

LAKES OIL N.L.**CUTTINGS DESCRIPTIONS****WELL NAME:** Echidna High No.1**DATE:** 26-02-05**GEOLOGIST:** David Horner**PAGE:** 1

Interval (m)	%	Description
12-20	100	SAND: light orange, very fine to very coarse, dominantly coarse, subrounded to well rounded, poorly sorted, no visible cement, common light orange yellow clay and silt matrix in part, opaque to milky quartz grains often with orange brown iron oxide staining, trace red brown iron oxide pellets, trace grey cherty lithics, unconsolidated, very good inferred porosity, no oil fluorescence.
20-30	100	SAND: light to medium yellow orange, very fine to grit, dominantly very coarse, subrounded to well rounded, poorly sorted, no visible cement, trace light orange yellow clay and silt matrix, opaque to milky quartz grains often with orange brown iron oxide staining, common red brown iron oxide pellets, trace grey cherty lithics, unconsolidated, very good inferred porosity, no oil fluorescence.
30-40	100	SAND: light to medium yellow orange, very fine to pebble, dominantly very coarse, subrounded to well rounded, poorly sorted, rare strong iron oxide cement, trace light orange yellow clay and silt matrix, opaque to milky quartz grains often with orange brown iron oxide staining, common red brown iron oxide pellets, trace grey cherty lithics, unconsolidated, very good inferred porosity, no oil fluorescence.
40-60	100	SAND: medium yellow orange, very fine to grit, dominantly coarse, subrounded to well rounded, poorly sorted, rare strong iron oxide cement, common light orange yellow clay and silt matrix, opaque to milky quartz grains often with orange brown iron oxide staining, common red brown iron oxide pellets, trace grey cherty and black lithics, unconsolidated, very good inferred porosity, no oil fluorescence.
60-70	50	SAND: as for 40-60m.
	50	MARL: medium green grey, abundant fossil fragments including shell fragments, gastropods, echinoid spines, sponge spicules, bryozoa and forams, trace black carbonaceous material, trace light green glauconite, (clay portion washing from sample), very soft, sticky, non fissile.
70-80	10	SAND: as for 40-60m.
	90	MARL: medium green grey, abundant fossil fragments including shell fragments, gastropods, echinoid spines, sponge spicules, bryozoa and forams, trace black carbonaceous material, trace light green glauconite, very soft, sticky, non fissile.
80-90	100	MARL: as for 70-80m.
90-110	50	CALCARENITE: light to medium green grey, very fine, moderate calcareous cement, abundant fossil fragments, trace to common light green glauconite, trace black carbonaceous material, moderately to very argillaceous, moderately hard, no visual porosity, no oil fluorescence.
	50	MARL: as for 70-80m.
110-120	80	CALCARENITE: light to medium green grey, very fine to medium, moderate calcareous cement, abundant fossil fragments, trace light green glauconite, trace black carbonaceous material, moderately to very argillaceous, moderately hard, no visual porosity, no oil fluorescence.
	20	MARL: as for 70-80m.
120-130	100	CALCARENITE: as for 110-120m.
130-160	100	CALCARENITE: light to medium green grey, very fine to medium, moderate calcareous cement, abundant fossil fragments, trace light green glauconite, trace black carbonaceous material, moderately argillaceous, moderately hard, no visual porosity, no oil fluorescence.

Interval (m)	%	Description	PAGE: 2
160-170	90	CALCARENITE: as for 130-160m.	
	10	MARL: medium brown grey, abundant fossil fragments including shell fragments, gastropods, echinoid spines, sponge spicules, bryozoa and forams, trace black carbonaceous material, trace glauconite, soft, non fissile.	
170-210	100	CALCARENITE: light to medium green grey, very fine to fine, moderate calcareous cement, abundant fossil fragments, common light green to black glauconite, trace black carbonaceous material, moderately argillaceous, moderately hard, no visual porosity, no oil fluorescence.	
210-240	100	CALCARENITE: off white to medium green grey, very fine to fine, weak calcareous cement, calcilutitic in part, abundant fossil fragments, common light green to black glauconite, trace black carbonaceous material, moderately argillaceous, moderately hard, no visual porosity, no oil fluorescence.	
240-275	100	CALCARENITE: off white to medium green grey, very fine to fine, weak calcareous cement, calcilutitic in part, abundant fossil fragments, common light green to black glauconite, trace black carbonaceous material, slightly to moderately argillaceous, moderately hard, no visual porosity, no oil fluorescence.	
275-290	100	CALCARENITE: off white to light green grey to light brown grey, very fine to fine, weak calcareous cement, calcilutitic in part, moderately argillaceous and marly in part, abundant fossil fragments, trace light green to black glauconite, trace black carbonaceous material, moderately hard, no visual porosity, no oil fluorescence.	
290-295	90	CALCARENITE: as for 275-290m.	
	10	MARL: light to medium brown grey, very calcareous, common bryozoa and fossil fragments, trace glauconite, soft, non fissile.	
295-310	80	CALCARENITE: off white to light green grey to light brown grey, very fine to fine, weak calcareous cement, calcilutitic in part, moderately argillaceous and marly in part, abundant bryozoa and fossil fragments, trace light green to black glauconite, trace black carbonaceous material, moderately hard, no visual porosity, no oil fluorescence.	
	20	MARL: as for 290-295m.	
310-320	70	CALCARENITE: as for 295-310m.	
	30	MARL: as for 290-295m.	
320-325	80	CALCARENITE: off white to light green grey to light brown grey, very fine to fine, weak to occasionally strong calcareous cement, rarely strong dolomite cement, calcilutitic in part, moderately argillaceous and marly in part, abundant bryozoa and fossil fragments, trace light green to black glauconite, trace black carbonaceous material, friable to occasionally hard, no visual porosity, no oil fluorescence.	
	20	MARL: as for 290-295m.	
325-335	90	CALCARENITE: as for 320-325m.	
	10	MARL: as for 290-295m.	
335-355	80	CALCARENITE: off white to light green grey to light brown grey, very fine to fine, weak to occasionally strong calcareous cement, calcilutitic in part, moderately argillaceous and marly in part, abundant bryozoa and fossil fragments, trace light green to black glauconite, trace black carbonaceous material, friable to occasionally hard, no visual porosity, no oil fluorescence.	
	20	MARL: as for 290-295m.	
355-365	90	CALCARENITE: off white to light green grey to light brown grey, very fine to fine, weak to occasionally strong calcareous cement, often very calcilutitic, moderately argillaceous and marly in part, common bryozoa and fossil fragments, trace light green to black glauconite, trace black carbonaceous material, friable to hard, no visual porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 3
	10	MARL: as for 290-295m.	
365-380	80	CALCARENITE: as for 355-365m.	
	20	MARL: light to medium brown grey, very calcareous grading to calcilutite, common bryozoa and fossil fragments, rare glauconite, soft, non fissile.	
380-390	90	CALCARENITE: as for 355-365m.	
	10	MARL: as for 365-380m.	
390-395	70	CALCARENITE: off white to light brown grey to light green grey, very fine to fine, weak to strong calcareous cement, often very calcilutitic, moderately to very argillaceous and marly in part, common bryozoa and fossil fragments, trace glauconite, trace black carbonaceous material, friable to hard, no visual porosity, no oil fluorescence.	
	30	MARL: as for 365-380m.	
395-400	60	CALCARENITE: as for 390-395m.	
	40	MARL: as for 365-380m.	
400-410	10	CALCARENITE: as for 390-395m.	
	90	MARL: medium grey to medium brown grey to medium green grey, moderately to very calcareous, trace fossil fragments, rare glauconite, firm, non fissile.	
410-425	100	MARL: off white to medium grey to medium green grey to medium brown grey, moderately to very calcareous - calcilutitic in part, trace fossil fragments, rare glauconite, firm, non fissile.	
425-450	100	MARL: off white to medium green grey to medium grey, moderately to very calcareous - calcilutitic in part, trace fossil fragments, rare glauconite, firm, non fissile.	
450-465	100	MARL: off white to medium green grey to medium grey, moderately to very calcareous - calcilutitic in part, trace fossil fragments, trace glauconite, firm, non fissile.	
465-475	100	MARL: off white to medium green grey to medium grey, moderately to very calcareous - calcilutitic in part, trace fossil fragments, common glauconite, trace pyrite, firm, non fissile.	
475-485	100	MARL: off white to medium green grey to medium grey, moderately to very calcareous - calcilutitic in part, trace fossil fragments, abundant glauconite, common pyrite, firm, non fissile.	
485-490	10	SANDSTONE: light grey, very fine to coarse, dominantly coarse, subangular to rounded, moderately sorted, very weak silica cement, common dark grey argillaceous and silt matrix, clear to opaque quartz grains, abundant black coal detritus, friable, very good inferred porosity, no oil fluorescence.	
	10	COAL: black to very dark brown, very argillaceous in part - dominantly clean, irregular to blocky fracture, earthy to slightly subvitreous lustre, trace pyrite, firm to hard and brittle.	
	80	MARL: as for 475-485m.	
490-495	10	SANDSTONE: as for 485-490m.	
	80	COAL: as for 485-490m.	
	10	MARL: as for 475-485m.	
495-500	10	CLAYSTONE: dark grey, moderately to very silty, slightly carbonaceous, common black coal detritus, soft, very dispersive, non fissile.	
	90	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, trace pyrite, firm to hard and brittle.	

