APPENDIX 3

CUTTINGS DESCRIPTIONS

PetroFrontier

Cuttings Descriptions Report

Well Name :	MacIntyre-2 Ensign MacIntyre-2H	**Print Date**	25/09/2012
Wellsite Geologist(s) :	K Cooper A Freeman		

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
MacIntyre-2H				
540.0 - 543.0	100	**DOLOMITE:** DOLOMITE: light greyish brown with scattered off-white to cream possibly recrystallized patches or lenses, mudstone, in the upper 1m of the interval oolitic wackestone to packstone stringers (possible grainstone if original matrix material was sparry calcite or porosity) with scattered to locally numerous (wackestone) to occasionally abundant (packstone) fine to medium spherical oolites, micro to lower very fine to locally upper very fine crystalline (typically lighter colored and possibly recrystallized), trace black bitumen-filled wavy to locally crenulated stylolites, mainly tightly packed crystals with no visible matrix porosity, trace healed hairline fractures with medium brown relic hydrocarbon staining, trace clear to translucent anhydrite inclusions and veins.		
543.0 - 546.0	100	**DOLOMITE:** variably colored, white to very pale grey to pale very pale brown, brownish grey to greyish brown, mudstone texture, rare oolites, micro to lower very-fine crystalline, rare anhydrite crystalline inclusions and veins, rare hairline stylolites, tightly packed crystals with no visible matrix porosity, no staining, no shows.		
546.0 - 550.0	65	**DOLOMITIC SANDSTONE:** pale yellowish white to light brown to pale reddish brown, locally mottled with cream to pale reddish brown clay, quartzose, clear quartz grains with scattered light and dark lithic grains, lower very-fine grained and commonly silty, grading locally to sandy siltstone, well sorted, rounded grains, slightly grading to very argillaceous, moderately to moderately well consolidated with dolomite cement, no visible porosity, no staining, no fluorescence, no shows.		
	30	**CLAYSTONE:** very pale yellowish white, slightly earthy luster.		
	5	**SILTSTONE:** SILTSTONE: medium greyish green, slightly waxy luster, slightly to moderately dolomitic, very firm to slightly hard.		
550.0 - 555.0	40	**DOLOMITIC SANDSTONE:** pale yellowish white to light brown to pale reddish brown, locally mottled with cream to pale reddish brown clay, quartzose, clear quartz grains with scattered light and dark lithic grains, lower very-fine grained and commonly silty, grading locally to sandy siltstone, well sorted, rounded grains, slightly grading to very argillaceous, moderately to moderately well consolidated with dolomite cement, no visible porosity, no staining, no fluorescence, no shows.		
	30	**DOLOMITE:** light brown, micro to lower very-fine crystalline, in part silty and sandy, slightly to moderately argillaceous, moderately hard, platy, no visible porosity, no staining, no shows.		
	30	**CLAYSTONE:** very pale yellowish white, slightly earthy luster.		
555.0 - 560.0	60	**DOLOMITIC SANDSTONE:** pale yellowish white to light brown to pale reddish brown, locally mottled with cream to pale reddish brown clay, quartzose, clear quartz grains with scattered light and dark lithic grains, lower very-fine grained and commonly silty, grading locally to sandy siltstone, well sorted, rounded grains, slightly grading to very argillaceous, moderately to moderately well consolidated with dolomite cement, no visible porosity, no staining, no fluorescence, no shows.		
	20	**SILTY DOLOMITE:** light grey, slightly argillaceous, moderately hard, as above.		
	20	**DOLOMITIC SILTSTONE:** light grey, slightly argillaceous, dolomitic, moderately hard.		
	10	**CLAYSTONE:** very pale yellowish white, slightly earthy luster.		
560.0 - 565.0	70	**DOLOMITE:** variably colored, in part cream to very pale grey, in part buff to tan to light greyish brown, microcrystalline, originally mudstone texture, in part silty, locally grading to dolomitic siltstone, tightly packed and dense, sub-platy to platy, no visible matrix porosity, poor mineral fluorescence, no shows.		
	15	**DOLOMITIC SILTSTONE:** light grey, clear quartz grains with dark lithic particles, slightly to moderately argillaceous, dolomitic, moderately hard.		
	10	**SANDSTONE:** pale yellowish white to light brown to pale reddish brown, locally mottled with cream to pale reddish brown clay, quartzose, clear quartz grains with scattered light and dark lithic grains, lower very-fine grained and commonly silty, grading locally to sandy siltstone, well sorted, rounded grains, slightly grading to very argillaceous, moderately to moderately well consolidated with dolomite cement, no visible porosity, no staining, no fluorescence, no shows.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
560.0 - 565.0	5	**CLAYSTONE:** whitish grey to very pale yellowish white, slightly earthy luster, dolomite laminae, occasional bituminous hairline stylolites.		
	0	**CHERT:** light grey and translucent, light brown and opaque.		
565.0 - 570.0	55	**DOLOMITIC SILTSTONE:** as above, tightly packed and dense, moderately hard, sub platey - platey.		
	40	**DOLOMITE:** variably colored, in part cream to very pale grey, in part buff to tan to light greyish brown, microcrystalline, originally mudstone texture, in part silty, locally grading to dolomitic siltstone, tightly packed and dense, sub-platy to platy, no visible matrix porosity, poor mineral fluorescence, no shows.		
	5	**CLAYSTONE:** whitish grey to very pale yellowish white, slightly earthy luster.		
570.0 - 575.0	95	**DOLOMITE:** very calcareous, in part off white - cream - tan, in part light greyish-brown, in part mottled white with microcrystalline anhydrite, gradational microcrystalline - lower very fine crystalline, inclination part silty, tightly packed crystals, no visible porosity, original mudstone texture,		
	5	**CLAYSTONE:** whitish grey to very pale yellowish white, slightly earthy luster, dolomite laminae, occasional bituminous hairline stylolites.		
575.0 - 580.0	95	**SILTY DOLOMITE:** very calcareous as previously described, mudstone texture, scattered fine to medium grained to coarse grained oolite shadows, oolitic wackestone - packstone stringers, silty in parts, slightly argillaceous in parts, no visible matrix porosity.		
	5	**CLAYSTONE:** whitish grey to very pale yellowish white, slightly earthy luster, dolomite laminae.		
580.0 - 590.0	100	**SILTY DOLOMITE:** light to medium grey, very light brown, silty, trace oolitic shadows, trace bitumen, trace anhydrite, microcrystalline to in part very fine crystalline, no visible porosity		
590.0 - 600.0	100	**SILTY DOLOMITE:** light - medium grey, light brown, minor oolite shadows, very, minor anhydrite, organic fragments, trace pyrite, microcrystalline to in part very fine crystalline, no visible porosity,		
600.0 - 610.0	100	**SILTY DOLOMITE:** light grey, minor light brown, minor oolitic shadows, microcrystalline to in part very fine crystalline, silty, argillaceous, no visible porosity, no shows.		
610.0 - 620.0	70	**LIMESTONE:** off-white to cream with slightly chalky luster, mudstone texture, no visible porosity, no staining, no shows; predominantly light greyish brown to medium brown, mudstone texture, commonly moderately to very argillaceous, in part gradational with calcareous marlstone, in part dolomitic, in part silty, moderately hard, dense, no visible porosity, no staining, no shows.		
	20	**SILTY DOLOMITE:** light greyish brown where clean grading to medium brown to locally dark brown with increasing argillaceous matter, moderately to very argillaceous and grading to dolomitic marlstone, original mudstone texture, moderately hard, platy, no visible porosity, no staining, no shows.		
620.0 - 630.0	60	**LIMESTONE:** off-white to very pale yellowish white, mudstone texture, no visible porosity, no staining, no shows; predominantly light greyish brown to medium brown, mudstone texture, commonly moderately to very argillaceous, in part gradational with calcareous marlstone, in part dolomitic, in part silty, moderately hard, dense, no visible porosity, no staining, no shows.		
	40	**DOLOMITE:** light greyish brown where clean grading to medium brown to locally dark brown with increasing argillaceous matter, moderately to very argillaceous and grading to dolomitic marlstone, original mudstone texture, moderately hard, platy, no visible porosity, no staining, no shows.		
630.0 - 640.0	75	**DOLOMITE:** medium to dark brown to greyish brown, micro to very-fine crystalline, mudstone texture, moderately to very argillaceous, no visible matrix porosity, no apparent staining, no fluorescence, no fluorescing cut in solvent.		
	25	**LIMESTONE:** very pale yellowish white to pale yellowish grey to pale greyish brown.		
	0	**CLAYSTONE:** off-white, calcareous,		
640.0 - 645.0	80	**DOLOMITE:** variably colored, cream to buff where clean to only slightly argillaceous, mottled in parts, occasional claystone laminae; light greyish brown grading grading to dark greyish brown to dark brown with increasing dark argillaceous matter, sandy in parts with clear lower very-fine grain quartz, no visible matrix porosity, no apparent staining, no shows.		
	10	**SANDSTONE:** cream to light greyish brown, quartzose, clear quartz grains with abundant dolomite cement, gradational with very sandy dolomite, lower very-fine		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		grain, well sorted, rounded grains, moderately well consolidated, no visible porosity, no staining, no shows.		
	10	**CLAYSTONE:** off-white, calcareous, very soft.		
645.0 - 650.0	80	**DOLOMITE:** variably colored, commonly mottled, very pale yellowish brown to light greyish brown mottled with white (secondary?) dolomite crystals, fossiliferous with scattered to common oolite shadows, typically medium to coarse & spherical, wackestone to packstone to probable grainstone texture, original lime mud matrix is micro to lower very-fine crystalline, original grainstone sparry calcite or porosity is replaced with lower to upper very-fine to occasionally lower finely crystalline white dolomite, trace white anhydrite crystalline inclusions, in part silty, moderately hard, platy, mainly tightly packed crystals with no visible matrix porosity but traces white fine to medium crystalline inclusions, vug fill or fracture infill may indicate porosity, rare euhedral fine crystals indicate growth into void space, no staining, poor mineral fluorescence, no fluorescing cut in solvent.		
	20	**CLAYSTONE:** off-white, calcareous, very soft, as previously described.		
650.0 - 655.0	90	**DOLOMITE:** becoming predominantly very pale yellowish brown to pale greyish brown, mottled white in part, becoming mainly lower very-fine crystalline mudstone with scattered oolites, lesser wackestone to packstone and possible grainstone stringers, moderately hard and dense, no visible matrix porosity, scattered dolomite crystalline inclusions, mainly anhedral to subhedral but occasional euhedral rhombs 1.5 x 1.5mm & euhedral crystal cluster to 4mm Longitude, euhedral crystals indicate growth into void space, rare open hairline fracture with relic hydrocarbon staining, poor mineral fluorescence, no fluorescing cut in solvent.		
	10	**CLAYSTONE:** off-white, calcareous, very soft, as previously described.		
	0	**SHALE:** black, bituminous, dolomitic, moderately hard, platy.		
655.0 - 660.0	90	**DOLOMITE:** very pale yellowish brown to pale greyish brown, mottled white in part, lower very-fine crystalline mudstone with scattered oolites, lesser wackestone to packstone and possible grainstone stringers, moderately hard and dense, no visible matrix porosity, scattered dolomite crystalline inclusions, mainly anhedral to subhedral, poor mineral fluorescence, no fluorescing cut in solvent.		
	10	**CLAYSTONE:** off-white, calcareous, very soft, as previously described.		
	0	**SHALE:** trace, black, bituminous, dolomitic, moderately hard, platy.		
	0	**CHERT:** trace, light greyish brown, opaque with oolite shadows.		
660.0 - 665.0	90	**DOLOMITE:** becoming predominantly light greyish brown where clean to only slightly argillaceous and silty, locally medium to dark greyish brown to brownish black with increasing to abundant dark argillaceous matter, grading in parts to hard dolomitic shale, visible dark grey to black slightly wavy, pinched and discontinuous shaly partings, mainly micro-crystalline to lower very-fine crystalline to occasionally upper very-fine crystalline, occasional white secondary dolomite crystalline inclusions, mudstone texture with occasional oolite shadows, trace micro pyrite crystals, trace black bitumen filled slightly crenulated stylolites, trace chert laminae, moderately to very hard, platy, no visible matrix porosity, no staining, no shows.		
	10	**CLAYSTONE:** off-white, calcareous, very soft, as previously described.		
665.0 - 670.0	70	**DOLOMITE:** predominantly light greyish brown, locally medium to dark greyish brown to dark brown with increasing argillaceous matter, mudstone texture, lower very fine crystalline, rare hairline fracture, occasional black bituminous particles, occasionally cherty, rare chert laminae, no visible matrix porosity, no staining, no shows.		
	30	**LIMESTONE:** light greyish brown, occasionally mottled off white, locally medium brown with increasing argillaceous content, mudstone texture, moderately dolomitic, no visible matrix porosity, no staining, no shows.		
670.0 - 675.0	60	**LIMESTONE:** light greyish brown, occasionally mottled off white, locally medium brown with increasing argillaceous content, mudstone texture, moderately dolomitic, no visible matrix porosity, no staining, no shows.		
	40	**DOLOMITE:** variably colored with white secondary dolomite crystals mottling light to medium greyish brown micro-crystalline to lower very-fine crystalline dolomite, scattered to numerous oolite shadows, no visible matrix porosity but traces of white dolomite crystalline inclusions may indicate fracture infill and possible fracture porosity, no apparent staining, no shows.		
675.0 - 680.0	100	**DOLOMITE:** variably colored, very pale yellowish grey to very pale yellowish brown, translucent to opaque, light greyish brown, lesser medium brown, mottled in parts with secondary white dolomite crystals, lower to upper very-fine crystalline, mudstone to wackestone texture with fine to coarse spherical oolite shadows, occasional		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		oolite-supported packstone stringers, tightly packed crystals with no visible matrix porosity, scattered anhedral to subhedral and rare euhedral crystalline inclusions may indicate fractures and possible fracture porosity, poor mineral fluorescence, no fluorescing cut in solvent.		
680.0 - 685.0	100	**DOLOMITE:** very pale yellowish brown, light brown to medium grey to dark greyish brown with increasing argillaceous matter, micro-crystalline to lower very-fine crystalline, relic granular texture, trace anhydrite, trace pyrite, tightly packed and well cemented crystals, moderately hard, no visible matrix porosity, no shows.		
685.0 - 690.0	100	**DOLOMITE:** very pale yellowish grey to pale yellowish brown to light brown, medium to dark greyish brown with increasing argillaceous matter, mudstone texture, micro - lower very fine crystalline, relic granular texture, well cemented, moderately hard, trace anhydrite, trace pyrite, trace silty limestone, no visible matrix porosity, no shows.		
690.0 - 700.0	90	**LIMESTONE:** light to medium grey, pale yellowish brown in parts, slightly grading to very argillaceous, mudstone with rare oolites, no visible matrix porosity, no shows.		
	10	**DOLOMITE:** light to medium grey, very-fine crystalline, argillaceous, no visible matrix porosity.		
700.0 - 710.0	90	**LIMESTONE:** white to pale yellowish grey, commonly mottled, mudstone texture, silty, moderately to very argillaceous, firm, no visible matrix porosity, no staining, no shows.		
	10	**DOLOMITE:** medium to dark grey as previously described.		
710.0 - 715.0	95	**LIMESTONE:** white to light grey, slightly to moderately to locally argillaceous, silty, gradational in part with calcareous siltstone, traces micro mica flakes, traces disseminated organic matter, firm, no visible matrix porosity, no staining, no shows.		
	5	**DOLOMITE:** light brown to medium grey to dark greyish brown with increasing argillaceous matter, micro-crystalline to lower very-fine crystalline, relic granular texture, trace anhydrite, trace pyrite, tightly packed and well cemented crystals, moderately hard, no visible matrix porosity, no shows.		
	0	**SHALE:** trace, black, disseminated black organic matter, very firm and brittle.		
715.0 - 720.0	60	**SILTY LIMESTONE:** white to pale grey to light to medium grey, mudstone texture, moderately to very silty, moderately hard, no visible matrix porosity, no shows.		
	40	**SILTSTONE:** dark grey, argillaceous, moderately calcareous, moderately hard, sub-blocky to platy.		
720.0 - 725.0	50	**SILTY LIMESTONE:** white to pale grey to light to medium grey, mudstone texture, moderately to very silty, moderately hard, no visible matrix porosity, no shows.		
	50	**CALCAREOUS SILTSTONE:** light grey grading to dark grey with increasing argillaceous matter, moderately to very calcareous, moderately hard, sub-blocky to platy.		
725.0 - 730.0	100	**CALCAREOUS SILTSTONE:** light grey grading to mainly dark grey with increasing argillaceous matter, moderately to very calcareous, minor mica, minor disseminated organic matter, moderately hard, no visible porosity but traces anhydrite crystals may indicate fracture infill.		
730.0 - 735.0	100	**CALCAREOUS SILTSTONE:** light grey grading to mainly dark grey with increasing argillaceous matter, moderately to very calcareous, minor mica, minor disseminated organic matter, moderately hard, no visible porosity but traces anhydrite crystals may indicate fracture infill.		
735.0 - 740.0	95	**CALCAREOUS SILTSTONE:** light grey grading to mainly dark grey with increasing argillaceous matter, moderately to very calcareous, minor mica, minor disseminated organic matter, moderately hard, no visible porosity but traces anhydrite crystals may indicate fracture infill.		
	5	**LIMESTONE:** white to light grey, mottled, argillaceous, commonly silty, moderately firm, tight, no staining, no shows.		
740.0 - 745.0	95	**CALCAREOUS SILTSTONE:** light grey grading to mainly dark grey with increasing argillaceous matter, moderately to very calcareous, minor mica, minor disseminated organic matter, moderately hard, no visible porosity but traces anhydrite crystals may indicate fracture infill.		
	5	**LIMESTONE:** white to light grey, mottled, argillaceous with light colored clay in parts, commonly silty, moderately firm, tight, no staining, no shows.		
745.0 - 750.0	40	**CALCAREOUS SILTSTONE:** light greyish brown, mottled grey and brown in parts, clear quartz grains, moderately to very calcareous, grading in part to very silty limestone, firm to moderately hard, tight.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
745.0 - 750.0	30	**SILTY LIMESTONE:** light grey to light greyish brown, mudstone texture, moderately to very silty, slightly to moderately argillaceous, very soft, no visible matrix porosity, no apparent staining, no shows.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown grading to brownish black with increasing dark argillaceous matter and possible organic matter, locally earthy luster, lesser light grey mottled with dark grey argillaceous clasts, very calcareous, no visible porosity, no shows.		
750.0 - 755.0	60	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown grading to brownish black with increasing dark argillaceous matter and possible organic matter, locally earthy luster, lesser light grey mottled with dark grey argillaceous clasts, very calcareous, no visible porosity, no shows.		
	20	**SILTY LIMESTONE:** light grey to light greyish brown, mudstone texture, moderately to very silty and gradational in part with very calcareous siltstone, slightly to moderately argillaceous, no visible matrix porosity, no apparent staining, no shows.		
	20	**CALCAREOUS SILTSTONE:** light greyish brown, clear quartz, moderately to very calcareous, grading in part to very silty limestone, firm to moderately hard, tight.		
755.0 - 760.0	60	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown grading to brownish black with increasing dark argillaceous matter and possible organic matter, locally earthy luster, lesser light grey mottled with dark grey argillaceous clasts, very calcareous, no visible porosity, no shows.		
	30	**CALCAREOUS SILTSTONE:** light greyish brown, clear quartz, moderately to very calcareous, grading in part to very silty limestone, firm to moderately hard, tight.		
	10	**CLEAN SILTSTONE:** medium to dark brown to greyish brown grading to brownish black with increasing dark argillaceous matter and possible organic matter, moderately to very argillaceous, slightly to very calcareous, no visible porosity, no shows.		
760.0 - 765.0	60	**CALCAREOUS SILTSTONE:** light greyish brown, clear quartz, moderately to very calcareous, grading in part to very silty limestone, firm to moderately hard, tight.		
	40	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown grading to brownish black with increasing dark argillaceous matter and possible organic matter, moderately to very argillaceous, slightly to moderately calcareous, slightly to moderately hard.		
765.0 - 770.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown grading to brownish black with increasing dark argillaceous matter and possible organic matter, moderately to very argillaceous, slightly to moderately calcareous, slightly to moderately hard.		
	30	**CALCAREOUS SILTSTONE:** light greyish brown, clear quartz, moderately to very calcareous, grading in part to very silty limestone, firm to moderately hard, tight.		
770.0 - 775.0	50	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
	50	**CALCAREOUS SILTSTONE:** pale to light greyish brown, clear quartz, moderately to very calcareous, grading in part to very silty limestone, firm to moderately hard, tight.		
	0	**ANHYDRITE:** trace, white vein fragments may indicate fractures.		
775.0 - 780.0	50	**LIMESTONE:** mottled white to medium greyish brown with bioturbated appearance, mudstone to wackestone texture with trace oolites, slightly argillaceous in part, silty in parts, no visible matrix porosity but trace anhydrite crystalline inclusions and healed veins indicate possible fractures, no staining, no shows.		
	30	**MARL LIMESTONE:** white to pale greyish brown, commonly mottled light to medium greyish brown, typically very soft and grading to marlstone, commonly silty, no visible porosity, no staining, no shows.		
	20	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
780.0 - 785.0	60	**CALCAREOUS SILTSTONE:** pale greyish white, locally mottled with darker argillaceous and possible organic matter, gradational in part with silty lower very-fine grained silty sandstone, quartzose with mainly clear quartz grains in part with possible light brown relic hydrocarbon staining, well sorted, rounded grains, abundant light colored calcareous cement, gradational in parts with silty limestone, slightly to moderately consolidated, no visible porosity, no fluorescence, no shows.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
780.0 - 785.0	20	**SILTY LIMESTONE:** pale whitish grey, mudstone texture with bioturbated appearance, typically very silty and grading in part to very calcareous siltstone, no visible porosity, no staining, no shows.		
	20	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
785.0 - 790.0	40	**SILTY LIMESTONE:** pale whitish grey, mudstone texture with bioturbated appearance, typically very silty and grading in part to very calcareous siltstone, no visible porosity, no staining, no shows.		
	40	**CALCAREOUS SILTSTONE:** pale greyish white, locally mottled with darker argillaceous and possible organic matter, gradational in part with silty lower very-fine grained silty sandstone, quartzose with mainly clear quartz grains in part with possible light brown relic hydrocarbon staining, well sorted, rounded grains, abundant light colored calcareous cement, gradational in parts with silty limestone, slightly to moderately consolidated, no visible porosity, no fluorescence, no shows.		
	20	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
790.0 - 795.0	40	**CALCAREOUS SILTSTONE:** pale greyish white, locally mottled with darker argillaceous and possible organic matter, gradational in part with silty lower very-fine grained silty sandstone, quartzose with mainly clear quartz grains in part with possible light brown relic hydrocarbon staining, well sorted, rounded grains, abundant light colored calcareous cement, gradational in parts with silty limestone, slightly to moderately consolidated, no visible porosity, no fluorescence, no shows.		
	40	**SILTY LIMESTONE:** pale whitish grey, mudstone texture with bioturbated appearance, typically very silty and grading in part to very calcareous siltstone, no visible porosity, no staining, no shows.		
	20	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
795.0 - 798.0	70	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
	30	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
798.0 - 801.0	60	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
	40	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
801.0 - 804.0	70	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
	30	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
804.0 - 807.0	70	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
	30	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
807.0 - 810.0	70	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
	30	**ARGILLACEOUS SILTSTONE:** medium greyish brown grading to brownish black with increasing argillaceous and possible dark organic matter, mottled light grey in parts, moderately to very argillaceous, moderately to very calcareous, trace micro pyrite crystals, moderately hard, sub-blocky.		
810.0 - 813.0	70	**ARGILLACEOUS SILTSTONE:** medium greyish brown becoming mainly dark grey to greyish brown with increased argillaceous and possible dark organic matter, micro micaceous, trace micro pyrite crystals, clear quartz grains locally grading to lower very-fine grained, moderately to very argillaceous, moderately to very calcareous, moderately to very hard, sub-blocky to platy, no visible porosity due to abundant argillaceous matter and cement, no live staining, no fluorescence, no fluorescing cut in solvent BUT oily bubbles in acid after effervescence.		
