



Apache Northwest Pty Ltd
Cuttings Descriptions Report

Well Name :		Speke South-1		Print Date		4/18/2008	
Wellsite Geologist(s) :				C Forster M Ngatai			
Interval (m)	%	Lithology / Show Descriptions		Ca (%)	Mg (%)		
Main							
903.0 - 906.0	100	CEMENT: 3.0 meters new formation drilled for F.I.T.					
906.0 - 910.0	90	CEMENT:					
	8	CALCARENITE: very light grey, very argillaceous in part, quartz grains in part, calcite grains in part, soft to very hard, sub blocky.					
	2	CALCILUTITE: dark yellowish orange, very light grey, very argillaceous in part, quartz grains in part, calcite grains in part, locally grades to calcarenite, firm, sub blocky.					
910.0 - 915.0	50	CEMENT:					
	48	CALCAREOUS SILTSTONE: medium light grey, light grey, very argillaceous, very fine glauconite specks in part, occasional very fine quartz grains, trace lithics, trace foraminifera spines, grades to CALCISILTITE, hard to trace very hard, sub blocky to blocky					
	2	CALCILUTITE: as above, forams.					
915.0 - 920.0	90	CALCAREOUS SILTSTONE: light grey to medium grey, very argillaceous, very fine glauconite specks, occasional very fine quartz grains, trace lithics, trace foraminifera spines, grades to ARGILLICEOUS CALCISILTITE, hard to trace very hard, sub blocky to blocky					
	10	CEMENT:					
	1	CALCILUTITE: dark yellowish orange, cryptocrystalline, firm, sub blocky.					
920.0 - 925.0	70	CALCAREOUS SILTSTONE: light grey to medium grey, very argillaceous, very fine glauconite specks, occasional very fine quartz grains, trace lithics, trace foraminifera spines, grades to ARGILLICEOUS CALCISILTITE, hard to trace very hard, sub blocky to blocky					
	30	CALCAREOUS CLAYSTONE: medium grey, firm, sub blocky to blocky					
925.0 - 940.0	75	CALCAREOUS SILTSTONE: as above					
	25	CALCAREOUS CLAYSTONE: as above					
940.0 - 950.0	85	CALCAREOUS SILTSTONE: medium light grey to medium dark grey, speckled colouration with white kaolinitic clay, very argillaceous, grades to CALACAREOUS CLAYSTONE, very fine glauconite specks, occasional very fine quartz grains, soft to firm, sub blocky to blocky					
	15	CALCAREOUS CLAYSTONE: medium dark grey, soft to firm, silty, sub blocky to blocky					
950.0 - 960.0	90	CALCAREOUS SILTSTONE: as above, increasing glauconite in part, trace glauconitic layers, common liberated very fine quartz					
	10	CALCAREOUS CLAYSTONE: as above					
960.0 - 965.0	75	CALCAREOUS SILTSTONE: medium light grey to medium dark grey, speckled colouration with white kaolinitic clay, very argillaceous, grades to CALACAREOUS CLAYSTONE, very fine glauconite, occasional very fine quartz, trace nodular pyrite, trace calcite specks, very soft to firm, trace hard, sub blocky to blocky.					
	25	CALCAREOUS CLAYSTONE: medium dark grey, soft to firm, silty, sub blocky to blocky					
965.0 - 970.0	73	CALCAREOUS SILTSTONE: as above					
	25	CALCAREOUS CLAYSTONE: as above					
	2	CALCILUTITE: yellowish grey, very light grey, cryptocrystalline, hard, sub blocky					
970.0 - 980.0	90	CALCAREOUS SILTSTONE: as above					

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
970.0 - 980.0	10	CALCAREOUS CLAYSTONE: as above		
980.0 - 990.0	83	CALCAREOUS SILTSTONE: medium light grey to medium dark grey, speckled colouration with white kaolinitic clay, very argillaceous, grades to CALCAREOUS CLAYSTONE , very fine glauconite in part, calcite specks, trace occasional very fine quartz, very soft to hard, sub blocky to blocky.		
	15	CALCAREOUS CLAYSTONE: medium dark grey, soft to firm, silty, sub blocky to blocky		
	2	CALCILUTITE: yellowish grey, very light grey, cryptocrystalline, forams, hard, sub blocky		
990.0 - 1000.0	70	CALCAREOUS CLAYSTONE: medium light grey to medium dark grey, speckled with white kaolinitic clay, silty, trace very fine glauconite in part, calcite specks, soft to moderately hard, sub blocky to blocky.		
	26	CALCAREOUS SILTSTONE: as above		
	4	CALCILUTITE: as above		
1000.0 - 1010.0	80	CALCAREOUS SILTSTONE: medium light grey to medium dark grey, speckled colouration with white kaolinitic clay, very argillaceous, glauconite specks and grains, firm to predominantly moderately hard, sub blocky to blocky.		
	15	CALCAREOUS CLAYSTONE: as above		
	5	CALCILUTITE: as above,		
1010.0 - 1020.0	75	CALCAREOUS SILTSTONE: as above, predominantly more medium grey in colour, generally more silty in appearance		
	20	CALCAREOUS CLAYSTONE: as above, trace medium dark grey.		
	5	CALCILUTITE: as above, dolomitic in part,		
1020.0 - 1030.0	75	CALCAREOUS SILTSTONE: medium grey medium dark grey, increase in argillaceous content, grades to CALCAREOUS CLAYSTONE , decrease in glauconite content, soft to firm		
	20	CALCAREOUS CLAYSTONE: medium light grey to medium dark grey, speckled with white kaolinitic clay, silty, trace very fine glauconite in part, calcite specks, soft to moderately hard, sub blocky to blocky.		
	5	CALCILUTITE: as above, common fossil fragments		
1030.0 - 1040.0	80	CALCAREOUS SILTSTONE: as above, occasional forams, very argillaceous grading to CLAYSTONE		
	20	CALCAREOUS CLAYSTONE: medium grey, silty, trace glauconite specks, firm, sub blocky		
1040.0 - 1050.0	90	CALCAREOUS SILTSTONE: as above		
	9	CALCAREOUS CLAYSTONE: as above		
	1	CALCILUTITE: as above		
1050.0 - 1060.0	90	CALCAREOUS SILTSTONE: medium grey to medium dark grey, grades to CALCAREOUS CLAYSTONE , occasional fossil fragments, common glauconite specks, firm to trace hard, sub blocky		
	10	CALCAREOUS CLAYSTONE: medium dark grey, silty, trace glauconite specks, firm, sub blocky		
1060.0 - 1070.0	90	CALCAREOUS SILTSTONE: as above		
	10	CALCAREOUS CLAYSTONE: as above		
1070.0 - 1080.0	60	CALCAREOUS SILTSTONE: as above		
	30	CALCILUTITE: light grey, trace brownish medium grey, common fossil fragments, moderately argillaceous, cryptocrystalline, hard, sub blocky		
	10	CALCAREOUS CLAYSTONE: as above		
1080.0 - 1090.0	60	CALCAREOUS SILTSTONE: as above		
	20	CALCAREOUS CLAYSTONE: as above becoming slightly dark greenish grey		
	20	CALCILUTITE: light grey, trace brownish medium grey, common fossil fragments, moderately argillaceous, cryptocrystalline, hard, sub blocky		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1090.0 - 1100.0	75 15 10	CALCAREOUS SILTSTONE: medium grey to medium dark grey, grades to CALCAREOUS CLAYSTONE, occasional fossil fragments, common glauconite specks, soft to trace hard, sub blocky CALCILUTITE: as above CALCAREOUS CLAYSTONE: light grey to medium light grey, silty, fossil fragments, soft to moderately hard, sub blocky		
1100.0 - 1110.0	99 1	CALCAREOUS SILTSTONE: light grey to medium dark grey, white kaolinitic clay in part, very argillaceous, very fine glauconite, occasional very fine quartz, firm to moderately hard in part, sub blocky to blocky. CALCILUTITE: as above		
1110.0 - 1120.0	59 40 1	CALCAREOUS CLAYSTONE: medium light grey to medium dark grey, silty, common fossil fragments, soft to moderately hard, sub blocky CALCAREOUS SILTSTONE: as above CALCILUTITE: as above		
1120.0 - 1130.0	40 40 20	CALCAREOUS SILTSTONE: as above CALCAREOUS CLAYSTONE: as above CALCILUTITE: light grey, common fossil fragments, moderately argillaceous, cryptocrystalline, hard, sub blocky		
1130.0 - 1140.0	90 5 5	CALCAREOUS SILTSTONE: medium light grey, light brownish grey, very argillaceous, common glauconite specks, soft to firm, sub blocky CALCILUTITE: as above CALCAREOUS CLAYSTONE: as above		
1140.0 - 1150.0	95 5	CALCAREOUS SILTSTONE: medium grey, very argillaceous, common glauconite specks, soft to firm, sub blocky CALCAREOUS CLAYSTONE: medium light grey to medium dark grey, silty, common fossil fragments, soft to moderately hard, sub blocky		
1150.0 - 1160.0	90 10	CALCAREOUS SILTSTONE: medium grey, very argillaceous, common glauconite specks, trace black carbonaceous? specks, trace very fine quartz, soft to firm, sub blocky CALCAREOUS CLAYSTONE: as above		
1160.0 - 1170.0	90 10	CALCAREOUS SILTSTONE: as above, trace forams CALCAREOUS CLAYSTONE: medium light grey to medium dark grey, silty, firm to moderately hard, sub blocky		
1170.0 - 1180.0	95 4 1	CALCAREOUS SILTSTONE: medium light grey to medium dark grey, light brownish grey, very argillaceous, common glauconite specks, trace forams, firm to moderately hard, sub blocky to blocky CALCAREOUS CLAYSTONE: medium dark grey, silty, firm to moderately hard, sub blocky CALCISILTITE: light yellowish grey, white, hard, friable in part, sub angular		
1180.0 - 1190.0	95 4 1	CALCAREOUS SILTSTONE: as above CALCAREOUS CLAYSTONE: medium light grey to medium dark grey, silty, firm to moderately hard, sub blocky CALCISILTITE: as above		
1190.0 - 1200.0	89 10 1	CALCAREOUS SILTSTONE: medium light grey to medium dark grey, light brownish grey, very argillaceous, common glauconite specks, trace forams, sandy in part grading towards CALCAREOUS SILTY ARGILLICEOUS SANDSTONE, firm to moderately hard, sub blocky to blocky CALCAREOUS CLAYSTONE: medium dark grey, silty, firm to moderately hard, sub blocky CALCISILTITE: light yellowish grey, white, hard, friable in part, sub angular		
1200.0 - 1210.0	95	CALCAREOUS SILTSTONE: light brownish grey, medium light grey to medium grey, argillaceous, glauconitic, common very fine quartz, grading towards CALCAREOUS SILTY SANDSTONE, firm to trace moderately hard, sub blocky to blocky		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1200.0 - 1210.0	5	CALCAREOUS CLAYSTONE: as above		
1210.0 - 1220.0	100	NOT RECOVERED: MISSED		
1220.0 - 1230.0	95	CALCAREOUS SILTSTONE: medium grey to medium dark grey, occasional light brownish grey, argillaceous, common glauconite, common very fine to fine quartz, firm to trace moderately hard, sub angular to sub blocky		
	5	CALCAREOUS CLAYSTONE: medium dark grey, silty, firm to moderately hard, sub blocky		
1230.0 - 1240.0	95	CALCAREOUS SILTSTONE: as above, trace greyish orange fossil fragment		
	5	CALCAREOUS CLAYSTONE: as above		
1240.0 - 1250.0	95	CALCAREOUS SILTSTONE: as above, increasingly argillaceous, clays commonly washed out, trace light brownish grey.		