Interval (m)	%	Description	PAGE: 4
500-505	100	COAL: as for 495-500m.	
505-510	60	SANDSTONE: light brown, very fine to very coarse, dominantly very coarse, subangular to subrounded, poorly sorted, very weak silica cement, common medium brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, rare pyrite, loose to friable, good inferred porosity, no oil fluorescence.	
	40	CLAYSTONE: medium to dark brown, moderately to very silty, moderately carbonaceous, common black coal detritus, soft, very dispersive, non fissile.	
510-520	100	SANDSTONE: light brown grey, fine to very coarse, dominantly very coarse, subangular to subrounded, poorly sorted, very weak silica cement, trace medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, loose to friable, very good inferred porosity, no oil fluorescence.	
520-540	100	SANDSTONE: very light brown, fine to very coarse, dominantly very coarse, subangular to subrounded, poorly sorted, very weak silica cement, trace medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, loose to friable, very good inferred porosity, no oil fluorescence.	
540-550	50	SANDSTONE: as for 520-540m.	
	40	CLAYSTONE: medium brown, moderately to very silty, slightly carbonaceous, common dispersed very fine to very coarse quartz sand grains in part, common black coal detritus, soft, very dispersive, non fissile.	
	10	COAL: as for 550-570m.	
550-570	100	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, trace pyrite, firm to hard and brittle.	
570-580	50	SANDSTONE: as for 520-540m.	
	10	CLAYSTONE: as for 540-550m.	
	40	COAL: as for 550-570m.	
580-590	100	CLAYSTONE: medium to dark brown, often very silty, slightly carbonaceous, common dispersed very fine to very coarse quartz sand grains in part, common black coal detritus, soft, very dispersive, non fissile.	
590-600	10	SANDSTONE: as for 520-540m.	
	90	COAL: as for 550-570m.	
600-610	100	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, trace pyrite, firm to hard and brittle.	
610-615	20	CLAYSTONE: medium to dark brown to dark grey, often very silty, moderately carbonaceous, trace dispersed very fine to very coarse quartz sand grains in part, common black coal detritus, soft, very dispersive, non fissile.	
	80	COAL: as for 600-610m.	
615-620	10	SANDSTONE: very light brown, very fine to very coarse, dominantly very coarse, subangular to subrounded, poorly sorted, very weak silica cement, trace medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, loose to friable, very good inferred porosity, no oil fluorescence.	
	80	CLAYSTONE: as for 610-615m.	
	10	COAL: as for 600-610m.	

Interval (m)	%	Description	PAGE: 5
620-630	30	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, very weak silica cement, abundant medium brown argillaceous and silt matrix- matrix supported, clear to opaque quartz grains, trace black coal detritus, rare pyrite, friable, poor inferred porosity, no oil fluorescence.	
	70	CLAYSTONE: medium to dark brown grey, very silty, moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, common black coal detritus, soft, very dispersive, non fissile.	
630-640	20	SANDSTONE: as for 620-630m.	
	80	CLAYSTONE: as for 620-630m.	
640-650	70	SANDSTONE: light brown, very fine to grit, dominantly coarse, angular to subrounded, very poorly sorted, very weak silica cement, common to abundant medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, friable, good inferred porosity, no oil fluorescence.	
	30	CLAYSTONE: medium to dark brown grey, very silty, moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, common black coal detritus, soft, very dispersive, non fissile.	
650-660	50	SANDSTONE: light brown, very fine to grit, dominantly coarse, angular to subrounded, very poorly sorted, very weak silica cement, abundant medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, friable, good inferred porosity, no oil fluorescence.	
	50	CLAYSTONE: medium to dark brown grey, very silty, moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, common black coal detritus, soft, very dispersive, non fissile.	
660-670	40	SANDSTONE: as for 650-660m.	
	60	CLAYSTONE: as for 650-660m.	
670-680	70	SANDSTONE: as for 650-660m.	
	30	CLAYSTONE: as for 650-660m.	
680-690	20	SANDSTONE: as for 650-660m.	
	40	CLAYSTONE: dark brown to grey black, very silty, very carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, soft, very dispersive, non fissile.	
	40	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, trace pyrite, firm to hard and brittle.	
690-710	10	SANDSTONE: as for 650-660m.	
	10	CLAYSTONE: as for 680-690m.	
	80	COAL: as for 680-690m.	
710-720	10	SANDSTONE: very light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, very weak silica cement, abundant light to medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, friable, fair to good inferred porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 680-690m.	
	70	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, rare pyrite, firm to hard and brittle.	