	30	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
813.0 - 816.0	70	**ARGILLACEOUS SILTSTONE:** dark grey to dark greyish brown, micro micaceous, trace micro pyrite crystals, clear quartz with abundant dark argillaceous and probable organic matter, moderately to very calcareous, moderately to very hard, sub-blocky to platy, no fluorescence, no fluorescing cut in solvent but oily bubbles in acid after effervescence.		
	70	**ARGILLACEOUS SILTSTONE:** becoming mainly dark grey to dark greyish brown, micro micaceous, trace micro pyrite crystals, clear quartz with abundant dark argillaceous and probable organic matter, moderately to very calcareous, moderately to very hard, sub-blocky to platy, no fluorescence, no fluorescing cut in solvent but oily bubbles in acid after effervescence.		
	30	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
	30	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
816.0 - 819.0	60	**ARGILLACEOUS SILTSTONE:** dark grey to dark greyish brown, micro micaceous, trace micro pyrite crystals, clear quartz with abundant dark argillaceous and probable organic matter, moderately to very calcareous, moderately to very hard, sub-blocky to platy, no fluorescence, no fluorescing cut in solvent but oily bubbles in acid after effervescence.		
	30	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
819.0 - 822.0	60	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to dark grey to black with disseminated dark argillaceous and probable dark organic matter, as previously described, very hard, no live shows BUT oil bubbles in acid after effervescence.		
	30	**LIMESTONE:** pale whitish grey, mudstone texture with bioturbated appearance, in part silty, no visible porosity, no staining, no shows.		
	10	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
822.0 - 825.0	60	**ARGILLACEOUS SILTSTONE:** dark grey - olive black, disseminated dark, probably organic (bituminous) matter, very fine crystalline, moderate organic content, very calcareous, moderately hard, no visible porosity, oil bubbles in acid. No shows.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
822.0 - 825.0	30	**LIMESTONE:** medium grey, in part silty, mudstone, occasional wackestone, micro-laminated, in part		
	10	**CALCAREOUS SILTSTONE:** pale grey to light to medium brownish grey, in part slightly mottled, moderately to very calcareous, in part gradational with very silty limestone, clear quartz commonly gradational with silty lower very-fine grained sandstone, well sorted, rounded to well rounded grains, moderately consolidated, no visible porosity, no staining, no shows.		
828.0 - 831.0	80	**SILTSTONE:** dark grey, minor medium grey, organic material, highly calcareous, very fine grained. No visible porosity and no shows		
	20	**CALCAREOUS SILTSTONE:** medium grey, oily bubbles in acid, moderately hard, no visible porosity.		
831.0 - 834.0	95	**SILTSTONE:** medium - dark grey, very calcareous and argillaceous, moderate organic material, minor oil bubbles, moderately hard. No visible porosity and no shows		
	5	**CALCAREOUS SILTSTONE:** medium grey, highly calcareous, moderately hard, no visible porosity.		
834.0 - 837.0	95	**SILTSTONE:** medium - dark grey, very calcareous and argillaceous, moderate organic material, minor oil bubbles, moderately hard. No visible porosity and no shows		
	5	**CALCAREOUS SILTSTONE:** medium grey, highly calcareous, moderately hard, no visible porosity.		
837.0 - 840.0	85	**SILTSTONE:** light to dark grey, moderate organic material, argillaceous, calcareous, moderately hard. No visible porosity and no shows.		
	15	**CALCAREOUS SILTSTONE:** light - medium grey, moderate organic material in very thin layers, very calcareous, argillaceous, trace pyrite, trace anhydrite - vein fill?, trace oily bubbles in acid, moderately hard, no visible porosity.		
840.0 - 843.0	85	**SILTSTONE:** light - dark grey, moderate organic material, argillaceous, calcareous, moderately hard. No visible porosity and no shows.		
	15	**CALCAREOUS SILTSTONE:** light - medium grey, moderate organic material in very thin layers, very calcareous, argillaceous, trace pyrite, trace anhydrite - vein fill?, trace oily bubbles in acid, moderately hard, no visible porosity.		
843.0 - 846.0	90	**SILTSTONE:** medium - dark grey, moderately organic, very calcareous, argillaceous, moderately hard no shows		
	5	**CALCAREOUS SILTSTONE:** light - medium grey, moderate organic material in very thin layers, very calcareous, argillaceous, trace pyrite, trace anhydrite - vein fill?, trace oily bubbles in acid, moderately hard, no visible porosity.		
	5	**LIMESTONE:** clear, crystalline, vein fill?		
849.0 - 852.0	95	**SILTSTONE:** medium grey, very calcareous, argillaceous, possible organic material, trace mica, moderately hard, no shows. Trace mottled white limestone,		
	5	**CALCAREOUS SILTSTONE:** light - medium grey, moderate organic material in very thin layers, very calcareous, argillaceous, trace pyrite, trace anhydrite - vein fill?, trace oily bubbles in acid, moderately hard, no visible porosity.		
852.0 - 855.0	95	**SILTSTONE:** medium grey, very calcareous, argillaceous, moderately organic, trace mottled white limestone, trace mica, rare pyrite. Moderately hard. No shows.		
	5	**CALCAREOUS SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty/organic laminae. Trace mottled white limestone, trace mica. Moderately hard. No shows.		
855.0 - 858.0	95	**SILTSTONE:** medium grey, very calcareous, argillaceous, moderately organicl. Trace mottled white limestone, trace anhydrite. Moderately hard. No shows.		
	5	**CALCAREOUS SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty/organic laminae. Trace mottled white limestone, trace mica. Moderately hard. No shows.		
858.0 - 861.0	100	**ARGILLACEOUS SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous, in part gradational with very silty shale, moderately hard, sub-blocky to platy.		
861.0 - 864.0	100	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous grading in part to very silty shale, moderately hard, sub-blocky to platy.		
864.0 - 867.0	100	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous, gradational in part with very silty shale, moderately hard, sub-blocky to platy.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
867.0 - 870.0	100	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous, gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
870.0 - 873.0	100	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous, gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
873.0 - 876.0	80	**BITUMINOUS SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous and gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
	75	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous and gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
	20	**CALCAREOUS SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty/organic laminae. Trace mottled white limestone, tace mica. Moderately hard. No shows.		
	15	**CALCAREOUS SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty/organic laminae. Trace mottled white limestone, tace mica. Moderately hard. No shows.		
	10	**SILICEOUS SILTSTONE:** black, vitreous due to disseminated organic matter, apparent siliceous cement, hard, no visible porosity.		
876.0 - 879.0	95	**ARGILLACEOUS SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous and gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
	5	**SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty/organic laminae. Trace mottled white limestone, trace mica. Moderately hard. No shows.		
879.0 - 882.0	65	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous and gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
	25	**CALCAREOUS SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty organic laminae. Trace mottled white limestone, trace mica. Moderately hard. No shows.		
	10	**LIMESTONE:** light grey, argillaceous, organic, silty and sandy, no visible porosity, no staining, no shows.		
882.0 - 885.0	80	**SILTSTONE:** medium grey - olive black, very calcareous, variable disseminated dark organic matter, moderately to very argillaceous and gradational in part with very silty shale, moderately hard, sub-blocky to platy.		
	20	**CALCAREOUS SILTSTONE:** medium grey, very calcareous, argillaceous, minor dark silty/organic laminae. Trace mottled white limestone, tace mica. Moderately hard. No shows.		
885.0 - 888.0	100	**BITUMINOUS SILTSTONE:** dark greyish brown to brownish grey to brownish black, sub-vitreous luster due to micro-mica flakes and disseminated black organic matter, clear quartz commonly stained light brown with oil or bitumen matter, sub-rounded to rounded grains, very argillaceous and gradational in part with very silty shale, chips are slightly calcareous, very calcareous reaction upon crushing, moderately to very hard, platy to flaky, fetid odor upon crush effervescence (relic hydrocarbons), oily film and occasional oil bubbles on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
888.0 - 891.0	80	**BITUMINOUS SILTSTONE:** dark greyish brown to brownish grey to brownish black, sub-vitreous luster due to micro-mica flakes and disseminated black organic matter, clear quartz commonly stained light brown with oil or bitumen matter, sub-rounded to rounded grains, very argillaceous and gradational in part with very silty shale, locally slight fissility, chips are slightly calcareous, very calcareous reaction upon crushing, moderately to very hard, platy to flaky, fetid odor upon crush effervescence (relic hydrocarbons), oily film and occasional oil bubbles on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** brown black to black, sub-vitreous luster due to abundant disseminated black organic matter, moderately to very silty and commonly gradational with very argillaceous siltstone, sub-blocky to platy, locally slightly fissile, slight oily (non iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
891.0 - 894.0	80	**BITUMINOUS SILTSTONE:** dark greyish brown to brownish grey to brownish black, sub-vitreous luster due to micro-mica flakes and disseminated black organic matter, clear quartz commonly stained light brown with oil or bitumen matter, sub-rounded to rounded grains, very argillaceous and gradational in part with very		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		silty shale, locally slight fissility, chips are slightly calcareous, very calcareous reaction upon crushing, moderately to very hard, platy to flaky, fetid odor upon crush effervescence (relic hydrocarbons), oily film and occasional oil bubbles on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** brownish black to black, sub-vitreous luster due to abundant disseminated black organic matter, moderately to very silty and commonly gradational with very argillaceous siltstone, sub-blocky to platy, locally slightly fissile, slight oily (non iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
894.0 - 897.0	100	**BITUMINOUS SILTSTONE:** dark brown to greyish brown to lesser browish black, clear quartz (with argillaceous and bituminous matter) stained brown with probable relic hydrocarbons, becoming predominantly earthy luster, locally sub-vitreous, micro-micaceous, abundant disseminated dark organic matter, very argillaceous, in part gradational with very silty shale, moderately calcareous, moderately hard, sub-blocky to mainly platy, slight oily film on acid after effervescence, occasional oily bubbles forming acid, no fluorescence, no fluorescing cut in solvent.		
897.0 - 900.0	100	**BITUMINOUS SILTSTONE:** dark brown to greyish brown to lesser brownish black, clear quartz (with argillaceous and bituminous matter) stained brown with probable relic hydrocarbons, becoming predominantly earthy luster, locally sub-vitreous, abundant disseminated dark organic matter, very argillaceous, in part gradational with very silty shale, moderately calcareous, moderately hard, sub-blocky to mainly platy, slight oily film on acid after effervescence, occasional oily bubbles forming acid, no fluorescence, no fluorescing cut in solvent.		
900.0 - 903.0	100	**ARGILLACEOUS SILTSTONE:** becoming lighter in color, light greyish brown to predominantly medium greyish brown to lesser dark brownish grey to greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
903.0 - 906.0	90	**SILTSTONE:** light to medium greyish brown grading to dark brownish grey to greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
	10	**BITUMINOUS SHALE:** greyish black, sub-vitreous luster due to abundant disseminated black organic matter, in part moderately to very silty and commonly gradational with very argillaceous siltstone, sub-blocky to platy, locally slightly fissile, slight oily (non irridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows, Rare white calcite and dolomite veins, typically 0.1 v- 0.25mm thick, in part planar, in part crenulated (sine curve) rare calcite vein on apparent micro fault separating light siltstone from dark siltstone, rare fracture surface lined with sudhedral very-fine dolomite crystals - open fractures?		
906.0 - 909.0	60	**BITUMINOUS SILTSTONE:** dark brown to greyish brown to lesser brownish black, clear quartz (with argillaceous and bituminous matter) stained brown with probable relic hydrocarbons, locally sub-vitreous, abundant disseminated dark organic matter, very argillaceous, in part gradational with very silty shale, moderately calcareous, moderately hard, sub-blocky to mainly platy, slight oily film on acid after effervescence, occasional oily bubbles forming acid, no fluorescence, no fluorescing cut in solvent.		
	40	**CALCAREOUS SILTSTONE:** light to medium greyish brown, earthy luster, lesser resinous with disseminated dark organic matter, moderately argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
909.0 - 912.0	80	**CALCAREOUS SILTSTONE:** medium greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
	20	**BITUMINOUS SILTSTONE:** dark brown to greyish brown to lesser brownish black, clear quartz (with argillaceous and bituminous matter) stained brown with probable relic hydrocarbons, locally sub-vitreous, abundant disseminated dark organic matter, very argillaceous, in part gradational with very silty shale, moderately calcareous, moderately hard, sub-blocky to mainly platy, slight oily film on acid after effervescence, occasional oily bubbles forming acid, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
912.0 - 915.0	100	**SILTSTONE:** medium greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non-iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
915.0 - 918.0	90	**SILTSTONE:** medium greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non-iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
	10	**BITUMINOUS SILTSTONE:** dark brown to greyish brown to lesser brownish black, clear quartz (with argillaceous and bituminous matter) stained brown with probable relic hydrocarbons, locally sub-vitreous, abundant disseminated dark organic matter, very argillaceous, in part gradational with very silty shale, moderately calcareous, moderately hard, sub-blocky to mainly platy, slight oily film on acid after effervescence, occasional oily bubbles forming acid, no fluorescence, no fluorescing cut in solvent.		
918.0 - 921.0	90	**SILTSTONE:** medium greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non-iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
	10	**BITUMINOUS SILTSTONE:** dark brown to greyish brown to lesser brownish black, clear quartz (with argillaceous and bituminous matter) stained brown with probable relic hydrocarbons, locally sub-vitreous, abundant disseminated dark organic matter, very argillaceous, in part gradational with very silty shale, moderately calcareous, moderately hard, sub-blocky to mainly platy, slight oily film on acid after effervescence, occasional oily bubbles forming acid, no fluorescence, no fluorescing cut in solvent.		
921.0 - 924.0	55	**SILTSTONE:** medium greyish brown, earthy luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non-iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
	20	**SANDSTONE:** white, mottled in part mottled with black argillaceous or bituminous matter, quartzarenite, lower to upper very-fine clear quartz grains with occasional fine to medium shale clasts, mainly well sorted, rounded grains, slightly to moderated consolidated, very calcareous & gradational with sandy limestone, no visible porosity, no staining, no shows.		
	20	**SHALE:** greyish black, sub-vitreous luster due to abundant disseminated black organic matter, in part silty, sub-blocky to platy, locally slightly fissile, slight oily (non-iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
	5	**DOLOMITIC LIMESTONE:**		
924.0 - 927.0	60	**SILTY SHALE:** greyish black, sub-vitreous luster due to abundant disseminated black organic matter, in part moderately to very silty and commonly gradational with very argillaceous siltstone, platy, locally slightly fissile, slight oily (non-iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
	20	**BITUMINOUS SILTSTONE:** very dark greyish brown to brownish black, sub-vitreous luster due to abundant disseminated organic matter, calcareous, silty, in part gradational with very silty shale, no visible porosity, no shows.		
	20	**SILTY SANDSTONE:** white, quartzarenite, lower very-fine grained with rare floating angular shale clasts, becoming very silty, in part gradational with sandy siltstone, mainly well sorted, rounded grains, slightly to moderated consolidated, slightly to moderately consolidated, no visible porosity, no staining, no shows.		
927.0 - 930.0	80	**CALCAREOUS SILTSTONE:** medium brownish grey, in part with an earthy luster, slightly to very argillaceous, calcareous, slightly to moderately firm, no visible porosity, no shows.		
	20	**SHALE:** greyish black, sub-vitreous luster due to abundant disseminated black organic matter, in part moderately to very silty and commonly gradational with very argillaceous siltstone, platy, locally slightly fissile, slight oily (non-iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
930.0 - 933.0	70	**BITUMINOUS SILTSTONE:** medium greyish brown grading to dark brownish grey to brownish black with increasing disseminated bituminous matter as previously		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		described.		
	30	**BITUMINOUS SHALE:** greyish black, sub-vitreous luster due to abundant disseminated black organic matter, in part moderately to very silty and commonly gradational with very argillaceous siltstone, platy, locally slightly fissile, slight oily (non-iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
933.0 - 936.0	60	**SILTSTONE:** medium greyish brown, earthy to slightly 'resinous' luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non-iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
	40	**SHALE:** greyish black, sub-vitreous luster due to abundant disseminated black organic matter, in part moderately to very silty and commonly gradational with very argillaceous siltstone, platy, locally slightly fissile, slight oily (non-iridescent) film and occasional oily bubbles forming on acid after effervescence, no fluorescence, no shows.		
936.0 - 939.0	80	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, rare slickensides, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
	20	**SILTSTONE:** medium greyish brown, earthy to slightly 'resinous' luster, disseminated dark organic matter, moderately to very argillaceous, chips are moderately calcareous & very calcareous upon crushing, moderately hard, commonly platy, crushing liberates light brown (non-iridescent and non-fluorescing) oily film on acid & occasional oily bubbles in acid, no live shows.		
939.0 - 942.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, rare slickensides, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
942.0 - 945.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
945.0 - 948.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
948.0 - 951.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
951.0 - 954.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, grading occasionally to very argillaceous siltstone, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
954.0 - 957.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
957.0 - 960.0	100	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, grading occasionally to very argillaceous siltstone, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
960.0 - 963.0	60	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, grading locally to very argillaceous siltstone, chips are moderately calcareous, very calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
960.0 - 963.0	40	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, slightly 'resinous' luster due to abundant disseminated bituminous matter, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly to moderately calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
963.0 - 966.0	60	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, slightly 'resinous' luster due to abundant disseminated bituminous matter, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly to moderately calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, grading occasionally to very argilaceous siltstone, moderately calcareous, slight oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
966.0 - 969.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly to moderately calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, moderately calcareous, slight oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
969.0 - 972.0	70	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
972.0 - 975.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
975.0 - 978.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
975.0 - 978.0	20	**BITUMINOUS SHALE:** dark greyish brown to dark brownish grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
978.0 - 981.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
981.0 - 984.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brow to dark greyish brown to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
984.0 - 987.0	90	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
987.0 - 990.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greysh brown to dark brownish grey to greyish black, micro-micaceous, abundant disseminated organic matter, slightly silty, locally moderately silty, chips are slightly calcareous, moderately calcareous upon crushing, oily film on acid with occasional oily bubbles, no fluorescence, no fluorescing cut in solvent, moderately hard, platy to slightly fissile.		
990.0 - 993.0	95	**BITUMINOUS SILTSTONE:** dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous, slightly to moderately hard, sub-blocky to platy.		
	5	**BITUMINOUS SHALE:** dark greyish brown to browish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
993.0 - 996.0	80	**BITUMINOUS SILTSTONE:** dark brownish grey to dark greyish brown to locally brownish black, locally mottled with slightly calcareous white clay, slightly 'resinous' luster due to abundant disseminated bituminous matter, petroliferous odor, clear quartz grains with light brown (relic hydrocarbon) staining, in part gradational between silt-size grains and lower very-fine grains, in part sandy with floating very-fine grains, typically very argillaceous with dark bitumen-rich argillaceous matter, in part grading to very silty bituminous shale, slightly calcareous, slightly to moderately hard, very slight oily film on acid after effervescence, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
996.0 - 999.0	100	**BITUMINOUS SILTSTONE:** dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, locally pyritized surfaces, slightly calcareous, slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
999.0 - 1002.0	90	**BITUMINOUS SILTSTONE:** dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous, slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1002.0 - 1005.0	90	**BITUMINOUS SILTSTONE:** dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous, slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1005.0 - 1008.0	95	**BITUMINOUS SILTSTONE:** dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous, slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	5	**BITUMINOUS SHALE:** dark greyish brown to browish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1008.0 - 1011.0	90	**BITUMINOUS SILTSTONE:** dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous, slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1011.0 - 1014.0	95	**BITUMINOUS SILTSTONE:** becoming medium to dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	5	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1014.0 - 1017.0	100	**BITUMINOUS SILTSTONE:** medium to dark grey to greyish black to brownish black due to abundant disseminated black bituminous matter and organic argillaceous matter, patchy light grey mottling, clear quartz grains commonly with light to medium brown organic staining, rare pyrite crystals, slightly calcareous, slightly to moderately hard, sub-blocky to platy, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1017.0 - 1020.0	90	**BITUMINOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1020.0 - 1023.0	90	**BITUMINOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1023.0 - 1026.0	95	**BITUMINOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	4	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
	1	**DOLOMITE:** minor clear and colorless, mainly translucent to pale yellow to pale yellowish grey to opaque white with light to medium brown mottles (possible oolite shadows?), commonly pyritic as micro crystalline inclusions, replacement of apparent bitumen in matrix and hairline fracture infill, scattered planar fractures filled with pyrite and bitumen, tightly packed very-fine to fine to lower medium crystals with no visible porosity, no live staining, no fluorescence, no fluorescing cut in solvent.		
1026.0 - 1029.0	80	**BITUMINOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	15	**DOLOMITE:** becoming predominantly translucent to opaque white to pale yellowish brown with light to medium brown rounded mottles (possible spherical oolite shadows?), original texture is indistinct, upper very-fine to finely crystalline matrix with fine to medium oolite shadows?, occasionally finer matrix is bituminous and partially pyritized, scattered planar fractures typically stained with dark brown relic oil and bitumen, no live shows, no fluorescence, no fluorescing cut.		
	5	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly		