	5	CALCAREOUS CLAYSTONE: medium dark grey, silty, trace glauconite specks, firm to moderately hard, sub blocky		
1250.0 - 1260.0	95	CALCAREOUS SILTSTONE: as above, trace carbonaceous material, trace fossil spine fragments		
	5	CALCAREOUS CLAYSTONE: as above		
1260.0 - 1270.0	98	CALCAREOUS SILTSTONE: light brownish olive grey, medium light grey in part, argillaceous, common glauconite, common very fine to fine quartz, locally grading towards SILTY SANDSTONE, firm to moderately hard, sub blocky		
	2	CALCAREOUS CLAYSTONE: as above, less glauconite specks		
1270.0 - 1280.0	98	CALCAREOUS SILTSTONE: predominantly light olive grey		
	2	CALCAREOUS CLAYSTONE: as above		
1280.0 - 1290.0	98	CALCAREOUS SILTSTONE: as above		
	2	CALCAREOUS CLAYSTONE: as above		
1290.0 - 1300.0	95	CALCAREOUS SILTSTONE: light olive grey to olive grey, medium light grey in part, argillaceous, common very fine to fine quartz, trace foraminifera (sponge spicules, Praeorbulina), trace glauconite, locally grading towards SILTY SANDSTONE, firm to moderately hard, sub blocky to subfissile in part		
	5	CALCAREOUS CLAYSTONE: as above		
1300.0 - 1310.0	95	CALCAREOUS SILTSTONE: Olive grey to light olive grey, as above		
	5	CALCAREOUS CLAYSTONE: as above		
1310.0 - 1320.0	95	CALCAREOUS SILTSTONE: light olive grey to greenish grey, olive grey in part, argillaceous, common very fine to fine quartz, locally grading towards SILTY SANDSTONE, firm to hard, sub blocky to subfissile in part		
	5	CALCAREOUS CLAYSTONE: Greenish grey, silty in part, trace glauconite specks, soft amorphous to firm, moderately hard in part		
1320.0 - 1340.0	93	CALCAREOUS SILTSTONE: light olive grey to greenish grey, olive grey in part, argillaceous, common very fine to fine quartz, locally grading towards SILTY SANDSTONE, firm to hard, sub blocky to subfissile in part		
	7	CALCAREOUS CLAYSTONE: as above, trace with common, dark green angular glauconite specks, trace very fine sand		
1340.0 - 1360.0	93	CALCAREOUS SILTSTONE: as above, common foraminifera		
	7	CALCAREOUS CLAYSTONE: as above		
1360.0 - 1380.0	90	CALCAREOUS SILTSTONE: as above		
	10	CALCAREOUS CLAYSTONE: as above		
1380.0 - 1400.0	80	CALCAREOUS SILTSTONE: medium grey to olive grey, argillaceous in part, common very fine to fine subangular to subrounded quartz, common foraminifera (sponge spicules, Praeorbulina), trace glauconite, trace locally grading to SILTY SANDSTONE, firm to moderately hard, sub blocky to subfissile in part		
	20	CALCAREOUS CLAYSTONE: Greenish grey to medium light grey, white in part, silty in part, trace glauconite specks, soft amorphous to firm		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1400.0 - 1420.0	70	CALCAREOUS SILTSTONE: as above, 1% black shale, very calcareous, hard, fissile		
	30	CALCAREOUS CLAYSTONE: as above, 1% moderate yellow brown, homogenous, slightly calcareous, soft amorphous		
1420.0 - 1440.0	60	CALCAREOUS SILTSTONE: as above		
	30	CALCAREOUS CLAYSTONE: light grey to light olive grey, as above		
	10	CALCAREOUS MARL: white, trace black carbonaceous streaks, trace locally with medium green rounded glauconite pellets, trace locally with very fine subrounded sand and rare grading to CALCARENITE in part, soft to moderately hard		
1440.0 - 1450.0	50	CALCAREOUS SILTSTONE: as above, medium grey to olive grey, argillaceous in part, trace translucent to yellow in part, very fine to fine subangular to subrounded and rare very coarse to granular <2 mm subrounded quartz, trace foraminifera, trace glauconite		
	30	CALCAREOUS CLAYSTONE: as above		
	20	CALCAREOUS MARL: as above		
1450.0 - 1460.0	100	NOT RECOVERED:		
1460.0 - 1470.0	35	CALCAREOUS SILTSTONE: as above		
	35	CALCAREOUS MARL: as above		
	20	CALCAREOUS CLAYSTONE: as above		
	10	CALCAREOUS CALCARENITE: white to yellowish grey in part, common black specks, trace locally with medium green rounded glauconite pellets, moderately hard to hard		
1470.0 - 1480.0	35	CALCAREOUS MARL: as above		
	30	CALCAREOUS SILTSTONE: as above		
	20	CALCAREOUS CALCARENITE: as above, abundant black specks (possible carbonaceous material)		
	15	CALCAREOUS CLAYSTONE: as above		
1480.0 - 1500.0	35	CALCAREOUS MARL: white, common black carbonaceous streaks, trace locally with medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard		
	30	CALCAREOUS CALCARENITE: as above		
	20	CALCAREOUS SILTSTONE: medium grey to olive grey, argillaceous in part, rare foraminifera, moderately hard to hard, subblocky to subfissile		
	10	CALCAREOUS CLAYSTONE: medium grey, homogenous to silty in part, soft amorphous to firm in part		
1500.0 - 1520.0	35	CALCAREOUS MARL: as above		
	35	CALCAREOUS CALCARENITE: as above		
	20	CALCAREOUS SILTSTONE: as above		
	10	CALCAREOUS CLAYSTONE: as above		
1520.0 - 1540.0	35	CALCAREOUS MARL: white, common locally with abundant black carbonaceous streaks, trace locally with medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard		
	35	CALCAREOUS CALCARENITE: white to yellowish grey in part, common to abundant black specks, trace locally with very fine medium green rounded glauconite pellets, trace with very fine sand, moderately hard to hard		
	20	CALCAREOUS SILTSTONE: olive grey, rare sandy siltstone in part, rare foraminifera, moderately hard to hard, subblocky to subfissile; 1% black, very calcareous, hard, subfissile shale		
	10	CALCAREOUS CLAYSTONE: as above		
1540.0 - 1560.0	35	CALCAREOUS MARL: as above		
	35	CALCAREOUS CALCARENITE: as above		
	20	CALCAREOUS SILTSTONE: as above		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1540.0 - 1560.0	10	CALCAREOUS CLAYSTONE: as above		
1560.0 - 1580.0	45	CALCAREOUS MARL: white, common locally with abundant black carbonaceous streaks, trace locally with common medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard		
	35	CALCAREOUS CALCARENITE: as above		
	15	CALCAREOUS SILTSTONE: as above, trace locally with common microcrystalline pyrite, 1% foraminifera		
	5	CALCAREOUS CLAYSTONE: medium grey, homogenous, soft amorphous to firm in part		
1580.0 - 1600.0	40	CALCAREOUS MARL: as above		
	25	CALCAREOUS CALCARENITE: as above, medium light grey to light grey, rare white in part, common locally with dark green glauconite, common black carbonaceous specks, in part grading to CALCISILTITE, moderately hard to hard in part		
	25	CALCAREOUS SILTSTONE: olive grey to light olive grey, trace loose foraminifera with occasional embedded, rare transparent, subangular quartz, moderately hard to hard, subblocky to subfissile, fissile and brittle in part		
	10	CALCAREOUS CLAYSTONE: as above		
1600.0 - 1620.0	35	CALCAREOUS MARL: as above		
	30	CALCAREOUS SILTSTONE: as above		
	25	CALCAREOUS CALCARENITE: as above		
	10	CALCAREOUS CLAYSTONE: as above, light grey in part		
1620.0 - 1640.0	35	CALCAREOUS SILTSTONE: as above		
	30	CALCAREOUS MARL: as above		
	25	CALCAREOUS CALCARENITE: as above		
	10	CALCAREOUS CLAYSTONE: as above		
1640.0 - 1660.0	35	CALCAREOUS SILTSTONE: as above, rare shale, brownish black to black trace fissile and brittle		
	30	CALCAREOUS MARL: as above		
	25	CALCAREOUS CALCARENITE: as above		
	10	CALCAREOUS CLAYSTONE: as above		
1660.0 - 1670.0	40	CALCAREOUS SILTSTONE: as above, trace light olive grey, rare locally with tubular calcite veins embedded, moderately hard to hard		
	30	CALCAREOUS MARL: white to yellowish grey, common locally with abundant black carbonaceous streaks, trace locally with common medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard		
	15	CALCAREOUS CALCARENITE: as above		
	15	CALCAREOUS CLAYSTONE: medium grey to light olive grey, homogenous, rare locally with very fine sand in part, soft amorphous to firm in part		
1670.0 - 1680.0	40	CALCAREOUS SILTSTONE: as above		
	30	CALCAREOUS CLAYSTONE: as above		
	15	CALCAREOUS MARL: as above		
	5	CALCAREOUS CALCARENITE: as above		
1680.0 - 1690.0	45	CALCAREOUS SILTSTONE: olive grey to light olive grey, trace loose foraminifera and tubular calcite vein embedded, rare transparent, subangular quartz, moderately hard to hard, subblocky to subfissile; rare SHALE, brownish black to black trace fissile and brittle		
	35	CALCAREOUS CLAYSTONE: as above		
	15	CALCAREOUS MARL:		
	5	CALCAREOUS CALCARENITE: medium light grey to light grey, rare white in part, rare locally with common dark green glauconite, common black carbonaceous specks, in part grading to CALCISILTITE, moderately hard to hard in part		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1690.0 - 1700.0	50	CALCAREOUS CLAYSTONE: medium grey to light olive grey, homogenous, rare locally with very fine sand in part, soft amorphous to firm in part		
	35	CALCAREOUS SILTSTONE: as above		
	10	CALCAREOUS MARL: white to yellowish grey, common locally with abundant black carbonaceous streaks, trace locally with common medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard		
	5	CALCAREOUS CALCARENITE: medium light grey to light grey, rare white in part, rare locally with common dark green glauconite, common black carbonaceous specks, in part grading to CALCISILTITE, moderately hard to hard in part		
1700.0 - 1710.0	50	CALCAREOUS CLAYSTONE: medium grey to light olive grey, homogenous, rare locally with very fine sand in part, soft amorphous to firm in part		
	35	CALCAREOUS SILTSTONE: as above		
	10	CALCAREOUS MARL: white to yellowish grey, common locally with abundant black carbonaceous streaks, trace locally with common medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard		
	5	CALCAREOUS CALCARENITE:		
1710.0 - 1720.0	50	CALCAREOUS CLAYSTONE: olive grey to light olive grey, trace loose foraminifera and tubular clacite vein embedded, rare transparent, subangular fine to very coarse in part, quartz, 1% calcite vein, moderately hard to hard, subblocky to subfissile; 1% SHALE, brownish black to black trace fissile and brittle		
	40	CALCAREOUS SILTSTONE: Greenish grey to medium grey, trace loose foraminifera and tubular clacite vein embedded, rare transparent, subangular quartz, moderately hard to hard, subblocky to subfissile; rare SHALE, brownish black to black trace fissile and brittle		
	10	CALCAREOUS MARL: white to yellowish grey, common locally with abundant black carbonaceous streaks, trace locally with common medium green rounded glauconite pellets, trace locally with very fine subrounded sand and soft to moderately hard; 1% grading to CALCARENITE		
1720.0 - 1730.0	50	CALCAREOUS CLAYSTONE: as above		