Interval (m)	%	Description	PAGE: 6
720-730	80	CLAYSTONE: light to dark brown, very silty, slightly to very carbonaceous, occasionally common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, soft, very dispersive, non fissile.	
	20	COAL: as for 680-690m.	
730-735	40	SANDSTONE: very light brown, very fine to pebble, dominantly coarse, angular to subrounded, very poorly sorted, very weak silica cement, abundant light to medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, friable, fair to good inferred porosity, no oil fluorescence.	
	60	CLAYSTONE: as for 720-730m.	
735-745	60	SANDSTONE: very light brown, very fine to grit, dominantly coarse, angular to subrounded, very poorly sorted, very weak silica cement, abundant light to medium brown argillaceous and silt matrix, clear to opaque quartz grains, trace black coal detritus, rare pyrite, friable, fair to good inferred porosity, no oil fluorescence.	
	40	CLAYSTONE: as for 720-730m.	
745-750	90	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, very poorly sorted, very weak silica cement, common light to medium brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, rare pyrite, friable, very good inferred porosity, no oil fluorescence.	
	10	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, rare pyrite, firm to hard and brittle.	
750-760	100	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, poorly sorted, very weak silica cement, common off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, friable, very good inferred porosity, no oil fluorescence.	
760-765	50	SANDSTONE: as for 750-760m.	
	50	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, firm to hard and brittle.	
765-770	10	SANDSTONE: as for 750-760m.	
	90	COAL: as for 760-765m.	
770-775	10	SANDSTONE: as for 750-760m.	
	50	CLAYSTONE: light to medium brown, very silty, slightly to very carbonaceous, occasionally abundant dispersed very fine to very coarse quartz sand grains, common black coaly detritus, soft, very dispersive, non fissile.	
	40	COAL: as for 760-765m.	
775-780	80	SANDSTONE: very light brown, very fine to very coarse, dominantly coarse, angular to subrounded, poorly sorted, very weak silica cement, common off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, friable, very good inferred porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 770-775m.	
780-805	100	SANDSTONE: as for 775-780m.	
805-810	30	SANDSTONE: as for 775-780m.	
	40	CLAYSTONE: off white to medium brown, very silty, slightly to very carbonaceous, occasionally abundant dispersed very fine to very coarse quartz sand grains, common black coaly detritus, soft, very dispersive, non fissile.	

Interval (m)	%	Description	PAGE: 7
	30	COAL: black to very dark brown, very argillaceous in part, irregular to blocky fracture, earthy to slightly subvitreous lustre, firm to hard and brittle.	
810-825	70	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, poorly sorted, very weak silica cement, common to abundant off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, friable, fair to good inferred porosity, no oil fluorescence.	
	30	CLAYSTONE: as for 805-810m.	
825-830	60	SANDSTONE: as for 810-825m.	
	40	CLAYSTONE: as for 805-810m.	
830-845	80	SANDSTONE: as for 810-825m.	
	20	CLAYSTONE: as for 805-810m.	
845-850	70	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, poorly sorted, very weak silica cement, common to abundant off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, friable, fair inferred porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium brown to medium brown grey, very silty, slightly to very carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, soft, very dispersive, non fissile.	
850-855	60	SANDSTONE: as for 845-850m.	
	40	CLAYSTONE: as for 845-850m.	
855-860	80	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, poorly sorted, very weak silica cement, common to abundant off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, friable, fair to good inferred porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 845-850m.	
860-865	80	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, poorly sorted, very weak silica cement, common to abundant off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, fair to good inferred porosity, no oil fluorescence.	
	20	CLAYSTONE: off white to medium brown to medium brown grey, very silty, slightly to very carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, soft, very dispersive, non fissile.	
865-870	30	SANDSTONE: as for 860-865m.	
	70	CLAYSTONE: off white to medium brown to medium brown grey, very silty, slightly to very carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
870-880	70	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to light brown argillaceous and silt matrix, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, fair to good inferred porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium brown, very silty, slightly to moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
880-885	60	SANDSTONE: as for 870-880m.	
	40	CLAYSTONE: as for 870-880m.	

Interval (m)	%	Description	PAGE: 8
885-890	40	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to light brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, trace black coal detritus, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	60	CLAYSTONE: off white to medium brown, moderately to very silty, slightly carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
890-895	30	SANDSTONE: as for 885-890m.	
	70	CLAYSTONE: as for 885-890m.	
895-900	20	SANDSTONE: as for 885-890m.	
	80	CLAYSTONE: as for 885-890m.	
900-905	30	SANDSTONE: very light brown, very fine to grit, dominantly very coarse, angular to subrounded, poorly sorted, weak silica cement, abundant off white to light brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, trace black coal detritus, trace dark grey lithics, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	70	CLAYSTONE: as for 885-890m.	
905-910	50	SANDSTONE: as for 900-905m.	
	50	CLAYSTONE: medium brown to dark grey, moderately to very silty, moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
910-915	20	SANDSTONE: as for 900-905m.	
	80	CLAYSTONE: as for 905-910m.	
915-920	10	SANDSTONE: as for 900-905m.	
	90	CLAYSTONE: as for 905-910m.	
920-925	30	SANDSTONE: very light brown, very fine to very coarse, dominantly coarse, angular to subrounded, poorly sorted, weak silica cement, abundant off white to light brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, trace black coal detritus, trace dark grey lithics, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	70	CLAYSTONE: off white to medium brown, occasionally dark grey, moderately to very silty, slightly carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, trace black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
925-930	40	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, trace black coal detritus, trace dark grey lithics, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	60	CLAYSTONE: as for 920-925m.	
930-935	30	SANDSTONE: as for 925-930m.	
	70	CLAYSTONE: as for 920-925m.	
935-950	Trace	SANDSTONE: as for 925-930m.	