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		gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1029.0 - 1032.0	80	**BITUMINOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with white calcareous clay and micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	15	**DOLOMITE:** translucent to opaque white to pale yellowish brown as previously described, light to medium brown rounded mottles (possible spherical oolite shadows?), original texture is indistinct, upper very-fine to finely crystalline matrix with fine to medium oolite shadows?, occasionally finer matrix is bituminous and partially pyritized, scattered planar fractures typically stained with dark brown relic oil and bitumen, no live shows, no fluorescence, no fluorescing cut.		
	5	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
1032.0 - 1035.0	70	**DOLOMITE:** white mottled light to medium brown, original texture possibly wackestone to packstone (maybe grainstone but dolomitization has masked features) with medium to coarse possible oolite shadows with upper very-fine to finely crystalline matrix, occasional indistinct bioclastic fragments (spicules? or spicule-like), bitumen filled hairline fracture zones, traces micro-crystalline matrix pyrite and pyrite coating of oolites and pyrite replacement of bitumen staining in matrix, trace parallel grey dolomite laminations typically 0.1mm thick, tightly crystalline mosaic with no visible porosity, no staining, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1035.0 - 1038.0	90	**ARGILLACEOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black, common 'resinous' luster due to disseminated organic matter, slightly grading to very silty, commonly gradational with argillaceous siltstone described above, occasional micro mica flakes, rare pyrite micro crystals, slightly calcareous, moderately hard, sub blocky to commonly platy.		
	0	**DOLOMITE:** as previously described.		
1038.0 - 1041.0	97	**ARGILLACEOUS SILTSTONE:** dark grey to black, clear quartz grains, very argillaceous and commonly gradational with silty shale, argillaceous matter appears bituminous, minor pyrite crystals, moderately hard, slightly calcareous and possibly slightly dolomitic, no porosity, no shows.		
	3	**DOLOMITE:** white to light orange, very-fine to medium crystalline, indistinct bioclastic debris including spicule-like fragments, minor pyrite inclusions, well cemented with no visible matrix porosity, no shows.		
1041.0 - 1044.0	100	**ARGILLACEOUS SILTSTONE:** dark grey to black, clear quartz grains, very argillaceous and commonly gradational with silty shale, argillaceous matter appears bituminous, minor pyrite crystals, moderately hard, slightly calcareous and possibly slightly dolomitic, no porosity, no shows.		
1044.0 - 1047.0	100	**ARGILLACEOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1047.0 - 1050.0	100	**ARGILLACEOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1050.0 - 1053.0	95	**ARGILLACEOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	5	**SILTY SHALE:** dark grey to black, very silty and grational with argillaceous siltstone.		
1053.0 - 1056.0	90	**ARGILLACEOUS SILTSTONE:** medium greyish brown, predominantly earthy luster, locally mottled with micro calcite crystals, trace micro mica flakes & pyrite micro crystals, abundant disseminated dark organic matter and organic argillaceous matter, in part grading to very silty shale, slightly calcareous chips, moderately calcareous upon crushing, very slight oily film on acid after crushing and effervescence, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** dark greyish brown to brownish black, earthy luster, typically moderately to very silty, commonly gradational with argillaceous siltstone, moderately hard, platy.		
1056.0 - 1059.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1059.0 - 1062.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1062.0 - 1065.0	80	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**SILTY SHALE:** dark greyish brown to brownish black, earthy luster, typically moderately to very silty, commonly gradational with argillaceous siltstone, moderately hard, platy.		
1065.0 - 1068.0	95	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	5	**SILTY SHALE:** dark greyish brown to brownish black, earthy luster, typically moderately to very silty, commonly gradational with argillaceous siltstone, moderately hard, platy.		
1068.0 - 1071.0	95	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	5	**SILTY SHALE:** as previously described, commonly gradational with very argillaceous siltstone.		
1071.0 - 1074.0	95	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	5	**SILTY SHALE:** dark greyish brown to brownish black, earthy luster, locally mottled with light grey calcareous clay, typically moderately to very silty, commonly gradational with argillaceous siltstone, moderately hard, platy		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1074.0 - 1077.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1077.0 - 1080.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1080.0 - 1083.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace calcite vein fragments.		
1083.0 - 1086.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown to grey black, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous grading to very calcreous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1086.0 - 1089.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1089.0 - 1092.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1092.0 - 1095.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1095.0 - 1098.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1098.0 - 1101.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1101.0 - 1104.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1104.0 - 1107.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1107.0 - 1110.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminuous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		