	40	CALCAREOUS SILTSTONE: as above		
	10	CALCAREOUS MARL: as above		
1730.0 - 1740.0	55	CALCAREOUS CLAYSTONE: as above, rare loose transparent, angular, granular <2 mm quartz		
	40	CALCAREOUS SILTSTONE: as above		
	5	CALCAREOUS MARL: as above		
1740.0 - 1750.0	85	CALCAREOUS CLAYSTONE: olive grey to light olive grey, medium light to medium dark grey, occasional fine glauconite grains, trace loose foraminifera, trace quartz, moderately hard to hard, subblocky to subfissile		
	10	CALCAREOUS SILTSTONE: as above		
	5	CALCILUTITE: white to yellowish grey, common locally with abundant black carbonaceous streaks, trace very fine sand, soft to firm, sub blocky		
1750.0 - 1760.0	90	CALCAREOUS CLAYSTONE: light to medium dark grey, light olive grey, occasional light brownish grey, occasional fine glauconite grains, trace loose foraminifera, trace quartz, moderately hard to hard, subblocky to subfissile		
	10	CALCAREOUS SILTSTONE: Greenish grey to light to medium grey, clacite veins embedded, occasional fine glauconite, occasional carbonaceous material, rare transparent, subangular quartz, moderately hard to hard, subblocky to subfissile		
1760.0 - 1770.0	90	CALCAREOUS CLAYSTONE: medium light grey, to medium grey, occasional greenish grey, rare disseminated fine glauconite, sub blocky to sub fissile		
	9	CALCAREOUS SILTSTONE: medium light grey, to medium grey, occasional greenish grey, rare disseminated fine glauconite, sub blocky to sub fissile		
	1	CALCILUTITE: white, yellowish grey, occasional calcite grains, grading to CALCARENITE, trace Foraminifera spines, soft to hard, sub blocky		
1770.0 - 1780.0	70	CALCAREOUS CLAYSTONE: as above		
	20	SANDSTONE: transparent, translucent, vari-coloured quartz, fine grain, very well sorted, sub angular to round, spherical to sub elongate, possible argillaceous matrix		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	9	- clays washed out, loose, common glauconite pellets, occasional nodular pyrite, trace jasper, trace fossils, poor to fair inferred porosity, no show CALCAREOUS SILTSTONE: as above		
	1	CALCILUTITE: as above		
1780.0 - 1790.0	70	CALCAREOUS CLAYSTONE: medium light grey to medium grey, olive grey to greenish grey, light brownish grey, occasional disseminated fine glauconite, trace pyrite veins, soft to hard, sub blocky to sub fissile, trace fissile		
	20	CALCAREOUS SILTSTONE: grades from CALCAREOUS CLAYSTONE ; olive grey to greenish grey, light brownish grey, occasional disseminated fine glauconite, sub blocky to sub fissile		
	5	SANDSTONE: as above		
1790.0 - 1800.0	95	CALCAREOUS CLAYSTONE: as above		
	5	CALCAREOUS SILTSTONE: as above		
1800.0 - 1810.0	50	CALCAREOUS SILTSTONE: light olive grey to greenish grey, light brownish grey, occasional disseminated fine to medium glauconite and quartz, generally firm, sub blocky to blocky,		
	40	CALCAREOUS CLAYSTONE: medium light grey to medium grey, occasional olive grey to greenish grey, rare disseminated fine glauconite and quartz, soft to hard, sub blocky to sub fissile, trace fissile		
	10	SANDSTONE: transparent, translucent, vari-coloured quartz orange and yellows, fine grain, trace medium grained, very well sorted, sub angular to round, spherical to sub elongate, possible silty olive grey matrix - washed out, loose, common glauconite pellets, trace nodular pyrite, glauconite replacement visible, poor to fair inferred porosity, no show		
1810.0 - 1820.0	50	CALCAREOUS SILTSTONE: as above		
	30	SANDSTONE: as above		
	20	CALCAREOUS CLAYSTONE: as above		
1820.0 - 1830.0	45	CALCAREOUS SILTSTONE: light olive grey to olive grey, light brownish grey, occasional disseminated fine to medium glauconite and quartz, generally firm, sub blocky to blocky		
	35	SILTY SANDSTONE: transparent, translucent, vari-coloured quartz orange and yellows, fine grain, trace medium grained, very well sorted, sub angular to round, spherical to sub elongate, silty olive grey matrix - washed out, loose, abundant glauconite pellets, trace nodular pyrite, glauconitic foram replacement visible, calcareous, poor to fair inferred porosity, no show		
	20	CALCAREOUS CLAYSTONE: as above		
1830.0 - 1840.0	100	NOT RECOVERED: as above		
1840.0 - 1850.0	80	SILTSTONE: olive grey to brownish grey, common to abundant disseminated fine to medium glauconite, common to abundant very fine to fine quartz, grades to SILTY SANDSTONE in part, argillaceous, calcareous, soft to firm, amorphous to sub blocky		
	20	CALCAREOUS CLAYSTONE: medium light grey to medium grey, occasional olive grey to greenish grey, soft to hard, sub blocky to sub fissile, trace fissile		
1850.0 - 1860.0	20	NOT RECOVERED: as above		
1860.0 - 1865.0	90	SILTSTONE: olive grey to brownish grey, common to abundant disseminated fine to medium glauconite, common to abundant very fine to fine quartz, grades to SILTY SANDSTONE in part, argillaceous, calcareous, soft to firm, amorphous to sub blocky		
	10	SANDSTONE: grades from SILTSTONE ; olive grey, transparent, translucent, trace yellow orange, fine grain, very well sorted, sub angular to round, spherical to sub elongate, inferred silty matrix - washed out, loose, common fine to medium glauconite pellets, calcareous, poor to fair inferred porosity, no show		
	10	CALCAREOUS CLAYSTONE:		
1865.0 - 1870.0	50	GLAUCONITIC SANDSTONE: olive grey, transparent, translucent, opaque, yellow orange, very fine to fine grain, very well sorted, sub angular to round, spherical to sub elongate, calcareous silty matrix, predominately loose, abundant fine to medium glauconite pellets, occasional lithics, trace pyrite, poor visible porosity, no show		
	40	SILTSTONE: as above		
	10	CALCAREOUS CLAYSTONE: medium light grey to medium grey, occasional olive		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		grey to greenish grey, rare disseminated fine glauconite and quartz, soft to hard, sub blocky to sub fissile, trace fissile		
1870.0 - 1880.0	50	SILTY SANDSTONE: olive grey, transparent, translucent, opaque, yellow orange, frosted grains, very fine to fine grain, 30% coarse to very coarse grain, locally well sorted, sub angular to round, spherical to sub elongate, calcareous, silty matrix, predominately loose, trace fractured very coarse grains, abundant fine to medium glauconite pellets, occasional lithics, rare to common nodular pyrite, trace forams, poor visible porosity, no show		
	40	SILTSTONE: olive grey to brownish grey, common to abundant disseminated fine to medium glauconite, common to abundant very fine to fine quartz, grades to SILTY SANDSTONE in part, argillaceous, calcareous, soft to firm, amorphous to sub blocky		
	10	CALCAREOUS CLAYSTONE: as above		
1880.0 - 1900.0	45	SANDSTONE: light grey, transparent, translucent, fine to medium grain, 40% milky and opaque, coarse to very coarse, sub angular to round, spherical to sub elongate, poorly sorted, loose, loose very fine to fine glauconite, rare to common pyrite, common fractured grains, poor to fair inferred porosity,		
	30	SILTY SANDSTONE: as above		
	20	SILTSTONE: as above		
	5	CLAYSTONE: medium light grey, moderately calcareous to calcareous, trace silt, trace disseminated pyrite, firm, sub blocky, sub fissile in part		
1900.0 - 1920.0	75	SANDSTONE:		
	20	SILTY SANDSTONE: olive grey, brownish grey, transparent, translucent, yellow orange, quartz, very fine to fine grain, well sorted, sub angular to round, spherical to sub elongate, calcareous, silty matrix, grades to SILTSTONE in part, firm to moderately hard, moderately calcareous, common fine glauconite pellets, rare nodular pyrite, poor visible porosity, no show		
	5	CLAYSTONE: ,		
1920.0 - 1940.0	75	SANDSTONE: light grey, translucent to milky coarse to very coarse quartz, translucent, transparent, fine to medium quartz, sub angular to round, spherical to sub elongate, poorly sorted, loose, occasional quartz overgrowths, very fine to fine glauconite, rare to common intergranular and loose pyrite, common fractured grains, poor to fair inferred porosity,		
	20	SILTY SANDSTONE: olive grey, brownish grey, transparent, translucent, yellow orange, quartz, very fine to occasional medium grain, well sorted, sub angular to round, spherical to sub elongate, calcareous, silty matrix, grades to SILTSTONE in part, firm to moderately hard, moderately calcareous, common fine glauconite pellets, rare nodular pyrite, poor visible porosity, no show		
	5	CLAYSTONE: medium light grey, moderately calcareous to calcareous, trace silt, trace disseminated pyrite, firm, sub blocky, sub fissile to fissile		
1940.0 - 1960.0	60	SANDSTONE: as above		
	30	SILTY SANDSTONE: as above - less glauconite, generally cleaner, increase in finer quartz content		
	10	CLAYSTONE: as above		
1960.0 - 1980.0	40	SANDSTONE: light grey, translucent to milky coarse to very coarse quartz, common > 2mm gravel size quartz grains, translucent, transparent, fine to medium quartz, sub angular to sub round, spherical to sub elongate, poorly sorted, predominantly loose, rare aggregates with siliceous matrix, occasional quartz overgrowths, rare to common intergranular and loose pyrite, occasional fractured grains, trace very fine to fine glauconite, poor to fair inferred porosity, no show.		
	30	CLAYSTONE: medium light grey to dark grey, moderately calcareous to calcareous, trace disseminated pyrite, firm to hard, sub blocky, sub fissile to fissile		
	30	SILTY SANDSTONE: as above		
1980.0 - 2000.0	60	SANDSTONE: as above		
	30	CLAYSTONE: as above		
	10	SILTY SANDSTONE: as above		
2000.0 - 2020.0	70	SANDSTONE: light grey, translucent, transparent milky, fine to very coarse quartz, common > 2mm gravel size quartz grains, angular to sub round, spherical to sub elongate, very poorly sorted, predominantly loose, rare aggregates with siliceous matrix, occasional quartz overgrowths, rare to common intergranular and loose		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	60	pyrite, common fractured grains, trace very fine to fine glauconite, poor to fair inferred porosity, no show. SANDSTONE: light grey, translucent, transparent, milky quartz, medium to very coarse, common > 2mm gravel size quartz grains, angular to sub round, sub spherical, moderately to poorly sorted, predominantly loose, rare aggregates with siliceous matrix, occasional quartz overgrowths, rare intergranular and loose pyrite, occasional fractured grains, poor to fair inferred porosity, no show.		