Interval (m)	%	Description	PAGE: 9
	100	CLAYSTONE: light to dark brown, occasionally dark grey, moderately to very silty, slightly to moderately carbonaceous, trace dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
950-956	10	SANDSTONE: as for 925-930m.	
	90	CLAYSTONE: light to dark brown, occasionally dark grey, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
956-959	30	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	70	CLAYSTONE: light to dark brown, occasionally dark grey, moderately to very silty, slightly to moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
959-962	60	SANDSTONE: as for 956-959m.	
	40	CLAYSTONE: as for 956-959m.	
962-965	10	SANDSTONE: as for 956-959m.	
	90	CLAYSTONE: as for 956-959m.	
965-974	Trace	SANDSTONE: as for 956-959m.	
	100	CLAYSTONE: light to dark brown, occasionally dark grey, dominantly medium brown, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
974-977	100	CLAYSTONE: light to medium brown, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
977-983	40	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	60	CLAYSTONE: as for 974-977m.	
983-989	30	SANDSTONE: as for 977-983m.	
	70	CLAYSTONE: light to dark brown, occasionally dark grey, dominantly medium brown, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
989-992	20	SANDSTONE: as for 977-983m.	
	80	CLAYSTONE: light to medium brown, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
992-995	10	SANDSTONE: as for 977-983m.	
	90	CLAYSTONE: as for 989-992m.	
995-998	30	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, very poor to poor inferred porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 10
	70	CLAYSTONE: as for 989-992m.	
998-1001	30	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, very poor to poor inferred porosity, no oil fluorescence.	
	70	CLAYSTONE: light to medium brown, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
1001-1010	20	SANDSTONE: as for 998-1001m.	
	80	CLAYSTONE: off white to medium brown, occasionally dark brown grey, moderately to very silty, slightly to moderately carbonaceous, common dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
1010-1013	40	SANDSTONE: as for 998-1001m.	
	60	CLAYSTONE: as for 1001-1010m.	
1013-1016	20	SANDSTONE: as for 998-1001m.	
	80	CLAYSTONE: as for 1001-1010m.	
1016-1021	70	SANDSTONE: light brown, very fine to very coarse, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium brown, occasionally dark brown grey, moderately to very silty, slightly to moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
1021-1024	80	SANDSTONE: light brown, very fine to grit, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace pyrite, friable, poor inferred porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1016-1021m.	
1024-1027	30	SANDSTONE: as for 1021-1024m.	
	70	CLAYSTONE: off white to medium brown grey, moderately to very silty, slightly to moderately carbonaceous, abundant dispersed very fine to very coarse quartz sand grains, abundant black coaly detritus, trace pyrite, soft, very dispersive, non fissile.	
1027-1030	70	SANDSTONE: light brown, very fine to grit, dominantly coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace grey green cherty lithics, common pyrite, friable, poor inferred porosity, no oil fluorescence.	
	30	CLAYSTONE: as for 1024-1027m.	
1030-1036	90	SANDSTONE: light brown, very fine to pebble, dominantly very coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to medium brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace grey green cherty lithics, common pyrite, friable, good inferred porosity, no oil fluorescence.	
	10	CLAYSTONE: as for 1024-1027m.	

Interval (m)	%	Description	PAGE: 11
1036-1042	100	SANDSTONE: light brown, very fine to pebble, dominantly very coarse, angular to subrounded, very poorly sorted, weak silica cement, abundant off white to light brown argillaceous and silt matrix - matrix supported, clear to opaque quartz grains, common black coal detritus, trace grey green cherty lithics, common pyrite, friable, good inferred porosity, no oil fluorescence.	
1042-1045	60	SANDSTONE: as for 1036-1042m.	
	40	VOLCANICS: (weathered to claystone) medium green mottled with minor brick red, formless, soft, sticky, non fissile.	
1045-1048	100	VOLCANICS: (basalt?) weathered to soft mottled bright green (chloritic?) and brick red claystone; where unweathered is composed of a hard glassy light green to black matrix with a diffuse crystal intergrowth of off white to black minerals.	
1048-1051	100	VOLCANICS: basalt?, glassy light green to black matrix with a diffuse crystal intergrowth of off white to black minerals, hard, lightly weathered in part to light green claystone.	
1051-1054	100	VOLCANICS: basalt?, glassy light green to black matrix with a diffuse crystal intergrowth of off white to black minerals, hard.	
1054-1057	100	VOLCANICS: basalt?, glassy light green to black matrix with a diffuse crystal intergrowth of off white to black minerals, trace calcite vein infill, hard, weathered in part to light green claystone.	
1057-1060	30	VOLCANICS: (weathered to claystone) medium green mottled with minor brick red, formless, soft, sticky, non fissile.	
	70	CLAYSTONE: light to medium brown grey, slightly to moderately silty, trace black carbonaceous flecks and detritus, soft, non fissile.	
1057-1062	10	VOLCANICS: as for 1057-1060m.	
	90	CLAYSTONE: as for 1057-1060m.	
1062-1066	100	CLAYSTONE: (weathered very fine feldspathic sandstone), off white to medium grey, slightly silty, abundant altered very fine feldspar grains, trace black carbonaceous flecks and detritus, soft, non fissile.	
1066-1072	10	SANDSTONE: off white, very fine, subangular to subrounded, moderately sorted, moderate silica cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	90	CLAYSTONE: as for 1062-1066m.	
1072-1075	20	SANDSTONE: as for 1066-1072m.	
	80	CLAYSTONE: off white to medium grey, slightly silty, abundant altered very fine feldspar grains, trace black carbonaceous flecks and detritus, soft, non fissile.	
1075-1081	10	SANDSTONE: as for 1066-1072m.	
	90	CLAYSTONE: as for 1072-1075m.	
1081-1084	70	SANDSTONE: off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium grey, slightly silty, abundant altered very fine feldspar grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	
1084-1093	80	SANDSTONE: as for 1081-1084m.	
	20	CLAYSTONE: as for 1081-1084m.	