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1110.0 - 1113.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1113.0 - 1116.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1116.0 - 1119.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1119.0 - 1122.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1122.0 - 1125.0	100	**ARGILLACEOUS SILTSTONE:** dark brownish grey to dark greyish brown, earthy luster, abundant disseminated argillaceous matter and possible black bituminous matter, clear quartz grains, trace micro-mica, trace pyrite crystals, slightly grading to very calcareous, slightly grading to very hard, sub platy, very slight petroliferous odor, oily bubbles on acid after crushing, no fluorescence, no fluorescing cut in solvent.		
1125.0 - 1128.0	90	**ARGILLACEOUS SILTSTONE:** dark grey to dark brownish grey to brownish black, earthy to slightly resinous luster to locally sub-vitreous due to scattered to numerous micro-mica flakes and moderately to heavy concentration of disseminated dark organic matter, very argillaceous and commonly gradational with very silty shale, locally slightly mottled with white to light grey calcite micro crystals and calcareous clay patches, occasional pyrite crystals, slightly calcareous, in part slightly dolomitic, slightly to moderately hard, mainly platy, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	9	**SILTY SHALE:** brownish black to black, silty, bituminous, slightly calcareous, gradational with argillaceous siltstone previously described.		
	1	**SILICEOUS DOLOMITE:** clear to translucent to predominantly very pale yellowish brown (buff) matrix with light to medium brown dolomitized bioclastic debris (mainly spicule-like fragments 1-2mm long), oolites and fine to medium grain rounded bioclastic grains (calcarenite), wackestone to packstone to possible grainstone, micro to finely crystalline tightly packed matrix, in part (probably originally porous) matrix dolomite has been replaced with with crypto-crystalline silica, grading locally to fossiliferous chert, rare micro pyrite crystalline inclusions in the matrix and occasionally coating allochems, no visible porosity, no staining, no shows.		
1128.0 - 1131.0	95	**DOLOMITE:** pale yellowish brown (buff) to pale brown, locally mottled white where crypto-crystalline silica has replaced dolomite matrix, locally grading to fossiliferous chert, wackestone to packstone to possible grainstone (heavy dolomitization has made original intergranular and inter-fragmental cement indistinct) fine to coarse bioclastic debris, oolites and bioclastic grains with micro to finely crystalline with micro to finely crystalline matrix, no visible porosity, no staining, no shows.		
	5	**ARGILLACEOUS SILTSTONE:** as previously described.		
1131.0 - 1134.0	100	**DOLOMITE:** as previously described.		
1134.0 - 1137.0	100	**DOLOMITE:** transparent to translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, rare black bitumen-filled crenulated stylolite, no visible porosity, no apparent staining, no shows.		
1137.0 - 1140.0	100	**DOLOMITE:** transparent to translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1140.0 - 1143.0	100	**DOLOMITE:** transparent to translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows.		
1143.0 - 1146.0	100	**DOLOMITE:** transparent to translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows.		
1146.0 - 1149.0	100	**DOLOMITE:** transparent to translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows.		
1149.0 - 1152.0	100	**DOLOMITE:** minor transparent to mainly translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows. SCATTERED clear euhedral prismatic Anhydrite crystals to 2mm long.		
1152.0 - 1155.0	100	**DOLOMITE:** minor transparent to mainly translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows, NUMEROUS pyrite crystalline inclusions, anhedral to euhedral crystals.		
1155.0 - 1158.0	100	**DOLOMITE:** minor transparent to mainly translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows,		
1158.0 - 1161.0	100	**DOLOMITE:** minor transparent to mainly translucent to opaque pale yellowish brown to light to medium brown wackestone to packstone to possible grainstone as previously described, locally siliceous and grading to fossiliferous chert, no visible porosity, no apparent staining, no shows,		
1161.0 - 1164.0	100	**DOLOMITE:** white to very pale yellowish brown (buff) to light brown to locally medium greyish brown, predominantly fossiliferous mudstone to wackestone with packstone and/or grainstone stringers, very-fine to finely crystalline matrix with floating bioclastic debris (fine to medium rounded bioclastic grains, spicule-like fragments to 2mm, fine to coarse oolites), locally siliceous with white cryptocrystalline silica replacing dolomite matrix, occasional fossiliferous chert stringers, mainly very clean but with visible planar white claystone laminations typically 0.1 - 0.2mm thick, rare slightly wavy black bitumen-filled stylolites, trace pyrite: micro-crystalline massive inclusions and occasional euhedral crystals filling micro vugs, no visible inter-crystalline matrix porosity except non-effective micro vugs filled with black bitumen, evidence of fracturing: trace bitumen filled hairline fractures, rare fracture surface with euhedral very-fine dolomite crystals, trace black bitumen coated planar fracture surface, trace pyritized vein fragments, TRACE Anhydrite euhedral prismatic crystals 2mm Long, no apparent live staining, no fluorescence, to fluorescing cut in solvent.		
1164.0 - 1167.0	100	**DOLOMITE:** pale yellowish brown to light to medium brown mudstone to wackestone with packstone to possible grainstone stringers as previously described, locally siliceous and grading to fossiliferous chert, no visible matrix porosity, no apparent staining, no shows,		
1167.0 - 1170.0	100	**DOLOMITE:** white to pale yellowish brown to light to medium brown to brownish grey, wackestone to packstone as previuously described, locally siliceous, no visible matrix porosity, loose dolomite crystals may indicate some porosity, no staining, no shows.		
1170.0 - 1173.0	100	**DOLOMITE:** white to pale yellowish brown to light to medium brown to brownish grey, wackestone to packstone as previously described, locally siliceous, no visible matrix porosity, loose dolomite crystals may indicate some porosity, no staining, no shows.		
1173.0 - 1176.0	100	**DOLOMITE:** light grey and tranlucent to mainly white to very pale yellowish brown (buff) with floating bioclastic grains and debris typically spicule-like fragments, rounded fine bioclastic grains, possible fine to medium grain oolites, indistinct fragments, mudstone to wackestone with packstone or grainstone stringers, matrix is tightly packed very to fine to finely crystalline, locally siliceous, no visible matrix porosity but numerous loose dolomite crystals and crystalline fragments may indicate porosity, trace evidence of fractures include pyrite crystalline inclusions, occasional euhedral dolomite crystal coated surfaces, bitumen stained fracture surfaces,		