	30	COAL: black, sub vitreous to vitreous, anthracitic, sub conchoidal fractured to conchoidal fracture, sub blocky to splintery.		
	25	CLAYSTONE: medium light grey to dark grey, olive grey, slightly to moderately calcareous, trace disseminated pyrite, firm to hard, sub blocky, sub fissile to fissile		
	10	CLAYSTONE: medium light grey to dark grey, moderately calcareous to calcareous, trace disseminated pyrite, carbonaceous specks in part, silty in part, firm to hard, sub blocky, sub fissile to fissile		
	5	SILTY SANDSTONE: as above		
2020.0 - 2040.0	50	SANDSTONE: fine to very coarse quartz. as above.		
	30	COAL: black, sub vitreous to vitreous, anthracitic, sub conchoidal fractured to conchoidal fracture, blocky.		
	20	CLAYSTONE: very carbonaceous in parts, locally silty, rare pyrite in some cuttings		
2040.0 - 2060.0	45	SANDSTONE: as above		
	30	COAL: as above		
	10	SILTY SANDSTONE: olive grey to light olive grey, brownish grey, transparent, translucent, yellow orange, quartz, fine grain, very well sorted, sub angular to round, spherical to sub spherical, silty matrix, grades to SILTSTONE in part, carbonaceous specks in part, firm to moderately hard, non to very weakly calcareous, poor visible porosity, no show		
	10	SILTSTONE: olive grey to light olive grey, brownish grey, carbonaceous specks and laminae, firm to moderately hard, non to very weakly calcareous, firm to moderately hard sub blocky to blocky.		
	5	CLAYSTONE: medium light grey to dark grey, non to weakly calcareous, carbonaceous specks in part, silty in part, firm to trace very hard, sub blocky, sub fissile to fissile		
2060.0 - 2080.0	40	SANDSTONE: very light grey, translucent, transparent, milky quartz, medium to very coarse, predominantly coarse to very coarse, quartz, angular to sub round, sub spherical, moderately well sorted, loose, occasional quartz overgrowths, trace intergranular pyrite, occasional fractured grains, poor to fair inferred porosity, no show.		
	35	CLAYSTONE: medium light grey to dark grey, olive grey, olive black, non to weakly calcareous, carbonaceous specks in part, silty in part, firm to trace very hard, sub blocky, sub fissile to fissile		
	10	SILTY SANDSTONE: brownish grey to brownish black, olive grey, transparent, very fine to fine grain quartz, sub angular to sub round, very well sorted, firm to slightly hard, silty matrix, argillaceous laminae in part, common carbonaceous specks and laminae, nil visible porosity, no show.		
	10	SILTSTONE: brownish grey to brownish black, olive grey, light brownish grey, common very fine quartz, common carbonaceous specks, moderately argillaceous in part, non calcareous, firm to moderately hard, sub blocky.		
	5	COAL: as above		
2080.0 - 2100.0	54	SANDSTONE: as above, fine to coarse, common re-crystallized textures,		
	25	CLAYSTONE: as above, trace light grey, quartz silt, trace very fine disseminated pyrite, trace calcite veins.		
	15	COAL: black, sub vitreous to trace vitreous, sub anthracitic, sub conchoidal fractured, sub blocky.		
	5	SILTSTONE: as above		
	1	SILTY SANDSTONE: as above, trace very fine glauconite		
2100.0 - 2120.0	83	SANDSTONE: as above		
	10	CLAYSTONE: medium light grey to dark grey, olive grey, olive black, brown grey, non to weakly calcareous, firm to trace very hard, sub blocky, sub fissile to fissile		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2100.0 - 2120.0	5	COAL: as above		
	1	SILTY SANDSTONE: as above		
	1	SILTSTONE: as above		
2120.0 - 2140.0	60	SANDSTONE: very light grey, translucent, transparent, milky quartz, coarse to very coarse, angular to sub round, sub spherical, well sorted, loose, occasional quartz overgrowths, trace intergranular pyrite, poor to fair inferred porosity, no show.		
	19	CLAYSTONE: very light grey to medium light grey, olive grey, olive black, non to weakly calcareous, carbonaceous specks in part, silty in part, firm to trace very hard, sub blocky, sub fissile to fissile		
	10	COAL: black, sub vitreous to trace vitreous, sub anthracitic, sub conchoidal fractured, sub blocky.		
	10	SILTSTONE: brownish grey to brownish black, olive grey, light brownish grey, very light grey, common carbonaceous specks and laminae, moderately argillaceous in part, non calcareous, trace mica, quartz silt in parts, moderately firm, sub blocky to sub fissile.		
2140.0 - 2150.0	1	SILTY SANDSTONE: brownish grey to brownish black, olive grey, transparent, very fine to fine grain quartz, sub angular to sub round, very well sorted, firm to slightly hard, silty matrix, argillaceous laminae in part, common carbonaceous specks and laminae, nil visible porosity, no show.		
	55	SANDSTONE: as above, trace light red very coarse quartz		
	30	CLAYSTONE: as above, locally carbonaceous		
	10	SILTSTONE: as above		
2150.0 - 2160.0	5	COAL: as above		
	95	COAL: black, sub vitreous to trace vitreous, sub anthracitic, trace silt in part, sub conchoidal to occasional conchoidal fracture, sub blocky. SANDSTONE:		
2160.0 - 2170.0	45	SANDSTONE: as above, trace light red very coarse quartz		
	30	CLAYSTONE: as above, locally carbonaceous		
	20	COAL: as above		
	5	SILTSTONE: as above		
2170.0 - 2180.0	45	SANDSTONE: very light grey, translucent, transparent, milky quartz, coarse to very coarse, angular to sub round, sub spherical, well sorted, loose, occasional quartz overgrowths, trace intergranular pyrite, poor to fair inferred porosity, no show.		
	30	CLAYSTONE: as above olive grey, olive black, carbonaceous, non to weakly calcareous, firm to trace hard, sub blocky, sub fissile to fissile		
	20	COAL: as above		
	5	SILTSTONE: brownish grey, olive grey, light brownish grey, common carbonaceous specks and laminae, moderately argillaceous in part, non calcareous, trace mica, quartz silt in parts, moderately firm, sub blocky to sub fissile.		
2180.0 - 2190.0	45	SANDSTONE: as above		
	30	CLAYSTONE: as above		
	20	COAL: black, sub vitreous to trace vitreous, sub anthracitic, sub conchoidal fractured, sub blocky.		
	5	SILTSTONE: as above		
2190.0 - 2200.0	45	SANDSTONE: as above - fine to very coarse, poorly sorted, pyrite,		
	30	CLAYSTONE: very light grey to light grey, non to moderately calcareous, trace to abundant very fine quartz, locally grading to ARGILLACEOUS SANDSTONE, firm to hard, sub blocky, sub fissile		
	5	SILTSTONE: brownish grey, olive grey, common carbonaceous specks and laminae, non calcareous, trace very fine quartz in parts, moderately firm, sub blocky to sub fissile.		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2190.0 - 2200.0	1	COAL: as above		
2200.0 - 2210.0	45	SANDSTONE: very light grey, translucent, transparent, milky quartz, medium to very coarse, angular to sub round, sub spherical, poorly sorted, loose, occasional quartz overgrowths, poor to fair inferred porosity, no show.		
	30	CLAYSTONE: as above		
	25	COAL: as above		
2210.0 - 2220.0	60	SANDSTONE: light grey, trace yellowish grey, transparent quartz, fine to medium grain aggregates, predominantly loose, common coarse grain, angular to sub round, generally well sorted, white - trace yellowish grey siliceous / argillaceous matrix in part, weak siliceous cement, friable, trace calcareous, rare intergranular pyrite, trace calcite grains, poor to fair inferred porosity		
	30	CLAYSTONE: light grey to medium grey, non to moderately calcareous, trace to abundant very fine quartz in part 20% grading to ARGILLACEOUS fine grain SANDSTONE, common quartz silt, firm, sub blocky, sub fissile		
	10	COAL:		
2220.0 - 2230.0	65	SANDSTONE: as above		
	34	CLAYSTONE: light to dark grey, light brownish grey, trace disseminated pyrite, firm to hard, sub blocky		
	1	COAL: black, sub vitreous to trace vitreous, sub anthracitic, sub conchoidal fractured, sub blocky.		
2230.0 - 2240.0	55	SANDSTONE: very light grey, translucent, transparent, milky quartz, medium to very coarse, angular, poorly sorted, loose, recrystallised quartz in part, intergranular and loose nodular pyrite, poor to fair inferred porosity, no show.		
	40	CLAYSTONE: light to dark grey, light brownish grey, light yellowish grey, occasional black and carbonaceous, trace disseminated pyrite, firm to hard, sub blocky, sbb fissile in part.		
	5	COAL: as above		
2240.0 - 2250.0	40	CLAYSTONE: light to dark grey, light brownish grey, light yellowish grey, occasional black and carbonaceous, trace disseminated pyrite, firm to hard, sub blocky, sub fissile in part.		
	40	SANDSTONE: as above - fine to very coarse, very poorly sorted,		
	20	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, sub blocky.		
2250.0 - 2260.0	60	CLAYSTONE: as above		
	30	SANDSTONE: as above, predominantly loose BIMODAL, fine to medium, sub rounded to rounded to very coarse to granular < 3mm, angular, very poorly sorted, recrystallised quartz in part, intergranular and loose nodular pyrite, poor inferred porosity, no show.		
	10	COAL: as above		
2260.0 - 2270.0	60	CLAYSTONE: as above, homogenous to trace fine sandy in part		
	30	SANDSTONE: as above, trace sandstone aggregate, white to yellowish grey in part, friable, fine to medium, sub rounded, moderately well sorted, recrystallised quartz in part, intergranular and loose nodular pyrite non-calcareous, argillaceous matrix, fair inferred porosity, no show		
	5	COAL: as above		
2270.0 - 2280.0	50	CLAYSTONE: as above		
	30	SANDSTONE: predominantly loose BIMODAL, fine to medium, sub rounded to rounded to very coarse to granular < 3mm, angular, very poorly sorted, recrystallised quartz in part, intergranular and loose nodular pyrite, 1% medium muscovite flakes poor inferred porosity, no show		
	20	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, sub blocky		
2280.0 - 2290.0	55	CLAYSTONE: Medium light grey to dark grey, light brownish grey, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, firm to hard, sub blocky, sub fissile in part.		