Interval (m)	%	Description	PAGE: 12
1093-1099	70	SANDSTONE: off white, very fine, subangular to subrounded, moderately sorted, moderate silica cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	30	CLAYSTONE: as for 1081-1084m.	
1099-1102	60	SANDSTONE: as for 1093-1099m.	
	40	CLAYSTONE: as for 1081-1084m.	
1102-1105	70	SANDSTONE: off white, very fine, subangular to subrounded, moderately sorted, moderate silica cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium grey, slightly silty, abundant altered very fine feldspar grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	
1105-1108	50	SANDSTONE: as for 1102-1105m.	
	50	CLAYSTONE: as for 1102-1105m.	
1108-1111	30	SANDSTONE: as for 1102-1105m.	
	70	CLAYSTONE: as for 1102-1105m.	
1111-1114	50	SANDSTONE: as for 1102-1105m.	
	50	CLAYSTONE: as for 1102-1105m.	
1114-1117	30	SANDSTONE: as for 1102-1105m.	
	70	CLAYSTONE: off white to medium grey to rarely light brown, slightly silty, abundant altered very fine feldspar grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	
1117-1120	50	SANDSTONE: off white, very fine to rarely fine, subangular to subrounded, moderately sorted, moderate silica cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	50	CLAYSTONE: as for 1114-1117m.	
1120-1126	70	SANDSTONE: as for 1117-1120m.	
	30	CLAYSTONE: as for 1114-1117m.	
1126-1129	50	SANDSTONE: as for 1117-1120m.	
	50	CLAYSTONE: as for 1114-1117m.	
1129-1135	80	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1114-1117m.	
1135-1141	60	SANDSTONE: as for 1129-1135m.	
	40	CLAYSTONE: off white to medium grey to light brown grey, slightly silty, abundant altered very fine feldspar grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	

Interval (m)	%	Description	PAGE: 13
1141-1144	80	SANDSTONE: off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar grains, common grey green lithics, trace quartz, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1135-1141m.	
1144-1147	100	SANDSTONE: as for 1141-1144m.	
1147-1150	80	SANDSTONE: as for 1141-1144m.	
	20	CLAYSTONE: as for 1135-1141m.	
1150-1156	100	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, common fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
1156-1160	60	SANDSTONE: as for 1150-1156m.	
	40	CLAYSTONE: medium grey to medium brown grey to off white, slightly silty, abundant altered lithic sand grains where off white, common black carbonaceous flecks and detritus, soft, non fissile.	
1160-1165	40	SANDSTONE: off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace to common fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	60	CLAYSTONE: as for 1156-1160m.	
1165-1171	70	SANDSTONE: as for 1160-1165m.	
	30	CLAYSTONE: as for 1156-1160m.	
1171-1174	60	SANDSTONE: as for 1160-1165m.	
	40	CLAYSTONE: as for 1156-1160m.	
1174-1177	30	SANDSTONE: as for 1160-1165m.	
	10	CLAYSTONE: as for 1156-1160m.	
	60	VOLCANICS: (basalt?) dominantly weathered to soft bright green (chloritic?) claystone; where unweathered is composed of a hard glassy green to black matrix with a diffuse crystal intergrowth of off white to black minerals.	
1177-1180	40	SANDSTONE: as for 1160-1165m.	
	60	VOLCANICS: as for 1174-1177m.	
1180-1183	10	SANDSTONE: as for 1160-1165m.	
	90	VOLCANICS: (basalt?) dominantly weathered to soft bright green (chloritic?) claystone; where unweathered is composed of a hard glassy green to black matrix with a diffuse crystal intergrowth of off white to black minerals, common crystalline quartz vein infill.	
1183-1186	100	VOLCANICS: as for 1180-1183m.	

Interval (m)	%	Description	PAGE: 14
1186-1189	100	VOLCANICS: (basalt?) weathered in part to soft bright green (chloritic?) claystone; where unweathered is composed of a hard glassy green to black matrix with a diffuse crystal intergrowth of off white to black minerals, trace crystalline quartz vein infill.	
1189-1192	100	VOLCANICS: (basalt?) slightly weathered to soft bright green (chloritic?) claystone; where unweathered is composed of a hard glassy green to black matrix with a diffuse crystal intergrowth of off white to black minerals, trace crystalline quartz vein infill.	
1192-1198	100	VOLCANICS: (basalt?) composed of a hard glassy light green to black matrix with a diffuse crystal intergrowth of off white to black minerals, common crystalline calcite and quartz vein infill.	
1198-1204	100	VOLCANICS: (basalt?) weathered in part to soft bright green (chloritic?) and occasionally red claystone; where unweathered is composed of a hard glassy green to black matrix with a diffuse crystal intergrowth of off white to black minerals, trace crystalline quartz vein infill.	
1204-1207	20	SANDSTONE: (weathered to kaolinitic claystone) off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and common grey green lithic grains, trace orange brown lithics, common quartz grains, trace to common fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	80	VOLCANICS: as for 1198-1204m.	
1207-1210	70	SANDSTONE: off white, very fine to fine, dominantly fine, rare medium grains, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace to common fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium grey to medium brown grey, slightly silty, abundant altered lithic sand grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	
1210-1213	80	SANDSTONE: off white, very fine to fine, dominantly fine, occasional medium grains, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1210-1213m.	
1213-1219	90	SANDSTONE: as for 1210-1213m.	
	10	CLAYSTONE: as for 1210-1213m.	
1219-1223	70	SANDSTONE: as for 1210-1213m.	
	30	CLAYSTONE: as for 1210-1213m.	
1223-1229	40	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	60	CLAYSTONE: medium grey to medium brown grey, moderately to very silty, abundant very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft, non fissile.	
1229-1231	70	SANDSTONE: as for 1223-1229m.	
	30	CLAYSTONE: as for 1223-1229m.	

Interval (m)	%	Description	PAGE: 15
1231-1237	60	SANDSTONE: off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	40	CLAYSTONE: off white to medium grey to medium brown grey, slightly silty, abundant altered lithic sand grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	
1237-1243	50	SANDSTONE: as for 1231-1237m.	
	50	CLAYSTONE: as for 1231-1237m.	
1243-1246	60	SANDSTONE: as for 1231-1237m.	
	40	CLAYSTONE: as for 1231-1237m.	
1246-1252	80	SANDSTONE: as for 1231-1237m.	
	20	CLAYSTONE: as for 1231-1237m.	
1252-1255	100	SANDSTONE: off white, very fine to fine, dominantly fine, rare medium grains, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace to common fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
1255-1261	80	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	20	CLAYSTONE: off white to medium grey to medium brown grey, slightly silty, abundant altered lithic sand grains where off white, trace black carbonaceous flecks and detritus, soft, non fissile.	
1261-1273	70	SANDSTONE: as for 1255-1261m.	
	30	CLAYSTONE: as for 1255-1261m.	
1273-1276	80	SANDSTONE: off white, very fine to fine, dominantly fine, occasional medium grains, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1255-1261m.	
1276-1279	70	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	30	CLAYSTONE: as for 1255-1261m.	
1279-1282	60	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 16
	40	CLAYSTONE: medium grey to medium brown grey to off white, slightly to very silty, slightly calcareous in part, abundant altered lithic sand grains where off white, trace to common black carbonaceous flecks and detritus, soft, non fissile.	
1282-1285	30	SANDSTONE: as for 1279-1282m.	
	70	CLAYSTONE: as for 1279-1282m.	
1285-1288	20	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	80	CLAYSTONE: medium grey to medium green grey to medium brown grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1288-1294	10	SANDSTONE: as for 1285-1288m.	
	90	CLAYSTONE: as for 1285-1288m.	
1294-1297	10	SANDSTONE: as for 1285-1288m.	
	90	CLAYSTONE: medium brown to medium brown grey to medium grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1297-1303	20	SANDSTONE: as for 1285-1288m.	
	80	CLAYSTONE: as for 1294-1297m.	
1303-1306	50	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	50	CLAYSTONE: medium brown to medium brown grey to medium grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1306-1312	80	SANDSTONE: as for 1303-1306m.	
	20	CLAYSTONE: as for 1303-1306m.	
1312-1324	90	SANDSTONE: as for 1303-1306m.	
	10	CLAYSTONE: off white to medium brown to medium brown grey to medium grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1324-1327	100	SANDSTONE: off white, very fine to fine, occasional medium grains, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
1327-1330	90	SANDSTONE: as for 1324-1327m.	
	10	CLAYSTONE: as for 1312-1324m.	