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		occasional euhedral anhydrite prisms, rare stained hairline fractures, no live staining, traces black bitumen particles plugging micro vugs, no fluorescence, no fluorescing cut in solvent.		
1176.0 - 1179.0	100	**DOLOMITE:** light grey and translucent to mainly white to very pale yellowish brown (buff) with floating bioclastic grains and debris typically spicule-like fragments, rounded fine bioclastic grains, possible fine to medium grain oolites, indistinct fragments, matrix is tightly packed very to fine to finely crystalline, locally siliceous, no visiible matrix porosity but numerous loose dolomite crystals and crystalline fragments may indicate porosity, trace evidence of fractures include pyrite crystalline inclusions, occasional euhedral dolomite crystal coated surfaces, bitumen stained fracture surfaces, occasional euhedral anhydrite prisms, rare stained hairline fractures, no live staining, traces black bitumen particles plugging micro vugs, no fluorescence, no fluorescing cut in solvent.		
1179.0 - 1182.0	95	**DOLOMITE:** light grey and translucent to mainly white to very pale yellowish brown (buff) with floating bioclastic grains and debris typically spicule-like fragments, rounded fine bioclastic grains, possible fine to medium grain oolites, indistinct fragments, matrix is tightly packed very to fine to finely crystalline, locally siliceous, no visible matrix porosity but numerous loose dolomite crystals and crystalline fragments may indicate porosity, trace evidence of fractures include pyrite crystalline inclusions, occasional euhedral dolomite crystal coated surfaces, bitumen stained fracture surfaces, occasional euhedral anhydrite prisms, rare stained hairline fractures, no live staining, traces black bitumen particles plugging micro vugs, no fluorescence, no fluorescing cut in solvent.		
	5	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, gradational between argillaceous siltstone and very silty shale, earthy luster, locally resinous due to disseminated organic matter, slightly dolomitic, moderately to very firm, sub-blocky to platy.		
1182.0 - 1185.0	90	**DOLOMITE:** light grey and translucent to mainly white to very pale yellowish brown (buff) with floating bioclastic grains and debris typically spicule-like fragments, rounded fine bioclastic grains, possible fine to medium grain oolites, indistinct fragments, matrix is tightly packed very to fine to finely crystalline, locally siliceous, no visible matrix porosity but numerous loose dolomite crystals and crystalline fragments may indicate porosity, trace evidence of fractures include pyrite crystalline inclusions, occasional euhedral dolomite crystal coated surfaces, bitumen stained fracture surfaces, occasional euhedral anhydrite prisms, rare stained hairline fractures, traces black bitumen particles plugging micro vugs, no fluorescence, no fluorescing cut in solvent.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, gradational between argillaceous siltstone and very silty shale, earthy luster, locally resinous due to disseminated organic matter, slightly dolomitic, moderately to very firm, sub-blocky to platy.		
1185.0 - 1188.0	80	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to brownish black, earthy luster, clear quartz grains with abundant disseminated argillaceous matter, gradational with very silty shale, patchy dark organic matter, slightly calcareous, in part slightly to moderately dolomitic, slight to moderately firm, sub blacky.		
	20	**DOLOMITE:** as previously described.		
1188.0 - 1191.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to brownish black, earthy luster, clear quartz grains with abundant disseminated argillaceous matter, gradational with very silty shale, patchy dark organic matter, slightly calcareous, in part slightly to moderately dolomitic, slight to moderately firm, sub blacky.		
	30	**SILTY SHALE:** dark greyish brown to brownish black, earthy luster, typically very silty with clear quartz grains and gradational with argillaceous siltstone, rare micro-mica flakes, slightly calcareous, locally dolomitic, moderately to very firm.		
1191.0 - 1194.0	80	**ARGILLACEOUS SILTSTONE:** dark greyish brown, occasionally mottled pale whitish grey with irregular, disturbed and discontinuous calcareous clay partings (giving the impression they are inclusions rather than probably originally bedding laminae), earthy luster, clear silt-sized quartz grains with traces of light (silt-size) chert grains, dark lithic grains & micro mica flakes, typically very argillaceous, gradational with very silty shale, argillaceous matter is in part organic-rich, moderately calcareous, possibly slightly dolomitic, moderately firm, sub-blocky to platy.		
	20	**SILTY SHALE:** predominantly dark greyish brown and very silty with an earthy luster, gradational with very argillaceous siltstone above, in part dark grey to greyish black with a resinous luster due to increasing disseminated bituminous matter, mainly only very slightly calcareous but harder than the siltstone, very firm to slightly hard, sub-blocky to platy.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1194.0 - 1197.0	100	**ARGILLACEOUS SILTSTONE:** as previously described, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1197.0 - 1200.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown, earthy luster, clear silt-sized quartz grains with traces of light (silt-size) chert grains, dark lithic grains & micro mica flakes, typically very argillaceous, gradational with very silty shale, argillaceous matter is in part organic-rich, moderately calcareous, possibly slightly dolomitic, moderately firm, sub-blocky to platy very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** as above		
1200.0 - 1203.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown, earthy luster, clear silt-sized quartz grains with traces of (silt-sized) light chert grains, dark lithic grains & micro mica flakes, typically very argillaceous, gradational with very silty shale, argillaceous matter is in part organic-rich, becoming moderately to very calcareous, possibly slightly dolomitic, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** as above		
1203.0 - 1206.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown, earthy luster, clear silt-sized quartz grains with traces of light (silt-size) chert grains, dark lithic grains & micro mica flakes, typically very argillaceous, gradational with very silty shale, argillaceous matter is in part organic-rich, moderately to very calcareous, possibly slightly dolomitic, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** as above		
1206.0 - 1209.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown, earthy luster, clear silt-sized quartz grains with traces of light (silt-size) chert grains, dark lithic grains & micro mica flakes, typically very argillaceous, gradational with very silty shale, argillaceous matter is in part organic-rich, moderately to very calcareous, possibly slightly dolomitic, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** as above		
1209.0 - 1212.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown, earthy luster, clear silt-sized quartz grains with trraces of light (silt-size) chert grains, dark lithic grains & micro mica flakes, typically very argillaceous, gradational with very silty shale, argillaceous matter is in part organic-rich, moderately to very calcareous, possibly slightly dolomitic, slightly to very firm, sub-blocky to platy very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** as above		
1212.0 - 1215.0	80	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally browish black, earthy to locally resinous luster due to increasing disseminated black organic matter, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillacous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcreous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1215.0 - 1218.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, earthy to locally resinous luster due to increasing disseminated black organic matter, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1218.0 - 1221.0	90	**ARGILLACEOUS SILTSTONE:** as above		