	40	SANDSTONE: as above		
	5	COAL: as above		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2290.0 - 2300.0	50 35 15	CLAYSTONE: as above, minor yellowish grey COAL: as above SANDSTONE: as above		
2300.0 - 2310.0	65 20 15	CLAYSTONE: as above, 2% white, soft, amorphous, homogenous, non calcareous COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, sub blocky SANDSTONE: as above		
2310.0 - 2320.0	65 20 5	CLAYSTONE: as above, trace white, soft, amorphous, homogenous, non calcareous SANDSTONE: as above COAL: as above		
2320.0 - 2330.0	75 20 5	CLAYSTONE: as above SANDSTONE: as above COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, 1% locally with abundant microcrystalline pyrite, sub blocky		
2330.0 - 2340.0	65 25 10	CLAYSTONE: White, medium light grey to light brownish grey, light yellowish grey, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous in part, firm to hard, sub blocky, sub fissile in part, non calcareous and grading to SILTSTONE in part SANDSTONE: as above, loose sand coarsening slightly, BIMODAL, fine to medium and very coarse to granular < 4mm in part COAL: as above		
2340.0 - 2350.0	50 35 15	CLAYSTONE: as above COAL: as above SANDSTONE: as above		
2350.0 - 2360.0	50 40 10	CLAYSTONE: White, medium light grey to light brownish grey, light yellowish grey, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous in part, firm to hard, sub blocky, sub fissile in part, non calcareous and grading to SILTSTONE in part COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, 1% locally with abundant microcrystalline pyrite, sub blocky to sub fissile and fissile in part SANDSTONE: as above		
2360.0 - 2370.0	60 20 15 5	CLAYSTONE: White, medium light grey to light brownish grey, light yellowish grey, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous in part, firm to hard, sub blocky SANDSTONE: Predominantly loose BIMODAL, fine to medium, sub rounded to rounded to very coarse to granular < 4mm, angular, very poorly sorted, recrystallised quartz in part, intergranular and loose nodular pyrite, 1% medium muscovite flakes poor inferred porosity, no show; trace sandstone aggregate, white to yellowish grey in part, friable, fine to medium, sub rounded, moderately well sorted, intergranular and loose nodular pyrite non-calcareous, argillaceous matrix, fair inferred porosity, no show COAL: as above SILTSTONE: Pale yellowish brown, moderately hard, very fine transparent quartz, very fine mica, sub blocky to sub fissile in part, non-calcareous		
2370.0 - 2380.0	60 25	CLAYSTONE: White, medium light grey to light brownish grey, light yellowish grey, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous in part, firm to hard, sub blocky, sub fissile in part, non calcareous and grading to SILTSTONE in part SANDSTONE: Loose very coarse to granular < 3mm, angular and fine to medium, sub rounded in part, poorly sorted, recrystallised quartz in part, intergranular and loose nodular pyrite, 1% medium muscovite flakes poor inferred porosity, no show		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2370.0 - 2380.0	10	SILTSTONE: as above		
	5	COAL: as above		
2380.0 - 2390.0	70	CLAYSTONE: White, medium light grey to light brownish grey, light yellowish grey, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous in part, firm, sub blocky		
	20	SANDSTONE: as above		
	5	SILTSTONE: as above		
	5	COAL: as above		
2390.0 - 2400.0	74	CLAYSTONE: as above		
	20	SANDSTONE: as above		
	5	SILTSTONE: as above		
	1	COAL: as above		
2400.0 - 2410.0	85	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous and grading to hard, subfissile SILTSTONE in part		
	10	SANDSTONE: as above		
	5	COAL: as above,		
2410.0 - 2420.0	68	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
	20	SANDSTONE: as above, 2% sandstone aggregate, white to yellowish grey in part, friable to firm, fine to medium, sub rounded, moderately well sorted, poorly cemented, fair inferred porosity; 1 % intergranular quartz and nodular pyrite, hard, well cemented		
	10	SILTSTONE:		
	2	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, 1% locally with abundant microcrystalline pyrite, sub blocky to sub fissile and fissile in part		
2420.0 - 2430.0	63	CLAYSTONE: White, medium grey to medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm to hard in part, non calcareous and grading to hard, subfissile SILTSTONE in part		
	20	SANDSTONE: as above		
	15	SILTSTONE:		
	2	COAL: as above		
2430.0 - 2440.0	73	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
	15	SANDSTONE: as above, 2% sandstone aggregate, white to yellowish grey in part, friable to firm, fine to medium, sub rounded, moderately well sorted, poorly cemented, fair inferred porosity; 1 % intergranular quartz and nodular pyrite, hard, well cemented, no show		
	10	SILTSTONE: as above		
	2	COAL: as above		
2440.0 - 2450.0	45	CLAYSTONE: as above		
	40	SANDSTONE: Loose very coarse to granular < 3mm, angular to fine, sub rounded in part, very poorly sorted, intergranular and loose nodular pyrite, poor inferred porosity, no show		
	14	SILTSTONE: as above		
	1	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, 1% locally with abundant microcrystalline pyrite, sub blocky to sub fissile and fissile in part		
2450.0 - 2460.0	45	CLAYSTONE: as above		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2450.0 - 2460.0	40	SANDSTONE: as above, 1% sandstone aggregate, white to pale yellowish orange, friable to firm, fine to medium, subangular, moderately sorted, minor pyrite infilled cement, inferred silica cement in part, poor to fair visible porosity; coal, as above, in part		
	15	SILTSTONE: Pale yellowish brown to pale brown, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part		
2460.0 - 2470.0	65	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
	25	SANDSTONE: as above		
	10	SILTSTONE: as above		
2470.0 - 2480.0	60	SANDSTONE: Loose very coarse to granular < 3mm, angular to subangular in part, very fine to fine, sub rounded to rounded in part, very poorly sorted, 1% intergranular and loose nodular pyrite, poor inferred porosity, trace sandstone aggregate, white to pale yellowish orange, friable to firm, fine to medium, subangular, moderately sorted, minor pyrite infilled cement, inferred silica cement in part, poor to fair visible porosity FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	35	CLAYSTONE: as above		
	5	SILTSTONE: Pale yellowish brown to pale brown, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part		
2480.0 - 2490.0	60	SANDSTONE: as above FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	35	CLAYSTONE: as above		
	5	SILTSTONE: as above		
2490.0 - 2500.0	50	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
	40	SANDSTONE: as above FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	10	SILTSTONE: Pale yellowish brown to pale brown, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part		
2500.0 - 2510.0	50	SANDSTONE: Loose very coarse to granular < 3mm, angular to subangular, very fine to fine, sub rounded to rounded, very poorly sorted, 1% intergranular and loose nodular pyrite, poor inferred porosity, no show; trace sandstone aggregate, as above FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	30	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
	20	SILTSTONE: Pale yellowish brown to pale brown, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part and grading to a very fine sandstone in part; black COAL, as above, in part		
2510.0 - 2520.0	60	SANDSTONE: as above FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	20	SILTSTONE: as above		
	20	CLAYSTONE: as above		
2520.0 - 2530.0	60	SANDSTONE: Loose sand, Transparent to translucent, very fine to medium and very coarse in part, sub rounded to rounded and angular in part, moderate to poorly sorted, 1% loose muscovite flakes, poor to fair inferred porosity; trace sandstone aggregate, white to pale yellowish orange, friable to firm, fine to medium, subangular, moderately sorted, minor pyrite infilled cement, inferred silica cement in part, poor to fair visible porosity FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	20	SILTSTONE: Pale yellowish brown to pale brown, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part and grading to a very fine sandstone in part; black COAL, as above, in part		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2520.0 - 2530.0	20	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
2530.0 - 2540.0	40	SILTSTONE: Pale yellowish brown to pale brown to medium grey, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part and grading to a very fine SANDSTONE in part; black COAL, as above, in part		
	35	CLAYSTONE: as above		
	25	SANDSTONE: as above FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
2540.0 - 2550.0	60	SILTSTONE: as above		
	25	CLAYSTONE: as above		
	15	SANDSTONE: as above FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
2550.0 - 2560.0	50	CLAYSTONE: White and medium light grey to light brownish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous, firm in part, non calcareous		
	40	SILTSTONE: Pale yellowish brown to pale brown to medium grey, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part and grading to a very fine SANDSTONE in part; black COAL, as above, in part		
	10	SANDSTONE: Loose sand, Transparent to translucent, very fine to medium and very coarse in part, sub rounded to rounded and angular in part, moderate to poorly sorted, 1% loose muscovite flakes, poor to fair inferred porosity		
2560.0 - 2570.0	100	NOT RECOVERED: Mudlogger out of the unit and geologist at 18:30 meeting		
2570.0 - 2580.0	50	SILTSTONE: as above		
	40	CLAYSTONE: as above, locally with very fine sand and grading to a SILTSTONE in part		
	8	SANDSTONE: as above		
	2	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, 1% locally with abundant microcrystalline pyrite, sub blocky to sub fissile		
2580.0 - 2590.0	50	SILTSTONE: Pale yellowish brown, medium grey to brownish grey, firm to hard, common black carbonaceous flecks to thin streaks, 1% medium biotite flakes, 1% very fine sand, sub blocky - sub fissile in part and grading to a very fine SANDSTONE in part		
	40	CLAYSTONE: Medium light grey to medium grey, dark grey in part, yellowish grey to white in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous to firm, non calcareous; locally with very fine sand and grading to a SILTSTONE in part		
	9	SANDSTONE: Loose sand, Transparent to translucent, very fine to medium and very coarse in part, sub rounded to rounded and angular in part, moderate to poorly sorted, 1% loose muscovite flakes, 1% loose very coarse to granular cryptocrystalline pyrite, poor to fair inferred porosity; 2% sandstone aggregate, white to pale yellowish orange, friable to firm, fine to medium, subangular, moderately sorted, minor pyrite infilled cement, inferred silica cement in part, poor to fair visible porosity FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	1	COAL: as above		
2590.0 - 2600.0	60	SILTSTONE: as above		
	35	CLAYSTONE: as above		
	4	SANDSTONE: as above		
	1	COAL: as above		
2600.0 - 2610.0	60	SILTSTONE: as above		
	35	CLAYSTONE: as above		
	4	SANDSTONE: as above		
		FLUORESCENCE : (Trace)		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2600.0 - 2610.0	1	COAL: as above		
2610.0 - 2620.0	50	SILTSTONE: Pale yellowish brown, medium grey to brownish grey, firm to hard, common black carbonaceous flecks to thin streaks, 1% medium biotite flakes, 1% very fine sand, sub blocky to sub fissile in part and grading to a very fine SANDSTONE in part		
	47	CLAYSTONE: white, medium light grey to medium grey, dark grey in part, yellowish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, soft and amorphous to firm, non calcareous; locally with very fine sand and grading to a SILTSTONE in part		