Interval (m)	%	Description	PAGE: 17
1330-1336	100	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
1336-1342	100	SANDSTONE: as for 1330-1336m.	
1342-1348	50	SANDSTONE: off white, very fine to fine, occasional medium grains, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	50	CLAYSTONE: medium brown to medium brown grey to medium grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1348-1354	60	SANDSTONE: as for 1342-1348m.	
	40	CLAYSTONE: as for 1342-1348m.	
1354-1357	70	SANDSTONE: as for 1342-1348m.	
	30	CLAYSTONE: off white to medium brown to medium brown grey to medium grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1357-1372	80	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1354-1357m.	
1372-1375	70	SANDSTONE: as for 1357-1372m.	
	30	CLAYSTONE: as for 1354-1357m.	
1375-1381	80	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: off white to medium brown to medium brown grey to medium grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1381-1393	90	SANDSTONE: off white, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace to common orange brown lithics and quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	10	CLAYSTONE: as for 1375-1381m.	
1393-1402	100	SANDSTONE: off white, very fine to medium, dominantly medium, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace fine black carbonaceous material, hard, very poor to poor visual porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 18
1402-1411	100	SANDSTONE: off white, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace fine black carbonaceous material, trace pyrite, hard, very poor to poor visual porosity, no oil fluorescence.	
1411-1417	70	SANDSTONE: off white, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: off white to medium grey to medium brown grey, moderately to very silty, slightly calcareous in part, trace very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1417-1420	80	SANDSTONE: as for 1411-1417m.	
	20	CLAYSTONE: as for 1411-1417m.	
1420-1423	70	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, common quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: as for 1411-1417m.	
1423-1426	60	SANDSTONE: as for 1420-1423m.	
	40	CLAYSTONE: as for 1411-1417m.	
1426-1429	30	SANDSTONE: off white, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	70	CLAYSTONE: light to medium grey to medium brown grey, moderately to very silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1429-1432	40	SANDSTONE: as for 1426-1429m.	
	60	CLAYSTONE: as for 1426-1429m.	
1432-1435	30	SANDSTONE: as for 1426-1429m.	
	70	CLAYSTONE: as for 1426-1429m.	
1435-1438	40	SANDSTONE: as for 1426-1429m.	
	60	CLAYSTONE: light to medium brown grey to medium grey, moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1438-1441	50	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	50	CLAYSTONE: as for 1435-1438m.	
1441-1444	60	SANDSTONE: as for 1438-1441m.	

Interval (m)	%	Description	PAGE: 19
	40	CLAYSTONE: as for 1435-1438m.	
1444-1447	70	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak calcareous cement, abundant white argillaceous matrix - grades to arenaceous claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: as for 1435-1438m.	
1447-1456	80	SANDSTONE: as for 1444-1447m.	
	20	CLAYSTONE: as for 1435-1438m.	
1456-1462	70	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, moderate calcareous cement, abundant white argillaceous matrix - grades to arenaceous claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: light to medium grey to medium brown grey to medium green grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1462-1465	60	SANDSTONE: as for 1456-1462m.	
	40	CLAYSTONE: as for 1456-1462m.	
1465-1468	30	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, moderate calcareous cement, abundant white argillaceous matrix - grades to arenaceous claystone, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no poor visual porosity, no oil fluorescence.	
	70	CLAYSTONE: as for 1456-1462m.	
1468-1471	10	SANDSTONE: as for 1465-1468m.	
	90	CLAYSTONE: as for 1456-1462m.	
1471-1474	80	SANDSTONE: off white, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, moderate calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1456-1462m.	
1474-1480	70	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, moderate calcareous cement, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: light to medium grey to medium brown grey to medium green grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1480-1486	80	SANDSTONE: off white, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1474-1480m.	

Interval (m)	%	Description	PAGE: 20
1486-1492	90	SANDSTONE: as for 1480-1486m.	
	10	CLAYSTONE: as for 1474-1480m.	
1492-1495	70	SANDSTONE: as for 1480-1486m.	
	30	CLAYSTONE: light to medium grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1495-1498	80	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1495-1498m.	
1498-1507	100	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
1507-1513	90	SANDSTONE: as for 1498-1507m.	
	10	CLAYSTONE: as for 1495-1498m.	
1513-1516	40	SANDSTONE: as for 1498-1507m.	
	60	CLAYSTONE: medium grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1516-1522	100	CLAYSTONE: as for 1513-1516m.	
1522-1525	10	SANDSTONE: off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	90	CLAYSTONE: medium to dark grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1525-1528	50	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	50	CLAYSTONE: medium grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1528-1534	80	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace fine black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1525-1528m.	
1534-1537	90	SANDSTONE: as for 1528-1534m.	

Interval (m)	%	Description	PAGE: 21
	10	CLAYSTONE: as for 1525-1528m.	
1537-1540	30	SANDSTONE: off white, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	70	CLAYSTONE: light to medium grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1540-1546	60	SANDSTONE: as for 1537-1540m.	
	40	CLAYSTONE: as for 1537-1540m.	
1546-1552	70	SANDSTONE: as for 1537-1540m.	
	30	CLAYSTONE: as for 1537-1540m.	
1552-1558	100	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
1558-1561	70	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: light to medium grey to medium brown grey, slightly silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1561-1564	20	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	80	CLAYSTONE: as for 1558-1561m.	
1564-1567	30	SANDSTONE: as for 1561-1564m.	
	70	CLAYSTONE: as for 1558-1561m.	
1567-1570	50	SANDSTONE: off white, very fine to rarely medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	50	CLAYSTONE: light to medium grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1570-1579	20	SANDSTONE: off white, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	80	CLAYSTONE: as for 1567-1570m.	

