyritic, shaley in part. Poor porosity.
- 4570' - 4577' --- 100% SANDSTONE: A/A.
Poor Porosity.

TRIP FOR BIT NO. 18

- 4577' - 4590' --- 90% SANDSTONE: A/A.
10% SILTSTONE: A/A.
(Note 10% glauconitic sandstone cavings). Poor porosity.
- 4590' - 4600' --- 100% SANDSTONE: clear to off-white to cream, mainly medium grained, occasionally coarse grain and fine grain, subangular to subrounded. Quartzose. Siliceous, minor pyrite as aggregates. Occasionally discoloured grain.
TR SILTSTONE: light grey, finely pyritic in part subfissile. Poor porosity.
- 4600' - 4610' --- 100% SANDSTONE: clear to cream, occasional grains of pale pink, light brown with shale/siltstone lithics, slightly ferruginous, fine to medium grain, subangular - subrounded, quartzose, siliceous, occasionally pyrite. P3-120 sand ?
TR SILTSTONE: A/A.
Poor porosity. Yellow & white fluorescence and strong white cut due to oil base mud - washes off.
- 4610' - 4620' --- 100% SANDSTONE: clear to cream white, 80% grains coloured, pale light pink to pale yellow-brown, fine to medium grain, subangular to subrounded, quartzose, siliceous (rare haematitic colour). Lithic in parts. Poor porosity. Fluorescence and cut A/A.
- 4620' - 4630' --- 100% SANDSTONE: A/A strongly siliceous.
TR SHALEY SILTSTONE
Poor visible porosity.
Fluorescence and cut A/A.

4630' - 4635'	---	90%	SANDSTONE: A/A. Note pale pink red, and grey shaley siltstone lithics. Pale yellow-brown discolour A/A. Strongly siliceous.
		10%	SILTSTONE: pale grey to dark grey, sub-fissile, finely pyritic. Poor visible porosity. Fluorescence and cut A/A.
4635' - 4640'	---	100%	SANDSTONE: A/A Clear to mainly pale cream yellow, with widespread pale yellow-brown discolouration, fine to mainly medium grain subangular to subrounded. Quartzose, siliceous pale pink and grey silty lithics. Slightly more friable with more loose grains, occasionally clear coarse grain.
		TR	SILTSTONE Poor to poor-fair porosity. Yellow-white fluorescence, white cut, 2nd wash in chloro-thene gave residual yellow fluorescence and weak white cut.
4640' - 4645'	---	100%	SANDSTONE: A/A.
		TR	SILTSTONE Poor to poor-fair porosity. Fluorescence and cut A/A.
4645' - 4650'	---	90%	SANDSTONE: A/A.
		10%	SILTSTONE: pale grey to grey, subfissile, finely pyritic. Poor porosity, yellow and white fluorescence and strong white cut believed due to oil base mud.
4650' - 4655'	---	100%	SANDSTONE: A/A.
		TR 5%	SILTSTONE: A/A. Poor porosity, yellow & white fluorescence and strong white cut due to oil base mud.
4655' - 4660'	---	100%	SANDSTONE: A/A.
		TR	SILTSTONE: A/A. Sample contaminated.
4660' - 4665'	---	100%	SANDSTONE: quartzose, sublithic, white to buff, minor grey specks, hard to moderately hard, fine to medium grained, subrounded, moderately sorted, quartzose, quartz cement, white matrix in part.
		TR	SILTSTONE: A/A. Poor to moderate porosity, white fluorescence, white cut from oil based mud, slow white crush cut. Light brown stain.

4665' - 4670'	---	90%	SANDSTONE: A/A.
		10%	SILTSTONE: grey, subfissile, subarenaceous. Poor to moderate porosity. Fluorescence and cut A/A. Light brown stain.
4670' - 4675'	---	90%	SANDSTONE: A/A, minor increase in porosity.
		10%	SILTSTONE: A/A. Poor to moderate porosity. Fluorescence and cut A/A. Light brown stain.
4675' - 4680'	---	100%	SANDSTONE: quartzose, white with light brown hydrocarbon stain, fine to medium grained with minor medium grains, subrounded, moderately sorted, quartz cement, white cryptocrystalline matrix. (Fracture subfissile).
		TR 5%	SILTSTONE: grey, arenaceous in part subfissile. Poor to moderate porosity, light brown stain. Cut and fluorescence A/A.
4680' - 4685'	---	60%	SANDSTONE: quartzose, white, little to no light brown stain, fine grained, moderately sorted, subangular, siliceous cement.
		40%	SILTSTONE: grey, dark grey, subfissile, micromicaceous. Very poor porosity.
4685' - 4690'	---	80%	SANDSTONE: quartzose, A/A.
		20%	SILTSTONE: A/A. Very poor porosity.
4690' - 4695'	---	70%	SANDSTONE: A/A, medium and fine grained.
		30%	SILTSTONE: A/A. Poor porosity.
4695' - 4700'	---	70%	SANDSTONE: A/A, fine to medium grade. Grading to a grey very fine sublithic sandstone.
		30%	SILTSTONE: A/A, grading to very fine grey sandstone. Poor porosity, minor light brown stain.
4700' - 4705'	---	100%	SANDSTONE: quartzose, white, small light brown stain, medium to fine grained, moderately sorted, subrounded, siliceous cement. Abundant fissile chips.
		TR	SILTSTONE: A/A. Poor porosity, some moderate porosity, light brown stain. Fluorescence and cut from oil mud.