	2	SANDSTONE: loose sand, as above, sandstone aggregate, white to pale yellowish orange, friable, fine to medium, subangular, moderately sorted, argillaceous matrix, inferred silica cement in part, poor to fair visible porosity FLUORESCENCE : (Trace) pale yellow mineral fluorescence, no cut		
	1	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, 1% locally with abundant microcrystalline pyrite, sub blocky to sub fissile		
2620.0 - 2630.0	50	SILTSTONE: as above		
	42	CLAYSTONE: as above		
	5	SANDSTONE: as above FLUORESCENCE : (Trace)		
	3	COAL: as above		
2630.0 - 2640.0	62	CLAYSTONE: white, medium light grey to medium grey, dark grey in part, yellowish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, predominantly soft and amorphous to firm in part, non calcareous; locally with very fine sand and grading to a SILTSTONE in part		
	30	SILTSTONE: as above		
	5	SANDSTONE: as above		
	3	COAL: as above		
2640.0 - 2650.0	62	CLAYSTONE: as above		
	30	SILTSTONE: Pale yellowish brown, medium grey to brownish grey, firm to hard, common black carbonaceous flecks to thin streaks, 1% medium biotite flakes, 1% very fine sand, sub blocky to sub fissile in part and grading to a very fine SANDSTONE in part		
	5	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, sub blocky to sub fissile		
	3	SANDSTONE: loose sand, as above, sandstone aggregate, white to pale yellowish orange, friable, fine to medium, subangular, moderately sorted, trace locally with very fine black carbonaceous flecks, argillaceous matrix, inferred silica cement in part, poor to fair visible porosity		
2650.0 - 2660.0	55	SILTSTONE: Dark yellowish brown to brownish grey, Medium grey in part, firm to hard, common black carbonaceous flecks to thin streaks, 1% medium biotite flakes, 1% very fine sand, sub blocky to sub fissile in part and grading to a very fine SANDSTONE in part; occasional White to grey SHALE, hard, brittle, corrugated texture as a result of friction burning from PDC bit		
	37	CLAYSTONE: as above		
	5	COAL: as above		
	3	SANDSTONE: as above, no show		
2660.0 - 2670.0	60	SILTSTONE: as above		
	27	CLAYSTONE: white, medium light grey to medium grey, dark grey in part, yellowish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, predominantly soft and amorphous to firm in part, non calcareous; locally with very fine sand and grading to a SILTSTONE in part		
	10	COAL: black, sub vitreous to vitreous, sub anthracitic, sub conchoidal fracture, sub blocky to sub fissile		
	3	SANDSTONE: as above, no show		
2670.0 - 2680.0	50	CLAYSTONE: as above		
	44	SILTSTONE: Dark yellowish brown to brownish grey, Medium grey in part, firm to hard, common black carbonaceous flecks to thin streaks, 1% medium biotite flakes,		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	3	1% very fine sand, sub blocky to sub fissile in part and grading to a very fine SANDSTONE in part; occasional White to grey SHALE, hard, brittle, corrugated texture as a result of friction burning from PDC bit SANDSTONE: loose sand, as above, sandstone aggregate, white to pale yellowish orange, friable, fine to medium, subangular, moderately sorted, trace locally with very fine black carbonaceous flecks, argillaceous matrix, inferred silica cement in part, poor to fair visible porosity		
	3	COAL: as above		
2680.0 - 2690.0	50	CLAYSTONE: as above		
	44	SILTSTONE: Dark yellowish brown to brownish grey, Medium grey in part, firm to hard, common black carbonaceous flecks to thin streaks, trace locally with minor microcrystalline pyrite, 1% medium biotite flakes, 1% very fine sand, sub blocky to sub fissile in part and grading to a very fine SANDSTONE in part		
	3	SANDSTONE: loose sand, as above, sandstone aggregate, white to pale yellowish orange, friable, fine to medium, subangular, moderately sorted, trace locally with very fine black carbonaceous flecks, trace locally with very fine muscovite flakes, trace locally with argillaceous matrix in part, trace locally with inferred silica cement in part and infilled pyrite cement in part, nil to fair visible porosity		
	3	COAL: as above		
2690.0 - 2700.0	55	SILTSTONE: as above		
	40	CLAYSTONE: as above		
	3	SANDSTONE: as above		
	2	COAL: as above		
2700.0 - 2710.0	50	CLAYSTONE: white, medium light grey to medium grey, dark grey in part, yellowish grey in part, occasional black and carbonaceous flecks throughout, trace disseminated pyrite, predominantly soft and amorphous to firm in part, non calcareous; locally with very fine sand and grading to a SILTSTONE in part		
	45	SILTSTONE: as above, occasional black coal, as above		
	5	SANDSTONE: Loose sand, Transparent to translucent, very fine to medium and very coarse in part, sub rounded to rounded and angular in part, moderate to poorly sorted, 1% loose muscovite flakes, 1% loose very coarse to granular cryptocrystalline pyrite, poor to fair inferred porosity, sandstone aggregate, as above		
2710.0 - 2720.0	55	SILTSTONE: Dark yellowish brown to brownish grey, Medium grey in part, firm to hard, common black carbonaceous flecks to thin streaks, trace locally with minor microcrystalline pyrite, 1% medium biotite flakes, 1% very fine sand, sub blocky to sub fissile in part and grading to a very fine SANDSTONE in part		
	38	CLAYSTONE: as above		
	7	SANDSTONE: as above		
2720.0 - 2730.0	53	SILTSTONE: as above		
	40	CLAYSTONE: as above		
	7	SANDSTONE: Loose sand, Transparent to translucent, very fine to medium, sub rounded to rounded and very coarse to granular < 2mm, angular, very poorly sorted, occasional loose muscovite flakes, occasional loose very coarse to granular cryptocrystalline pyrite, poor inferred porosity, sandstone aggregate, as above		
2730.0 - 2740.0	45	CLAYSTONE: medium light grey to greyish black, common carbonaceous, rare pyrite, moderately hard to hard, sub blocky to sub fissile		
	35	SILTSTONE: Dark yellowish brown to brownish grey, medium grey, olive grey, firm to hard, common black carbonaceous flecks to thin streaks, microcrystalline pyrite, common very fine sand, rare grading to a very fine SANDSTONE, sub blocky to sub fissile in part		
	20	SANDSTONE: olive grey common very light grey to yellowish grey aggregates, transparent, translucent, very fine to medium grain quartz, well round to sub angular, moderately well sorted, friable aggregates, predominantly loose, olive grey silty matrix, white / yellowish grey argillaceous matrix in part, weak siliceous cement, occasional pyrite cement, trace to abundant carbonaceous material, 5% very coarse sized recrystallised quart, poor visible porosity, no FLUORESCENCE.		
2740.0 - 2750.0	55	CLAYSTONE: as above		
	25	SANDSTONE: as above		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	20	FLUORESCENCE : (1%) > 1% moderately bright yellow natural FLUORESCENCE, slow, moderately dull, green white streaming crush cut SILTSTONE: as above		
2750.0 - 2760.0	100	NOT RECOVERED: as above		
2760.0 - 2770.0	65	CLAYSTONE: medium light grey to greyish black, brownish black, olive grey, common carbonaceous, rare pyrite, silty in part, moderately hard to hard, sub blocky to fissile		
	25	SANDSTONE: olive grey, very light grey to yellowish grey aggregates, transparent, translucent, very fine to medium grain quartz, well round to sub angular, moderately well sorted, friable aggregates, common loose, olive grey silty matrix, grades to SILTY SANDSTONE, white / yellowish grey argillaceous matrix in part, weak siliceous cement, occasional pyrite cement, carbonaceous material in part, trace very coarse sized recrystallised quart, poor to good visible porosity, trace FLUORESCENCE.		
	10	FLUORESCENCE : (1%) > 1% dull yellow natural FLUORESCENCE, slow, dull, green white crush cut SILTSTONE: Dark yellowish brown to brownish grey, olive grey, firm to hard, common black carbonaceous flecks to thin streaks, microcrystalline pyrite, common very fine sand, rare grading to a very fine SANDSTONE, sub blocky to sub fissile in part		
2770.0 - 2780.0	50	CLAYSTONE: medium dark grey to greyish black, brownish black, generally more carbonaceous, common disseminated pyrite, silty in part		
	45	SANDSTONE: very light grey to yellowish grey aggregates, olive grey in part, transparent, translucent, quartz, very fine to medium grain friable aggregates, round to sub angular, moderately well sorted, medium to very coarse, angular and fractured loose re-crystallized quartz, predominantaly loose, olive grey silty matrix in part, white / yellowish grey argillaceous matrix in part, weak to hard siliceous cement, occasional pyrite cement, poor to fair visible porosity, no fluor.		
	5	SILTSTONE: grades from CLAYSTONE		
2780.0 - 2790.0	60	CLAYSTONE: as above		
	25	SANDSTONE: as above		
	15	SILTSTONE: as above		
2790.0 - 2800.0	50	CLAYSTONE: medium dark grey to olive black generally less carbonaceous, trace pyrite, silty in part, sub fissile to fissile		
	45	SANDSTONE: as above, very fine to medium quartz, loose, common white argillaceous matrix - washed out, coarse recrystallised angular quartz fragments		
	5	SILTSTONE: as above		
2800.0 - 2810.0	50	CLAYSTONE: as above		
	45	SANDSTONE: olive grey aggregates, transparent, translucent, quartz, coomon very fine to fine grain friable aggregates, round to sub angular, moderately well sorted, very fine to medium loose quartz, olive grey silty matrix in part, white argillaceous matrix in part, weak to hard siliceous cement, carbonaceous in part, trace pyrite, poor to fair visible porosity, no fluor.		
	5	SILTSTONE: as above		
2810.0 - 2820.0	50	CLAYSTONE: medium dark grey to greyish black, brownish black, olive grey, generally less carbonaceous, common disseminated pyrite, silty in part		
	30	SANDSTONE: as above		
	20	SILTSTONE: brownish grey, olive grey, firm to hard, common black carbonaceous flecks to thin streaks, microcrystalline pyrite, common very fine sand, sub blocky to sub fissile in part		
2820.0 - 2830.0	60	SANDSTONE: very light grey to olive grey aggregates, occasional white, transparent, translucent, quartz, very fine to medium grain friable aggregates, round to angular, moderately well sorted, medium to coarse, angular and fractured loose re-crystallized quartz, predominantaly loose, white / yellowish grey argillaceous matrix - washed out, inferred weak siliceous cement, trace pyrite, poor to fair visible porosity, no fluor.		
	35	CLAYSTONE: medium dark grey to greyish black, brownish black, olive grey, generally less carbonaceous, trace disseminated pyrite, silty in part sub blocky to fissile		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2820.0 - 2830.0	5	SILTSTONE: Pale yellowish brown to pale brown to medium grey, firm to hard, common black carbonaceous flecks to thin streaks, 1% very fine sand, sub blocky - sub fissile in part and grading to a very fine SANDSTONE in part; black COAL, as above, in part		
2830.0 - 2840.0	60	SILTSTONE: olive grey, medium dark grey, carbonaceous in part, coaly laminae in part, common very fine round quartz, hard, friable in part, sub fissile		
	20	CLAYSTONE: olive grey, medium dark grey, carbonaceous in part, coaly laminae in part, silty, hard, sub fissile to fissile		
	20	SANDSTONE: as above predominantly olive grey to light olive grey, very fine to fine grain, silty, argillaceous, friable, pyrite cement in part,		
2840.0 - 2850.0	40	SANDSTONE: as above, generally cleaner, less argillaceous material, predominately loose with more fractured recrystallised quartz, intergranular pyrite, fine to medium		
	40	SILTSTONE: as above		
	20	CLAYSTONE: as above		
2850.0 - 2860.0	40	CLAYSTONE: as above		
	30	SANDSTONE: olive grey aggregates, transparent, translucent, quartz, rare very fine to medium grain friable aggregates, round to angular, moderately well sorted, medium to coarse, angular and fractured loose re-crystallized quartz, predominately loose, very light grey to olive grey argillaceous / silty matrix - washed out, inferred weak siliceous cement, trace intergranular pyrite, trace carbonaceous material, poor to fair visible porosity, trace fluor.		