Interval (m)	%	Description	PAGE: 22
1579-1582	30	SANDSTONE: as for 1570-1579m.	
	70	CLAYSTONE: as for 1567-1570m.	
1582-1585	50	SANDSTONE: as for 1570-1579m.	
	50	CLAYSTONE: as for 1567-1570m.	
1585-1588	60	SANDSTONE: off white, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	40	CLAYSTONE: as for 1567-1570m.	
1590 Spot sample	80	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace black carbonaceous material, hard, very poor visual porosity, no oil fluorescence.	
	20	CLAYSTONE: light to medium grey to medium brown grey, slightly to moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1588-1594	70	SANDSTONE: off white, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace to common quartz grains, trace to common black carbonaceous material, hard, nil to very poor visual porosity, no oil fluorescence.	
	30	CLAYSTONE: light to medium grey to medium brown grey, slightly silty, slightly calcareous in part, common very fine altered feldspar grains in part, trace to common black carbonaceous flecks and detritus, soft to firm, non to slightly subfissile.	
1594-1600	80	SANDSTONE: as for 1588-1594m.	
	20	CLAYSTONE: as for 1588-1594m.	
1600-1603	30	SANDSTONE: off white, very fine to fine, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace to common black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	70	CLAYSTONE: medium to dark grey to medium brown grey, moderately to very silty, slightly calcareous in part, common very fine altered feldspar grains in part, common black carbonaceous flecks and detritus, firm, slightly subfissile.	
1603-1606	30	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace to common black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	70	CLAYSTONE: medium grey to medium brown grey, moderately to very silty, slightly calcareous in part, common very fine altered feldspar grains in part, common black carbonaceous flecks and detritus, firm, slightly subfissile.	
1606-1609	40	SANDSTONE: off white, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, common black carbonaceous material, hard, no visual porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 23
	60	CLAYSTONE: as for 1603-1606m.	
1609-1612	40	SANDSTONE: off white, very fine to medium, dominantly medium, subangular to subrounded, moderately sorted, moderate silica and calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and grey green lithic grains, trace orange brown lithics, trace quartz grains, trace to common black carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	30	CLAYSTONE: medium grey to medium brown grey, moderately silty, slightly calcareous in part, common very fine altered feldspar grains in part, common black carbonaceous flecks and detritus, firm, slightly subfissile.	
	30	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase (weathered to kaolin), trace orthoclase, with common quartz, common dark mafic minerals and magnetite, trace biotite, very calcareous, hard to very hard, no visual porosity.	
1612-1615	100	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase (weathered to kaolin), trace orthoclase, with common quartz, common dark mafic minerals and magnetite, trace biotite, very calcareous, hard to very hard, no visual porosity.	
1615-1621	100	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase (weathered in part to kaolin), trace orthoclase, with common quartz, common dark mafic minerals and magnetite, trace biotite, moderately calcareous, very hard, no visual porosity.	
1621-1627	100	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase, trace orthoclase, with common quartz, common dark mafic minerals and magnetite, trace biotite, slightly calcareous, very hard, no visual porosity.	
1627-1630	100	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase, (partially weathered to kaolin), trace orthoclase, common quartz, common dark mafic minerals and magnetite, trace biotite, slightly calcareous in part, very hard, no visual porosity.	
1630-1639	100	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase, (dominantly weathered to kaolin), trace orthoclase, common quartz, common dark mafic minerals and magnetite, trace biotite, moderately calcareous, very hard, no visual porosity.	
1639-1642	70	HYDROTHERMALLY ALTERED SANDSTONE (?) GRANITE (?): light to medium grey, intergrown fine to medium grained plagioclase, (weathered to kaolin), trace orthoclase, common quartz, common dark mafic minerals and magnetite, trace biotite, very calcareous, very hard, no visual porosity.	
	30	CLAYSTONE: medium brown grey to medium grey, moderately silty, slightly calcareous, common very fine altered feldspar grains in part, common black carbonaceous flecks and detritus, firm, slightly subfissile.	
1642-1645	80	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, common black vitreous carbonaceous material, hard to very hard, no visual porosity, no oil fluorescence.	
	20	CLAYSTONE: as for 1639-1642m.	
1645-1648	100	SANDSTONE: as for 1642-1645m.	
1648-1654	90	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, common black vitreous carbonaceous material, trace pyrite, hard to very hard, no visual porosity, no oil fluorescence.	
	10	CLAYSTONE: as for 1639-1642m.	

Interval (m)	%	Description	PAGE: 24
1654-1657	100	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, abundant black vitreous carbonaceous material, very hard, no visual porosity, no oil fluorescence.	
1657-1660	80	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, abundant black vitreous carbonaceous material, trace crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: medium grey to medium brown grey, moderately to very argillaceous, slightly calcareous in part, common very fine altered feldspar grains, common black carbonaceous flecks, moderately hard, subfissile.	
1660-1663	90	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, abundant quartz grains, common black vitreous carbonaceous material, trace crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	
	10	SILTSTONE: as for 1657-1660m.	
1663-1666	100	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, common black vitreous carbonaceous material, trace crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	
1663-1670	100	SANDSTONE: as for 1663-1666m.	
	Trace	SILTSTONE: as for 1657-1660m.	
1670-1675	100	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, common black vitreous carbonaceous material, common crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	
	Trace	SILTSTONE: medium grey to medium brown grey, moderately argillaceous, slightly calcareous in part, common very fine altered feldspar grains, common black carbonaceous flecks, moderately hard, subfissile.	
1675-1687	90	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak to moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace to common black vitreous carbonaceous material, trace crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	
	10	SILTSTONE: medium grey to occasionally medium brown grey, moderately to very argillaceous, common very fine altered feldspar grains, trace to common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1687-1690	30	SANDSTONE: as for 1675-1687m.	
	70	SILTSTONE: medium grey to occasionally medium brown grey, moderately to very argillaceous, common very fine altered feldspar grains in part, trace to common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1690-1696	20	SANDSTONE: light grey, very fine to medium, dominantly fine, angular to subrounded, moderately sorted, strong silica and weak to moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace to common black vitreous carbonaceous material, trace crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 25
	80	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately to very argillaceous, common very fine altered feldspar grains in part, trace to common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1696-1699	30	SANDSTONE: as for 1690-1696m.	
	70	SILTSTONE: as for 1690-1696m.	
1699-1702	20	SANDSTONE: light grey, very fine to fine, dominantly fine, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace crystalline vein quartz, very hard, no visual porosity, no oil fluorescence.	
	80	SILTSTONE: as for 1690-1696m.	
1702-1705	60	SANDSTONE: as for 1699-1702m.	
	40	SILTSTONE: as for 1690-1696m.	
1705-1708	70	SANDSTONE: light grey, very fine to fine, dominantly fine, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace crystalline vein quartz, hard, no visual porosity, no oil fluorescence.	
	30	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately to very argillaceous, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1708-1714	80	SANDSTONE: light grey, very fine to medium, dominantly fine, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace crystalline vein quartz, hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: as for 1705-1708m.	
1714-1717	30	SANDSTONE: light grey, very fine to fine, dominantly fine, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace crystalline vein quartz, hard, no visual porosity, no oil fluorescence.	
	70	SILTSTONE: medium to dark grey to medium brown grey, moderately argillaceous, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1717-1720	80	SANDSTONE: light grey, very fine to occasionally medium, dominantly fine, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace crystalline vein quartz, hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: as for 1714-1717m.	
1720-1729	100	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace crystalline vein quartz, hard, no visual porosity, no oil fluorescence.	
	Trace	SILTSTONE: as for 1714-1717m.	
1729-1735	100	SANDSTONE: as for 1720-1729m.	