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1218.0 - 1221.0	10	**SILTY SHALE:** as above		
1221.0 - 1224.0	90	**ARGILLACEOUS SILTSTONE:** as above		
	10	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1224.0 - 1227.0	90	**ARGILLACEOUS SILTSTONE:** as previously described, becoming very firm to slightly hard, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**SILTY SHALE:** as previously described, becoming slightly to moderately hard, locally slightly fissile, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1227.0 - 1230.0	100	**ARGILLACEOUS SILTSTONE:** as previously described, gradational with very silty claystone or shale, becoming very firm to predominantly slightly hard, slightly to moderately calcareous, in part slightly to moderately dolomitic, sub-blocky to platy, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1230.0 - 1233.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, earthy to locally resinous luster due to increasing disseminated black organic matter, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1233.0 - 1236.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1236.0 - 1239.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1239.0 - 1242.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally browish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillacous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1242.0 - 1245.0	50	**SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		

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1242.0 - 1245.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1245.0 - 1248.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent. 50 **SILTY SHALE:** as previously described, locally 'resinous' luster due to increased disseminated bituminous organic matter commonly gradational with very argillaceous siltstone, slightly calcareous, slightly hard, occasionally fissile, mainly platy.		
1248.0 - 1251.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent. 50 **SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1251.0 - 1254.0	50	**SILTY SHALE:** as previously described, locally 'resinous' luster due to increased disseminated bituminous organic matter commonly gradational with very argillaceous siltstone, slightly calcareous, slightly hard, occasionally fissile, mainly platy. 50 **ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1254.0 - 1257.0	60	**ARGILLACEOUS SILTSTONE:** as previously described, mainly gradational with very silty claystone or shale, slightly grading to very firm, slightly to moderately to locally very calcareous, possibly slightly dolomitic, faint petroliferous odor, no live shows: no fluorescence, no fluorescing cut in solvent. 40 **SILTY SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard.		
1257.0 - 1260.0	70	**BITUMINOUS SHALE:** very dark greyish brown to brownish black to black, slightly resinous lustre due to disseminated bituminous organic matter, locally with disseminated pyrite crystals, rare floating euhedral, lower fine pyrite crystal, trace micro-mica, slightly silty, slightly grading to locally very calcareous, slightly to moderately hard and brittle, slightly fissile, platy chips, traces of fracturing; rare planar healed calcite vein 100 microns thick, 30 **ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1260.0 - 1263.0	70	**ARGILLACEOUS SILTSTONE:** as previously described, mainly gradational with very silty claystone or shale, slightly grading to very firm, slightly to moderately to locally very calcareous, possibly slightly dolomitic, faint petroliferous odor, no live shows: no fluorescence, no fluorescing cut in solvent. 30 **BITUMINOUS SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, silty, in part gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, slightly to moderately hard, trace planar calcite veins indicating fracturing 0.10mm to 0.2mm		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		thick.		
1263.0 - 1266.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to locally brownish black, predominantly earthy luster, clear silt-sized quartz grains with traces of silt-sized dark argillite grains, light chert grains, micro-mica flakes, quartz commonly stained brown with bitumen or bituminous argillaceous matter, very argillaceous and gradational with very silty claystone and shale, in part slightly calcareous and possibly dolomitic, in part moderately to very calcareous, slightly to very firm, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** as previously described, locally 'resinous' luster due to increased disseminated bituminous organic matter commonly gradational with very argillaceous siltstone, slightly calcareous, slightly hard, occasionally fissile, mainly platy.		
1266.0 - 1269.0	70	**ARGILLACEOUS SILTSTONE:** as previously described, mainly gradational with very silty claystone or shale, slightly grading to very firm, slightly to moderately to locally very calcareous, possibly slightly dolomitic, faint petroliferous odor, no live shows: no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark grey to black, resinous luster due to disseminated bituminous organic matter, trace micro-mica flakes, moderately to very silty, commonly gradational with very argillaceous siltstone, slightly dolomitic, in part slightly fissile, very firm to slightly hard, good evidence of fracturing: calcite veins 0.1mm to 0.2mm, in part planar, in part slightly folded, in part discontinuous, commonly with micro-crystalline pyrite, rare 'micro-breccia-like' fragments with calcite and pyrite.		
1269.0 - 1272.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown, locally mottled with light whiteish grey pinched and discontinuous calcareous claystone laminae, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy, trace evidence of fracturing with healed planar calcite veins typically 0.1mm - 0.2mm thick occasionally with anhedral micro pyrite crystals, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark grey to greyish black to black, resinous luster due to disseminated black organic matter, in part slightly to moderately silty, slightly calcareous, possibly slightly dolomitic, slightly to moderately hard (harder than the argillaceous siltstone), sub-blocky to platy to locally slightly fissile.		
1272.0 - 1275.0	70	**BITUMINOUS SHALE:** dark grey to greyish black, earthy to resinous luster with disseminated dark organic matter, scattered micro mica flakes, in part silty and grading to very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard, mainly platy, locally slightly fissile, trace evidence of fracturing: healed calcite planar veins usually 0.1-0.2mm thick, rare chip with 2 intersecting fractures at ~ 80 degrees.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown, locally mottled with light whiteish grey pinched and discontinuous calcareous claystone laminae, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1275.0 - 1278.0	80	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, in part silty and grading to very argillaceous and bituminous siltstone.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcreous, moderately to very firm, sub-blocky to platy.		
1278.0 - 1281.0	90	**BITUMINOUS SHALE:** dark grey to greyish black, earthy to resinous luster with disseminated dark organic matter, scattered micro mica flakes, in part silty, locally grading to very argillaceous siltstone, slightly to moderately calcareous, slightly to moderately hard, mainly platy, locally slightly fissile, trace evidence of fracturing: healed calcite planar veins usually 0.1-0.2mm thick, rare chip with 2 intersecting fractures at ~ 80 degrees.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1281.0 - 1284.0	90	**BITUMINOUS SHALE:** as previously described, trace healed calcite veins, in part silty and grading to very argillaceous and bituminous siltstone.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1284.0 - 1287.0	90	**BITUMINOUS SHALE:** dark grey to greyish black, earthy to resinous luster with disseminated dark organic matter, scattered micro mica flakes, in part silty and grading to very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard, mainly platy, locally slightly fissile, trace evidence of fracturing: healed calcite planar veins usually 0.1-0.2mm thick.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1287.0 - 1290.0	95	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, in part silty and grading to very argillaceous and bituminous siltstone.		
	5	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1290.0 - 1293.0	90	**BITUMINOUS SHALE:** dark grey to greyish black, earthy to resinous luster with disseminated dark organic matter, scattered micro mica flakes, slightly to very silty and grading to very argillaceous siltstone, slightly to moderately calcareous, slightly to moderately hard, mainly platy, locally slightly fissile, trace evidence of fracturing: healed calcite planar veins usually 0.1-0.2mm thick.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1293.0 - 1296.0	80	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, slightly to very silty and grading to very argillaceous siltstone.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1296.0 - 1299.0	95	**BITUMINOUS SHALE:** dark grey to greyish black, earthy to resinous luster with disseminated dark organic matter, scattered micro mica flakes, in part silty, locally grading to very argillaceous siltstone, slightly to moderately calcareous, slightly to moderately hard, mainly platy, locally slightly fissile, trace evidence of fracturing: healed calcite planar veins usually 0.1-0.2mm thick.		
	5	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1299.0 - 1302.0	100	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part grading to argillaceous bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
1302.0 - 1305.0	100	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, slightly to very silty, in part grading to very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
1305.0 - 1308.0	100	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, slightly to very silty, in part gradational with argillaceous and bituminous siltstone.		
1308.0 - 1311.0	100	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, slightly to moderately to locally very silty, slightly to moderately calcareous, slightly to moderately hard.		
1311.0 - 1314.0	90	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter.slightly to very silty, in part grading to very argillaceous bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		claystone or shale, slightly to moderately calcreous, moderately to very firm, sub-blocky to platy.		
1314.0 - 1317.0	80	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter, slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1317.0 - 1320.0	90	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1320.0 - 1323.0	90	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1323.0 - 1326.0	90	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	10	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1326.0 - 1329.0	70	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1329.0 - 1332.0	60	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1332.0 - 1335.0	50	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster, moderately to predominantly very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, moderately to very firm, sub-blocky to platy.		
1335.0 - 1338.0	60	**BITUMINOUS SHALE:** very dark greyish brown to very dark greyish brown to very dark grey to brownish black, resinous luster due to disseminated bituminous matter, slightly to very silty, in part gradational with very argillaceous bituminous siltstone, scattered micro mica flakes, rare pyrite micro crystals, moderately calcareous, slightly to moderately hard hard, platy, locally slightly fissile, trace evidence of fractures: healed white planar calcite veins and vein fragments, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1335.0 - 1338.0	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1338.0 - 1341.0	60	**BITUMINOUS SHALE:** very dark grey grading to greyish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, slightly to moderately calcareous, slightly to moderately hard.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1341.0 - 1344.0	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1344.0 - 1347.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1347.0 - 1350.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionaly resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	30	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1350.0 - 1353.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1353.0 - 1356.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1356.0 - 1359.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1359.0 - 1362.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1362.0 - 1365.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionaly resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1365.0 - 1368.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, locally with disseminated water reactive clay and very soft, sub-blocky to platy.		
1368.0 - 1371.0	80	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1371.0 - 1374.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to		