4705' - 4710'	---	100%	SANDSTONE: A/A, medium to fine grained, smooth, coarse. TR SILTSTONE: A/A. Porosity A/A.
4710' - 4715'	---	100%	SANDSTONE: quartzose, white, buff, slight brown stain, medium grained, smooth, fine grained, moderately sorted, subrounded, siliceous cement. Abundant fissile chips. TR SILTSTONE: A/A. Minor moderate porosity, poor to moderate porosity, light brown stain.
4715' - 4720'	---	80%	SANDSTONE: quartzose, white, A/A, but fine grained and no stain.
		20%	SILTSTONE: arenaceous, blocky to subfissile, grey. Very poor porosity.
4720' - 4725'	---	100%	SANDSTONE: quartzose, white, cream, abundant light brown stain, medium grained and fine grained, moderately sorted, subrounded, siliceous cement. Abundant fissile sandstone chips. Fast drill break, abundant brown stain. Moderate porosity.
4725' - 4730'	---	90%	SANDSTONE: quartzose, fine to medium grained, moderately sorted, subrounded, hard, siliceous cement, grading to grey siltstone in part.
		10%	SILTSTONE: grey and smooth dark grey, subfissile mostly arenaceous. Very poor porosity, minor light brown stain.
4730' - 4735'	---	90%	SANDSTONE: A/A, fine grained.
		10%	SILTSTONE: A/A. Very poor porosity, rare light brown stain.
4735' - 4740'	---	100%	SANDSTONE: quartzose, white, buff, fine and medium grained, moderately sorted, subrounded, smooth friable mainly hard, siliceous cement. Poor to moderate porosity, light brown stain.
4740' - 4745'	---	100%	SANDSTONE: A/A. Moderate porosity, light brown stain.
4745' - 4750'	---	100%	SANDSTONE: A/A.
	TR		SILTSTONE: A/A. Porosity A/A.
4750' - 4755'	---	100%	SANDSTONE: A/A. Porosity A/A.

4755' - 4760'	---	100%	SANDSTONE: A/A with white fine very siliceous sandstone. HTR: SILTSTONE: A/A. NB. Rare red haematitic patches. Poor to moderate porosity, patchy light brown stain.
4760' - 4765'	---	90%	SANDSTONE: white, clear, quartzose fine, medium and medium to coarse grained, moderately sorted, siliceous cement.
		10%	SILTSTONE: A/A, minor grey green, arenaceous. Very poor porosity.
4765' - 4770'	---	100%	SANDSTONE: A/A, 80% medium to coarse grained. Red spots more evident, minor green minerals. Very poor porosity.
4770' - 4775'	---	100%	SANDSTONE: quartzose, white, clear, medium to coarse grained, smooth fine grained, moderately to well sorted, subrounded, siliceous cement. Red sideritic spots. Very poor porosity.
4775' - 4780'	---	100%	SANDSTONE: A/A, medium grained, sideritic spots. Poor porosity.
Run D.S.T. No. 3 4736' - 4786'.			
4780' - 4790'	---	100%	SANDSTONE: A/A, medium grained, smooth coarse grained.
		HTR	SILTSTONE: dark grey-brown subfissile. Poor porosity.
4790' - 4800'	---	100%	SANDSTONE: white, clear, quartzose, sideritic, medium and fine grained, subrounded, smooth coarse grained, rounded, abundant siliceous cement, minor haematite.
		TR	SILTSTONE: grey, green, friable. Very poor porosity, minor brown stain.
4800' - 4810'	---	100%	SANDSTONE: A/A.
		TR	SILTSTONE: A/A. Very poor porosity, minor light brown stain.
4810' - 4820'	---	100%	SANDSTONE: A/A, becoming coarser. Poor to moderate porosity, minor light brown stain.
4820' - 4830'	---	100%	SANDSTONE: A/A, fine medium and coarse grained ≈ 20% coarse grained, very siliceous. Poor porosity.
4830' - 4840'	---	100%	SANDSTONE: A/A.
4840' - 4850'	---	100%	SANDSTONE: A/A.

TOTAL DEPTH AT 4853 FEET.