	30	SILTSTONE: as above		
2860.0 - 2870.0	40	SANDSTONE: as above, trace fluor. FLUORESCENCE : (Nil Direct) >1 % dull yellow natural mineral fluorescence		
	40	SILTSTONE: as above		
	20	CLAYSTONE: olive grey, medium dark grey, carbonaceous in part, trace coaly laminae, silty, hard, sub fissile to fissile		
2870.0 - 2880.0	40	SILTSTONE: olive grey, medium dark grey, carbonaceous in part, coaly laminae in part, common very fine round quartz, hard, friable in part, sub fissile		
	30	CLAYSTONE: olive grey, medium dark grey, carbonaceous in part, trace coaly laminae, silty, hard, sub fissile to fissile		
	30	SANDSTONE: as above, white very light grey, transparent, loose, fine to very coarse, angular, common fractured grains, trace pyrite, rare friable to hard aggregates, white argillaceous matrix, rare siliceous cement, rare pyrite, no to fair visible porosity, no show FLUORESCENCE : (Nil Direct)		
2880.0 - 2890.0	50	CLAYSTONE: olive grey, occasional medium dark grey, silty in part, hard, sub fissile to fissile		
	30	SANDSTONE: as above, white, very light grey, olive grey, transparent, fine to medium, well rounded to sub round, well sorted, friable to hard aggregates, white argillaceous matrix in part, olive grey argillaceous matrix in part, strong siliceous cement in part, common loose, trace fractured grains, rare pyrite, no to fair visible porosity, no show FLUORESCENCE : (Nil Direct)		
	20	SILTSTONE: light olive grey to olive grey, brownish grey, carbonaceous material in part, sandy in part, hard to rare very hard, sub blocky, sub fissile		
2890.0 - 2900.0	40	CLAYSTONE: as above - coaly laminations		
	40	SANDSTONE: as above FLUORESCENCE : (Nil Direct)		
	20	SILTSTONE: as above increase in brownish grey colours		
2900.0 - 2905.0	40	SANDSTONE: as above, white, very light grey, transparent, fine to medium, well rounded to sub round, well sorted, friable to hard aggregates, white argillaceous matrix in part, olive grey argillaceous matrix in part, strong siliceous cement in part, pyrite cement in part, common loose, trace fractured grains, no to fair visible porosity, no show FLUORESCENCE : (Nil Direct)		
	39	SILTSTONE: dusky yellowish brown, light olive grey to olive grey, brownish grey,		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	20 1	carbonaceous material in part, sandy in part, soft to rare very hard, sub blocky, sub fissile CLAYSTONE: as above COAL: COAL: black, dull, sub anthracitic, trace pyrite, very hard, fissile		
2905.0 - 2910.0	40 39 20 1	SANDSTONE: as above - cleaner, less argillaceous matrix visible, increase in pyrite and abundant recrystallised quartz, abundant white rock flour. SILTSTONE: as above CLAYSTONE: medium dark grey, olive grey, silty in part, firm, hard, sub fissile to fissile COAL: as above		
2910.0 - 2915.0	40 38 20 1 1	SANDSTONE: as above, abundant coarse to very coarse fractured quartz fragments SILTSTONE: as above CLAYSTONE: as above, locally pyritic COAL: as above VOLCANIC: pale green, black, siliceous, cryptocrystalline, very hard, angular fracture		
2915.0 - 2920.0	50 40 10	SANDSTONE: as above SILTSTONE: dusky yellowish brown, light olive grey to olive grey, brownish grey, carbonaceous material, abundant pyrite, common to abundant very fine to fine round qtz, commonly washed out in tray, soft to rare hard, sub blocky, sub fissile CLAYSTONE: medium dark grey, olive grey, trace pale green, homogenous, firm to locally very hard, sub fissile		
2920.0 - 2925.0	70 25 5	SANDSTONE: white, very light grey, transparent, translucent, fine to medium, well rounded to sub round, coarse to very coarse angular aggregates, well sorted, friable to very hard aggregates, trace very white argillaceous matrix in part, strong siliceous cement in part, pyrite cement in part, trace rose colored quartz, abundant recrystallised fractured grains, no to fair visible porosity, no show SILTSTONE: as above CLAYSTONE: as above		
2925.0 - 2930.0	70 25 5	SANDSTONE: as above, trace chert SILTSTONE: as above CLAYSTONE: medium dark grey, grey black, olive grey, trace pale green, locally pyritic, firm to locally very hard, sub fissile		
2930.0 - 2935.0	70 25 5	SANDSTONE: as above SILTSTONE: as above CLAYSTONE: as above		
2935.0 - 2940.0	89 5 5 1	SANDSTONE: very light grey, transparent, translucent, fine to medium, well rounded to sub round, coarse to very coarse angular aggregates, well sorted, friable to very hard aggregates, trace very white argillaceous matrix in part, strong siliceous cement in part, pyrite cement in part, trace rose colored quartz, as above trace chert, abundant recrystallised fractured grains, no to poor visible porosity, no show SILTSTONE: dusky yellowish brown, light olive grey to olive grey, brownish grey, carbonaceous material, abundant pyrite, common to abundant very fine to fine round qtz, commonly washed out in tray, soft to rare hard, sub blocky, sub fissile CLAYSTONE: medium dark grey, olive grey, trace pale green, homogenous, firm to locally very hard, sub fissile VOLCANIC: pale green, black, siliceous, cryptocrystalline, very hard, angular fracture		
2940.0 - 2945.0	60 20 10 10	SANDSTONE: as above SILTSTONE: as above CLAYSTONE: as above VOLCANIC: as above		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		First sample after Bottoms up from bit trip - likely large percentage of claystone and siltstone cavings		
2945.0 - 2955.0	72	SANDSTONE: transparent, translucent, fine to medium, well rounded to sub angular, well sorted, coarse to very coarse angular - friable to very hard aggregates, trace white argillaceous matrix in part, strong siliceous cement in part, lithics, trace chert, abundant recrystallised fractured grains, no to poor visible porosity, no show		
	15	VOLCANIC: pale green, trace light blue green, trace dark greenish grey minerals, abundant yellowish grey and rare white clay alteration, siliceous, pyritic, microcrystalline, firm to hard, friable, sub-blocky.		
	8	SILTSTONE: dusky yellowish brown, light olive grey to olive grey, brownish grey, carbonaceous material, hard, sub blocky, sub fissile		
	5	CLAYSTONE: medium grey, light olive grey, dark grey in part, firm to hard, silicified in part and very hard, sub blocky to fissile		
2955.0 - 2960.0	45	SANDSTONE: very light grey, transparent, translucent, milky in part, fine to medium, well rounded to sub ang, well sorted, coarse to very coarse angular friable to very hard aggregates, trace white siliceous matrix, strong silica cement in part, rare to common pyrite, abundant recrystallised fractured grains, no to moderately good visible porosity, no show		
	30	VOLCANIC: as above, less altered in some cuttings, greyish black, deep green coloured minerals in part.		
	25	CLAYSTONE: medium grey to dark grey, olive grey to light brownish grey, common pyrite, silty in part, firm to very hard, sub blocky to sub angular, trace fissile		
2960.0 - 2965.0	50	VOLCANIC: as above, + light bluish grey groundmass, common chloritic and kaolinitic? alteration, trace quartz / chert veins		
	35	SANDSTONE: as above		
	15	CLAYSTONE: as above, brownish grey - olive grey, siliceous yellowish grey, firm, subblocky- altered volcanics		
2965.0 - 2970.0	45	VOLCANIC: pale green to moderate blue green, trace light blue green, trace light bluish grey groundmass, abundant yellowish grey, common chloritic and kaolinitic? alteration, deep green minerals, siliceous, pyritic, microcrystalline, firm to hard, friable, sub-blocky.		
	40	SANDSTONE: as above, trace coarse euhedral pyrite, and pyritic cement, trace SANDSTONE: transparent quartz, very fine to fine, round to sub round, trace angular, very well sorted, weak friable aggregates, weak calcareous cement in part, trace white - pale green argillaceous material, good visible porosity, no show		
	15	CLAYSTONE: as above, trace pyritic micro-veins		
2970.0 - 2975.0	45	VOLCANIC: as above		
	40	SANDSTONE: as above -predominatly recrystallised quartz, angular very coarse fractured cuttings,		
	15	CLAYSTONE: brownish grey, olive grey, medium to trace dark grey, trace carbonaceous material, firm to hard, sub blocky, sub fissile		
2975.0 - 2980.0	60	SANDSTONE: transparent, translucent, milky in part, quartz, fine to medium, rounded to sub angular, well sorted, coarse to very coarse angular very hard cuttings, trace white siliceous matrix, strong silica cement in part, trace weak calcareous, trace to rare pyrite, abundant recrystallised fractured grains, no to poor visible porosity, trace fluorescence		
	20	CLAYSTONE: as above		
	20	VOLCANIC: as above		
2980.0 - 2985.0	80	SANDSTONE: as above - increase in nodular and intergranular pyrite, generally cleaner and loose		
	15	CLAYSTONE: as above no carbonaceous material, trace silicified with pyrite veins		
	5	VOLCANIC: as above		
2985.0 - 2990.0	80	SANDSTONE: transparent, translucent, milky in part, quartz, fine to coarse rounded to sub angular, well sorted, coarse to very coarse angular very hard cuttings, trace white siliceous matrix, strong silica cement in part, trace weak calcareous, rare to common pyrite, occasional lithics, abundant recrystallised fractured grains, no to poor visible porosity, trace fluorescence		
	15	CLAYSTONE: as above		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2985.0 - 2990.0	5	VOLCANIC: as above		
2990.0 - 2995.0	80	SANDSTONE: as above, fine to medium, trace to rare pyrite, predominantly loose recrystallised quartz		
	15	CLAYSTONE: medium grey to dark grey, silicified, brittle, hard to very hard, sub blocky to angular,		
	5	VOLCANIC: as above - cavings		
2995.0 - 3000.0	90	SANDSTONE: as above, clean, angular coarse grain fragments, less pyrite		
	10	CLAYSTONE: as above		
3000.0 - 3005.0	95	SANDSTONE: as above		
	5	CLAYSTONE: as above		
3005.0 - 3010.0	80	SANDSTONE: as above, fine to medium, predominantly re-crystallized, clean, angular coarse grain fragments, less pyrite		
	20	CLAYSTONE: medium grey to dark grey, silicified in part, silty in part, hard to very hard, sub blocky to angular		
3010.0 - 3015.0	70	SANDSTONE: as above, dominantly translucent quartz, rare aggregates with pale chloritic and pyritic intergranular matrix, trace weak calcareous in part		
	20	CLAYSTONE: as above, very fine disseminated pyrite in part, fissile		
	10	SILTSTONE: brownish black, trace micaceous, moderately carbonaceous in part, moderately calcareous, firm, sub fissile		
3015.0 - 3020.0	90	SANDSTONE: as above, rare aggregates with pale chloritic and pyritic intergranular matrix,		
	5	CLAYSTONE: as above more homogenous, less accessories, medium blush grey, very hard, angular, fissile		
	5	SILTSTONE: as above		
3020.0 - 3025.0	84	SANDSTONE: as above, translucent quartz, abundant re-crystallization, clean, hard aggregates, siliceous cement, no visible porosity, FLOURESENCE: trace very light grey aggregates of very fine quartz, round, very well sorted, quartz silt matrix, non calcareous FLUORESCENCE : (1%) natural dull yellow and moderately bright green yellow fluorescence, no cut		
	15	CLAYSTONE: medium grey to dark grey, medium blush grey, trace brownish grey, silicified in part, hard to very hard, sub blocky to angular, fissile		
	1	SILTSTONE: as above		