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		moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1374.0 - 1377.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1377.0 - 1380.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1380.0 - 1383.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1383.0 - 1386.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1386.0 - 1389.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1389.0 - 1392.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1392.0 - 1395.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1395.0 - 1398.0	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1398.0 - 1401.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, in part with resinous luster due to disseminated organic matter. in part mainly earthy, slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1401.0 - 1404.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, locally with disseminated water reactive clay and very soft, sub-blocky to platy.		
1404.0 - 1407.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1407.0 - 1410.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to		

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		moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1410.0 - 1413.0	70	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1413.0 - 1416.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1416.0 - 1419.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1419.0 - 1422.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1422.0 - 1425.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		
1425.0 - 1428.0	60	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to brownish black, earthy luster to occasionaly resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1428.0 - 1431.0	50	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1431.0 - 1434.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1434.0 - 1437.0	80	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1437.0 - 1440.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, locally with disseminated water reactive clay and very soft, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** very dark greyish brown grading to brownish black to black as previously described, resinous luster due to disseminated organic matter. slightly to very silty, in part gradational with very argillaceous and bituminous siltstone, trace to scattered micro mica flakes, occasional micro pyrite crystals, slightly to moderately calcareous, slightly to moderately hard, trace evidence of fractures: calcite veins and rare micro-brecciated laminae with calcite and sometimes pyrite, slight petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1440.0 - 1443.0	50	**ARGILLACEOUS SILTSTONE:** medium to mainly dark brown to greyish brown, earthy luster, clear silt-sized quartz with abundant clay, minor silt-sized dark lithic or argillite particles, very argillaceous and gradational with very silty shale, moderately calcareous, very firm to slightly hard to locally moderately hard, sub blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark brown to greyish brown, becoming mainly earthy luster, locally grading to brownish black with abundant disseminated bituminous matter, micro micaceous, slightly grading to very silty, in part gradational with very argillaceous siltstone, moderately calcareous, slightly to moderately hard, platy, traces fracture evidence: trace healed calcite veins, no fluorescence, no fluorescing cut in solvent.		
1443.0 - 1446.0	70	**SILTY SHALE:** dark brown to greyish brown, earthy luster, locally grading to brownish black with increased disseminated bituminous matter, micro-micaceous, slightly grading to very silty, in part gradational with very argillaceous siltstone, moderately calcareous, slightly to moderately hard, platy, traces fracture evidence: trace healed calcite veins, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to mainly dark brown to greyish brown, earthy luster, clear silt-sized quartz with abundant clay, minor silt-sized dark lithic or argillite particles, very argillaceous and gradational with very silty shale, moderately		

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		calcareous, very firm to slightly hard to locally moderately hard, sub blocky to platy, no fluorescence, no fluorescing cut in solvent.		
1446.0 - 1449.0	70	**SILTY SHALE:** dark brown to greyish brown with an earthy luster, very dark greyish brown to brownish black with increasing disseminated bituminous matter, as previously described, micro-micaceous, slightly grading to very silty, in part gradational with very argillaceous siltstone, slightly to moderately calcareous, slightly to moderately hard, platy, trace fracture evidence: trace healed calcite veins, rare pyrite, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to mainly dark brown to greyish brown, earthy luster, clear silt-sized quartz with abundant clay, minor silt-sized dark lithic or argillite particles, very argillaceous and gradational with very silty shale, moderately calcareous, very firm to slightly hard to locally moderately hard, sub blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1449.0 - 1452.0	70	**SILTY SHALE:** as previously described.		
	30	**ARGILLACEOUS SILTSTONE:** medium to mainly dark brown to greyish brown, earthy luster, clear silt-sized quartz with abundant clay, minor silt-sized dark lithic or argillite particles, very argillaceous and gradational with very silty shale, moderately calcareous, very firm to slightly hard to locally moderately hard, sub blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1452.0 - 1455.0	50	**ARGILLACEOUS SILTSTONE:** medium to mainly dark brown to greyish brown, earthy luster, clear silt-sized quartz with abundant clay, minor silt-sized dark lithic or argillite particles, very argillaceous and gradational with very silty shale, moderately calcareous, very firm to slightly hard to locally moderately hard, sub blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** very dark greyish brown to brownish black, becoming mainly resinous with disseminated bituminous matter, locally earthy where siltiest, slightly grading to very silty, in part gradational with argillaceous siltstone, moderately calcareous, slightly to moderately hard, sub-blocky to platy, trace fracture evidence: trace calcite veins, trace pyrite crystalline inclusion fragments, rare pyritized planar fracture surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1455.0 - 1458.0	70	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, trace fracture evidence: planar calcite veins occasionally with pyrite, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionaly resinous with locally increased bituminous matter, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1458.0 - 1461.0	80	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, trace fracture evidence: planar to wavy to contorted calcite veins occasionally with pyrite, rare micro brecciated zones near calcite veins, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1461.0 - 1464.0	80	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, trace fracture evidence: planar calcite veins to 1mm thick, occasional pyrite, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1464.0 - 1467.0	70	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, trace fracture evidence: planar calcite veins to 1mm thick, trace pyrite vein fragments, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy		

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		luster to occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1467.0 - 1470.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
1470.0 - 1473.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, trace fracture evidence: planar calcite veins, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
1473.0 - 1476.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, locally with disseminated water reactive clay and very soft, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor but no live staining, no shows: no fluorescence, no fluorescing cut in solvent.		
1476.0 - 1479.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
1479.0 - 1482.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
1482.0 - 1485.0	60	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1485.0 - 1488.0	60	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1488.0 - 1491.0	70	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionaly resinous with locally increased bituminous matter, clear silt-sized quatrz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1491.0 - 1494.0	70	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1494.0 - 1497.0	70	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1497.0 - 1500.0	80	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1500.0 - 1503.0	80	**BITUMINOUS SHALE:** dark greyish brown to dark grey to brownish black, resinous luster with disseminated bituminous matter, silty, as previously described, faint petroliferous odor, no shows: no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1503.0 - 1506.0	60	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, in part with a resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, earthy luster to occasionally resinous with locally increased bituminous matter, clear silt-sized quartz, typically very argillaceous and gradational with very silty bituminous claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1506.0 - 1509.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1506.0 - 1509.0	40	**SILTY SHALE:** dark greyish brown, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1509.0 - 1512.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, locally with disseminated water reactive clay and very soft, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent.		
1512.0 - 1515.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1515.0 - 1518.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1518.0 - 1521.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1521.0 - 1524.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1524.0 - 1527.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionaly resinous with locally increased bituminous matter, clear silt-sized quatrz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally		

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		resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1527.0 - 1530.0	50	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1530.0 - 1533.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionaly resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1533.0 - 1536.0	70	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1536.0 - 1539.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, locally with disseminated water reactive clay and very soft, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent.		
1539.0 - 1542.0	60	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1542.0 - 1545.0	50	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational		

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		with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1545.0 - 1548.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionaly resinous with locally increased bituminous matter, clear silt-sized quatz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1548.0 - 1551.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard (typically not as hard as the bituminous shale), sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1551.0 - 1554.0	60	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown as previously described, mainly earthy luster, occasionally resinous with locally increased bituminous matter, clear silt-sized quartz and dark argillite grains, typically very argillaceous and gradational with very silty claystone or shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1554.0 - 1557.0	80	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1557.0 - 1560.0	80	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1560.0 - 1563.0	80	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		

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1563.0 - 1566.0	80	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown as previously described, earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1566.0 - 1569.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown as previously described, earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, earthy luster, locally resinous luster due to disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1569.0 - 1572.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1572.0 - 1575.0	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, locally soft with abundant smectitic (water-reactive) clays, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1575.0 - 1578.0	60	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1578.0 - 1581.0	60	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously		

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		described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1581.0 - 1584.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1584.0 - 1587.0	80	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	20	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1587.0 - 1590.0	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1590.0 - 1593.0	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1593.0 - 1596.0	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1596.0 - 1599.0	50	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1599.0 - 1602.0	50	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1602.0 - 1605.0	50	**SILTY SHALE:** dark greyish brown to locally brownish black, in part earthy luster, in part resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1605.0 - 1608.0	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1608.0 - 1611.0	60	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, locally soft with abundant smectitic (water-reactive) clays, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1611.0 - 1614.0	90	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	10	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1614.0 - 1617.0	80	**BITUMINOUS SHALE:** as above		
	20	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1617.0 - 1620.0	80	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1620.0 - 1623.0	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1623.0 - 1626.0	70	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, locally soft with abundant smectitic (water-reactive) clays, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1626.0 - 1629.0	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1629.0 - 1632.0	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1632.0 - 1635.0	70	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1635.0 - 1638.0	70	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1638.0 - 1641.0	80	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1641.0 - 1644.0	60	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1644.0 - 1647.0	70	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	30	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1647.0 - 1650.0	60	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1650.0 - 1653.0	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1653.0 - 1656.0	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite.		
	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1656.0 - 1659.0	70	**BITUMINOUS SHALE:** As above.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1659.0 - 1662.0	80	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, locally soft with abundant smectitic (water-reactive) clays, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1662.0 - 1665.0	80	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone,		