Interval (m)	%	Description	PAGE: 26
1735-1738	80	SANDSTONE: as for 1720-1729m.	
	20	SILTSTONE: as for 1714-1717m.	
1738-1741	100	SANDSTONE: as for 1720-1729m.	
1741-1744	30	SANDSTONE: light grey, very fine to fine, dominantly very fine, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	70	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately argillaceous, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1744-1747	60	SANDSTONE: light grey, very fine to fine, dominantly fine, angular to subrounded, moderately sorted, moderate to strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	40	SILTSTONE: as for 1744-1747m.	
1747-1756	90	SANDSTONE: light grey, very fine to medium, dominantly fine to medium, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	10	SILTSTONE: as for 1744-1747m.	
1756-1759	70	SANDSTONE: as for 1747-1756m.	
	30	SILTSTONE: as for 1744-1747m.	
1759-1762	30	SANDSTONE: light grey, very fine to occasionally medium, dominantly fine, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace quartz vein infill, hard, no visual porosity, no oil fluorescence.	
	70	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately argillaceous, slightly carbonaceous, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1762-1765	80	SANDSTONE: as for 1759-1762m.	
	20	SILTSTONE: as for 1759-1762m.	
1765-1768	70	SANDSTONE: as for 1759-1762m.	
	30	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately argillaceous, very carbonaceous in part, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1768-1771	80	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace quartz vein infill, hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: as for 1765-1768m.	

Interval (m)	%	Description	PAGE: 27
1771-1777	70	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, trace quartz vein infill, hard, no visual porosity, no oil fluorescence.	
	30	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately argillaceous, slightly to occasionally very carbonaceous, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1777-1783	80	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, trace black vitreous carbonaceous material, trace vein quartz, hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: as for 1771-1777m.	
1783-1786	70	SANDSTONE: as for 1777-1783m.	
	30	SILTSTONE: medium to dark grey to occasionally medium brown grey, moderately argillaceous, very carbonaceous in part, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1786-1791	100	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	Trace	SILTSTONE: as for 1786-1789m.	
1791-1792	80	SANDSTONE: light grey, very fine to medium, dominantly fine, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: as for 1786-1789m.	
1792-1801	100	SANDSTONE: light grey, very fine to medium, dominantly fine, angular to subrounded, moderately sorted, strong silica and moderate calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
1801-1804	90	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	10	SILTSTONE: medium to occasionally dark grey to medium brown grey, moderately argillaceous, slightly carbonaceous in part, common very fine altered feldspar grains, trace black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1804-1813	100	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, common quartz grains, trace black vitreous carbonaceous material, trace vein quartz, hard, no visual porosity, no oil fluorescence.	
1813-1819	50	SANDSTONE: light grey, very fine to medium, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace to common quartz grains, trace to common black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	

Interval (m)	%	Description	PAGE: 28
	50	SILTSTONE: medium grey to occasionally medium brown grey, moderately argillaceous, slightly carbonaceous in part, common very fine altered feldspar grains, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1819-1825	80	SANDSTONE: as for 1813-1819m.	
	20	SILTSTONE: as for 1813-1819m.	
1825-1828	60	SANDSTONE: as for 1813-1819m.	
	40	SILTSTONE: as for 1813-1819m.	
1828-1834	20	SANDSTONE: light grey, very fine to fine, dominantly fine, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	80	SILTSTONE: medium grey to occasionally medium brown grey, moderately to very argillaceous, slightly carbonaceous, common very fine altered feldspar grains in part, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1834-1837	60	SANDSTONE: as for 1828-1834m.	
	40	SILTSTONE: medium grey to occasionally medium brown grey, moderately argillaceous, slightly carbonaceous, common very fine altered feldspar grains in part, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1837-1840	70	SANDSTONE: as for 1828-1834m.	
	30	SILTSTONE: as for 1834-1837m.	
1840-1843	80	SANDSTONE: light grey, very fine to fine, dominantly fine to medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	20	SILTSTONE: medium grey to medium brown grey, moderately argillaceous, slightly carbonaceous, common very fine altered feldspar grains in part, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1843-1846	90	SANDSTONE: light grey, very fine to fine, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	10	SILTSTONE: as for 1840-1843m.	
1846-1849	100	SANDSTONE: light grey, very fine to fine, dominantly fine to medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
1849-1852	70	SANDSTONE: as for 1846-1849m.	
	30	SILTSTONE: medium to dark grey to medium brown grey, moderately argillaceous, very carbonaceous in part, common very fine altered feldspar grains in part, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	
1852-1855	80	SANDSTONE: as for 1846-1849m.	
	20	SILTSTONE: as for 1849-1852m.	

Interval (m)	%	Description	PAGE: 29
1855-1864	100	SANDSTONE: light grey, very fine to fine, dominantly medium, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
	Trace	SILTSTONE: as for 1849-1852m.	
1864-1868	20	SANDSTONE: light grey, very fine to fine, dominantly fine, angular to subrounded, moderately sorted, strong silica and weak calcareous cements, abundant white argillaceous matrix - matrix supported, abundant altered feldspar and dark grey to black lithic grains, trace orange brown lithics, trace quartz grains, trace black vitreous carbonaceous material, hard, no visual porosity, no oil fluorescence.	
T.D.	80	SILTSTONE: medium grey to medium brown grey, moderately argillaceous, slightly carbonaceous, common very fine altered feldspar grains in part, common black carbonaceous flecks, trace micromica, moderately hard, subfissile.	