3025.0 - 3030.0	85	SANDSTONE: translucent, transparent, quartz, fine to medium, trace very fine, rounded to sub angular, well sorted, coarse to very coarse size angular very hard aggregates, trace white siliceous matrix, strong silica cement, rare whitish pale green chloritic? matrix, abundant recrystallised quartz, fractured grains, no to poor visible porosity, no hydrocarbon fluorescence		
	15	CLAYSTONE: as above		
3030.0 - 3035.0	90	SANDSTONE: as above, trace moderately calcareous silty aggregates		
	10	CLAYSTONE: as above		
3035.0 - 3040.0	85	SANDSTONE: translucent, transparent, quartz, fine to medium, trace very fine, rounded to sub angular, well sorted, coarse to very coarse size angular very hard aggregates, trace white siliceous matrix, strong silica cement, rare whitish pale green chloritic? matrix, abundant recrystallised quartz, fractured grains, trace nodular pyrite, no to poor visible porosity, no hydrocarbon fluorescence		
	15	CLAYSTONE: medium grey to dark grey, medium blush grey, trace greenish grey, silicified, quartz silt in part, hard to very hard, brittle in part sub blocky to angular, fissile		
3040.0 - 3045.0	85	SANDSTONE: as above, predominantly fine to medium grain, sub round to angular, porosity visible porosity 5% very light grey very light brownish aggregates of very fine quartz, round, very well sorted, quartz silt matrix, non to trace moderately calcareous, trace muscovite and biotite flakes, grades from SILTSTONE		
	20	SILTSTONE: brownish grey brownish black, occasional biotite and muscovite, quartz silt, grading to very fine SANDSTONE, local abundant very fine nodular pyrite,		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	15	soft to firm, sub fissile CLAYSTONE: as above		
3045.0 - 3050.0	65	SANDSTONE: as above		
	20	SILTSTONE: as above 50% with light olive grey clay alteration matrix, common very fine round quartz, grading to SANDSTONE		
	15	CLAYSTONE: as above		
3050.0 - 3055.0	50	SANDSTONE: light olive grey, brownish grey, transparent, translucent quartz, very fine to fine, common medium, round to sub round, very well sorted, common loose coarse translucent quartz olive grey clay matrix, quartz silt, friable, weak siliceous cement, trace calcareous, black mica? speks, occasional carbonaceous? speks, trace very fine nodular pyrite, abundant translucent re-crystallized fractured quartz, poor to good visible porosity, no show		
	40	SILTSTONE: brownish grey brownish black, occasional biotite and muscovite, quartz silt, grading to very fine SANDSTONE, trace very fine nodular pyrite, soft to firm, friable, sub fissile		
	10	CLAYSTONE: medium grey to dark grey, silicified, trace black lamiations, hard to very hard, brittle in part sub blocky to angular, fissile		
3055.0 - 3060.0	50	SANDSTONE: as above light olive grey, light grey, very fine to medium, quartz, moderately sorted, olive grey argillaceous matrix, friable, weak siliceous cement, trace calcareous, carbonaceous speks, quartz silt, trace very fine nodular py, poor visible porosity no hydrocarbon fluorescence		
	45	SILTSTONE: as above, common carbonaceous material,		
	5	CLAYSTONE: as above		
3060.0 - 3065.0	50	SANDSTONE: as above		
	45	SILTSTONE: brownish grey brownish black, occasional biotite and muscovite, quartz silt, grading to very fine SANDSTONE, trace very fine nodular pyrite, soft to firm, friable, sub fissile		
	5	CLAYSTONE: as above		
3065.0 - 3070.0	50	SANDSTONE: translucent, transparent, quartz, fine to medium, sub rounded to sub angular, well sorted, coarse to very coarse size angular very hard aggregates, trace white siliceous matrix, strong silica cement, rare whitish pale green and olive grey argillaceous matrix, abundant recrystallised quartz, fractured grains, no to poor visible porosity, no hydrocarbon fluorescence		
	35	SILTSTONE: brownish grey, brownish black, carbonaceous material, quartz silt, very fine to fine quartz, grading to very fine SANDSTONE in part, trace very fine nodular pyrite, firm, friable, sub fissile		
	15	CLAYSTONE: medium grey to dark grey, silicified, quartz silt in part, trace black lamiations, hard to very hard, brittle in part, sub blocky to angular, fissile		
3070.0 - 3075.0	55	SANDSTONE: as above		
	40	SILTSTONE: as above		
	5	CLAYSTONE: as above		
3075.0 - 3080.0	55	SANDSTONE: as above		
	37	SILTSTONE: as above		
	8	CLAYSTONE: medium grey to dark grey, silicified, hard to trace very hard, sub blocky to angular, fissile		
3080.0 - 3085.0	75	SANDSTONE: translucent, transparent, quartz, fine to medium, locally very fine, sub rounded to sub angular, well sorted, coarse to very coarse size angular very hard aggregates, trace white siliceous matrix, strong silica cement, rare whitish pale green and olive grey argillaceous matrix, abundant recrystallised quartz, fractured grains, no to poor visible porosity, no hydrocarbon fluorescence. light olive grey, light grey, very fine to medium, quartz, moderately sorted, olive grey argillaceous matrix, friable, weak siliceous cement, trace calcareous, carbonaceous speks, quartz silt, trace very fine nodular py, poor visible porosity no hydrocarbon fluorescence		
	20	SILTSTONE: brownish grey, brownish black, carbonaceous material, quartz silt,		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
	5	very fine to fine quartz, grading to very fine SANDSTONE in part, trace very fine nodular pyrite, trace pyritic veins, firm, friable, sub fissile CLAYSTONE: as above		
3085.0 - 3090.0	83 15 2	SANDSTONE: as above SILTSTONE: as above CLAYSTONE: medium grey to dark grey, silicified, trace disseminated pyrite, hard to trace very hard, sub blocky to angular, fissile		
3090.0 - 3095.0	65 30 5	SANDSTONE: light olive grey, light grey, translucent, transparent, quartz, very fine to medium, sub rounded to sub angular, moderately sorted, light olive grey light grey argillaceous matrix, trace white siliceous matrix, friable, weak to locally strong siliceous cement, trace calcareous, carbonaceous specks, quartz silt, trace very fine nodular pyrite, common re-crystallized quartz, fractured grains, no to poor visible porosity, no hydrocarbon fluorescence. FLUORESCENCE : (1%) pin point dull to moderately bright yellow natural fluorescence, no cut SILTSTONE: brownish grey, brownish black, carbonaceous material, quartz silt, very fine to fine quartz, grading to very fine SANDSTONE in part, trace very fine nodular pyrite, trace pyritic veins, firm, friable, sub fissile CLAYSTONE: as above		
3095.0 - 3100.0	50 30 20	SILTSTONE: as above SANDSTONE: light olive grey, light grey, friable, commonly loose, very fine to medium, quartz, moderately sorted, trace calcareous, carbonaceous specks, trace quartz silt, common translucent coarse quartz grains, trace very fine nodular pyrite, olive grey argillaceous matrix, weak siliceous cement, poor visible porosity, no show CLAYSTONE: medium grey to dark grey, light greenish grey, hard to trace very hard, subfissile to fissile and sub blocky in part, silicified, trace disseminated pyrite, trace carbonaceous specks, fissile		
3100.0 - 3105.0	50 40 10	SILTSTONE: olive grey, brownish grey, carbonaceous material, quartz silt, very fine to fine quartz, grading to very fine SANDSTONE in part, trace very fine nodular pyrite, trace pyritic veins, firm, friable, sub fissile SANDSTONE: as above FLUORESCENCE : (1%) pin point dull to moderately bright yellow, bright green yellow natural fluorescence, no cut CLAYSTONE: as above		
3105.0 - 3110.0	50 40 10	SILTSTONE: brownish grey, brownish black, carbonaceous material, firm to hard, subblocky to subfissile, very fine to fine quartz and grading to very fine SANDSTONE in part, trace very fine nodular pyrite, trace pyritic veins; occasional black SHALE, hard to brittle, fissile; 1% Black coal, as previously described and most likely transported from uphole. SANDSTONE: Loose sand, translucent to transparent, occasional light olive grey, fine to coarse, very fine in part, very coarse in part, angular when coarse to subrounded when fine, poorly to moderately sorted; minor sandstone aggregate, olive grey to light olive grey, translucent in part, friable to very hard in part, fine to medium and coarse in part, subrounded to angular, minor medium, muscovite and biotite flakes, trace microcrystalline pyrite, argillaceous matrix, weak infilled silica cement to hard silicified, recrystallised, poor visible porosity, no show CLAYSTONE: medium grey to dark grey, light greenish grey, hard to trace very hard, subfissile to fissile and sub blocky in part, silicified, trace disseminated pyrite, trace carbonaceous specks, fissile		
3110.0 - 3115.0	55 40 5	SANDSTONE: as above, Sandstone aggregate, locally trace with common pyrite replaced cement FLUORESCENCE : (1%) 1% dull to bright yellow mineral fluorescence, very slow streaming cut, bright yellow mineral fluorescence, no residual ring SILTSTONE: as above CLAYSTONE: as above		
3115.0 - 3120.0	50 45	SILTSTONE: as above SANDSTONE: as above FLUORESCENCE : (5%) 2% dull to bright yellow mineral fluorescence, moderately fast streaming cut, bright yellow strong mineral fluorescence, thin weak yellow fluorescing residual ring		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
3115.0 - 3120.0	5	CLAYSTONE: as above, 1% white, soft, amorphous, homogenous, non-calcareous		
3120.0 - 3125.0	50	SILTSTONE: brownish grey, brownish black, carbonaceous material, firm to hard, subblocky to subfissile, very fine to fine quartz and grading to very fine SANDSTONE in part, trace very fine nodular pyrite, trace pyritic veins; 1% black SHALE, hard to brittle, fissile; occasional black coal, as previously described and most likely transported from uphole.		
	45	SANDSTONE: as above FLUORESCENCE : (Trace) pin point dull to bright yellow mineral fluorescence, no cut		
	5	CLAYSTONE: Trace, white, soft, amorphous, homogenous, non-calcareous and occasional medium grey to dark grey, light greenish grey, hard to trace very hard, subfissile to fissile and sub blocky in part, silicified, trace disseminated pyrite, trace carbonaceous specks, fissile		
3125.0 - 3130.0	100	NOT RECOVERED: Lag was unable to be reset properly and consequently sample not recovered		
3130.0 - 3137.0	50	SANDSTONE: Loose sand, translucent to transparent, occasional light olive grey, fine to coarse, very fine in part, very coarse in part, angular when coarse to subrounded when fine, poorly to moderately sorted; minor sandstone aggregate, olive grey to light olive grey, translucent in part, friable to very hard in part, fine to medium and coarse in part, subrounded to angular, minor medium, muscovite and biotite flakes, trace microcrystalline pyrite, locally trace with common pyrite replaced cement, argillaceous matrix, weak infilled silica cement to hard silicified, recrystallised, poor visible porosity, no show FLUORESCENCE : (Trace) pin point dull to bright yellow mineral fluorescence, no cut		
	45	SILTSTONE: brownish grey, brownish black, carbonaceous material, firm to hard, subblocky to subfissile, very fine to fine quartz and grading to very fine SANDSTONE in part, trace very fine nodular pyrite, trace pyritic veins; 1% black SHALE, hard to brittle, fissile; occasional black coal, as previously described and most likely transported from uphole.		
	5	CLAY: white, soft, amorphous, homogenous, non-calcareous Sample used for Bottoms Up due to faulty lag depth calculation		