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		slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1665.0 - 1668.0	60	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1668.0 - 1671.0	60	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, in part mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of dark argillite & lithic grains, very argillaceous, gradational with very silty earthy shale, slightly to moderately calcareous, very firm to slightly hard, sub-blocky, rare pyritized surfaces, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous luster with patchy to evenly disseminated bituminous matter, trace micro mica flakes, commonly moderately to very silty and gradational with very argillaceous siltstone, slightly to moderately calcareous, sub blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare evidence of fracturing: rare calcite vein fragments and healed veins, rare pyrite, very rare micro-brecciated laminae.		
1671.0 - 1674.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter,trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrtized surface, rare calcite crystalline inclusions.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1674.0 - 1677.0	80	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	20	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1677.0 - 1680.0	60	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		fluorescing cut in solvent.		
1680.0 - 1683.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1683.0 - 1686.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1686.0 - 1689.0	80	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	20	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1689.0 - 1692.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black as previously described, mainly resinous to locally sub-vitreous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1692.0 - 1695.0	60	**BITUMINOUS SHALE:** becoming mainly dark greyish brown with a slightly earthy to dull resinous luster (less bitumin than previously seen) slightly to very silty, in part gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrtized surface, rare calcite crystalline inclusions.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		fluorescing cut in solvent.		
1695.0 - 1698.0	60	**BITUMINOUS SHALE:** mainly dark greyish brown with a slightly earthy to dull resinous luster as previously described (less bitumin than previously seen), slightly to very silty, in part gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to slightly hard, faint petroliferous odor, no live staining, no fluorescence, no fluorescing cut in solvent, rare pyrtized surface, rare calcite crystalline inclusions.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, locally soft with abundant smectitic (water-reactive) clays, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1698.0 - 1701.0	50	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** mainly dark greyish brown with a slightly earthy to dull resinous luster as previously described (less bitumen than previously seen), slightly to very silty, in part gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
1701.0 - 1704.0	60	**BITUMINOUS SHALE:** becoming dark greyish brown to brownish black with mainly resinous luster with disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrtized surface, rare calcite crystalline inclusions.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1704.0 - 1707.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1707.0 - 1710.0	90	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrtized surface, rare calcite crystalline inclusions.		
	10	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1710.0 - 1713.0	80	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	20	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1713.0 - 1716.0	70	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	30	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1716.0 - 1719.0	60	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark brown to greyish brown as previously described, locally mottled dark grey to black with patchy bituminous matter, mainly earthy luster, silt-sized quartz grains with traces of silt-size to floating very fine dark argillite & lithic grains, flakes and fragments, very argillaceous, gradational with very silty earthy shale, scattered black shale partings, slightly to moderately calcareous, slightly to very firm, sub-blocky, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1719.0 - 1722.0	80	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains with floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
1722.0 - 1725.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains with floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare copper colored mineralization.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
1725.0 - 1728.0	90	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains with floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	10	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrtized surface, rare calcite crystalline inclusions.		
1728.0 - 1731.0	80	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	20	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
1731.0 - 1734.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains with floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** dark greyish brown to brownish black with mainly resinous luster as previously described, disseminated bituminous matter, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
1734.0 - 1737.0	80	**BITUMINOUS SHALE:** dark greyish brown to dark grey grading to brownish black with increasing bitumen and decreasing silt content, mainly resinous luster as previously described, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyritized surface, rare calcite crystalline inclusions.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		fluorescing cut in solvent.		
1737.0 - 1740.0	60	**BITUMINOUS SHALE:** dark greyish brown to dark grey grading to brownish black with increasing bitumen and decreasing silt content, mainly resinous luster as previously described, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1740.0 - 1743.0	60	**BITUMINOUS SHALE:** dark greyish brown to dark grey grading to brownish black with increasing bitumen and decreasing silt content, mainly resinous luster as previously described, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone, slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains with floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1743.0 - 1746.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**BITUMINOUS SHALE:** dark greyish brown to dark grey grading to brownish black with increasing bitumen and decreasing silt content, mainly resinous luster as previously described, trace micro mica flakes, in part only slightly silty (highest bitumen content), in part moderately to very silty and gradational with very argillaceous siltstone (lowest bitumen content), slightly calcareous, mainly platy, in part slightly fissile, very firm to predominantly slightly hard, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent		
1746.0 - 1749.0	50	**SILTY SHALE:** becoming predominantly dark brown to dark greyish brown with an earthy luster, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & patchy micro-crystalline pyrite 'smears'.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1749.0 - 1752.0	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		fragments , typically very argillaceous - gradational with silty claystone, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
1752.0 - 1755.0	50	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
	50	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown, locally mottled dark grey to black with patchy bituminous matter as previously described, earthy luster, clear silt-size quartz grains, rare floating very-fine grained quartz, well rounded, commonly stained light to medium brown with argillaceous or bituminous matter, minor silt-sized argillite and/or lithic grains wuith floating lower-fine flakes and fragments , typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1755.0 - 1758.0	70	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown as previously described, earthy luster, typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrite crystalline inclusions & rare pyrite coated surfaces.		
1758.0 - 1761.0	70	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown as previously described, earthy luster, typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrite crystalline inclusions & rare pyrite coated surfaces.		
1761.0 - 1764.0	70	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
	30	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown as previously described, earthy luster, typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrite crystalline inclusions & rare pyrite coated surfaces.		
1764.0 - 1767.0	80	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
	20	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown as previously		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		described, earthy luster, typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrite crystalline inclusions & rare pyrite coated surfaces.		
1767.0 - 1770.0	60	**SILTY SHALE:** dark brown to dark greyish brown with an earthy luster as previously described, minor dull resinous luster over patchy black mottles of locally increased bitumen content, moderately to very silty, in part gradational with argillaceous siltstone (but harder), slightly calcareous, in part slightly dolomitic, slightly to moderately hard and brittle, sub-blocky to platy, scattered pyritized surfaces & micro-crystalline pyrite 'smears' typically 1 x 3mm in size.		
	40	**ARGILLACEOUS SILTSTONE:** dark greyish brown to dark brown as previously described, earthy luster, typically very argillaceous - gradational with silty claystone, scattered black shale partings, predominantly slightly to moderately calcareous and moderately to very firm, sub-blocky to platy, faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, rare pyrite crystalline inclusions & rare pyrite coated surfaces.		
1770.0 - 1773.0	60	**SILTY SHALE:** medium brownish grey to olive grey to greyish brown with an earthy luster, dark grey to brownish black to black with a sub-resinous luster due to increased disseminated bitumen content, in part mottled black with patchy bitumen, local bioturbated or soft sediment deformation appearance, micro-micaceous, scattered black carbonaceous flakes and fragments, slightly grading to very silty, scattered floating clear very fine quartz grains, in part grading to very argillaceous siltstone, trace micro pyrite crystals, slightly calcareous and slightly dolomitic, slightly to moderately fissile, sub-blocky to mainly platy chips, well indurated and slightly to moderately hard and brittle, traces fracture evidence: calcite and dolomite crystal coated surfaces, rare vein fragments, very slight petroliferous odor, no fluorescence, no fluorescing cut in solvent, oily bubbles and film on acid after effervescence.		
	40	**ARGILLACEOUS SILTSTONE:** medium greyish brown, very argillaceous with an earthy luster as previously described, in part becoming slightly to moderately hard.		
1773.0 - 1776.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, locally 'speckled' with light colored calcareous clay particles, predominantly clear silt-sized quartz, scattered lower very-fine round to well rounded quartz grains, possible light chert grains, scattered dark argillite or lithic particles, micro-mica flakes, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard otherwise, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence: trace white calcite healed vein fragments & calcite and dolomite crystalline inclusions, trace pyrite crystals - locally euhedral.		
	50	**SILTY SHALE:** dark greyish brown grading to black with increasing patchy to even bitumen content as previously described.		
1776.0 - 1779.0	70	**BITUMINOUS SHALE:** becoming dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, slightly grading to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly to moderately hard.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard otherwise, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1779.0 - 1782.0	70	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, slightly grading to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly to moderately hard, no fluorescence or fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1782.0 - 1785.0	70	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, slightly grading to very silty, in part gradational with bituminous argillacous siltstone, slightly calcareous and dolomitic, slightly to moderately hard, no fluorescence or fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly		

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		hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1785.0 - 1788.0	80	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, slightly grading to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly to moderately fissile, slightly to moderately hard, no fluorescence or fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1788.0 - 1791.0	80	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, slightly grading to very silty, in part gradational with bituminous argillacous siltstone, slightly calcareous and dolomitic, slightly to moderately fissile, slightly to moderately hard, no fluorescence or fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1791.0 - 1794.0	70	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, slightly grading to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly to moderately fissile, slightly to moderately hard, trace healed planar calcite veins 0.3mm thick.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1794.0 - 1797.0	70	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, moderately to very silty, in part gradational with bituminous argillacous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence: micro to very fine crystalline calcite inclusions, trace pyrite crystal coated surfaces.		
1797.0 - 1800.0	70	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1800.0 - 1803.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1803.0 - 1806.0	80	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly		

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		hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	20	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1806.0 - 1809.0	90	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, predominantly silt-sized quartz with minor dark argillite or lithic grains, trace micro mica flakes, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	10	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1809.0 - 1812.0	90	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	10	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1812.0 - 1815.0	80	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	20	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1815.0 - 1818.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1818.0 - 1821.0	50	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** medium to dark chocolate brown to greyish brown to olive brown with an earthy luster, locally mottled dark grey to black with patchy bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, moderately to very calcareous, in part dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1821.0 - 1824.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone,		

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		slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	50	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1824.0 - 1827.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown to olive brown with an earthy luster, locally mottled dark grey to black with patchy bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, moderately to very calcareous, in part dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	50	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1827.0 - 1830.0	60	**SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1830.0 - 1833.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark chocolate brown to greyish brown to olive brown with an earthy luster, locally mottled dark grey to black with patchy bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, moderately to very calcareous, in part dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1833.0 - 1836.0	80	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	20	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1836.0 - 1839.0	90	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	10	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1839.0 - 1842.0	95	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	5	**BITUMINOUS SHALE:** as above.		
1842.0 - 1845.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1845.0 - 1848.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with increased disseminated bituminous matter as previously described, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1848.0 - 1851.0	60	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1851.0 - 1854.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	50	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1854.0 - 1857.0	60	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1857.0 - 1860.0	60	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous		

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		and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1860.0 - 1863.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**BITUMINOUS SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1863.0 - 1866.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	50	**SILTY SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1866.0 - 1869.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**SILTY SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1869.0 - 1872.0	70	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	30	**SILTY SHALE:** dark grey to black with a resinous to sub-vitreous luster with disseminated bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1872.0 - 1875.0	60	**SILTY SHALE:** dark greyish brown and earthy mottled to brownish black with resinous bitumen rich patches, in part black with resinous to sub-vitreous even disseminated black bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	40	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1875.0 - 1878.0	50	**SILTY SHALE:** dark greyish brown and earthy mottled to brownish black with resinous bitumen rich patches, in part black with resinous to sub-vitreous even disseminated black bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
1878.0 - 1881.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	50	**SILTY SHALE:** dark greyish brown and earthy mottled to brownish black with resinous bitumen rich patches, in part black with resinous to sub-vitreous even disseminated black bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace micro to lower very fine calcite crystalline inclusions, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1881.0 - 1884.0	50	**ARGILLACEOUS SILTSTONE:** medium to dark brown to greyish brown, earthy luster as previously described, locally mottled dark grey to black with bituminous matter, very argillaceous, commonly gradational with very silty shale or claystone, slightly to moderately calcareous and dolomitic, moderately to very firm to slightly hard, sub-blocky to platy, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent, trace fracture evidence as previously described.		
	50	**SILTY SHALE:** dark greyish brown and earthy mottled to brownish black with resinous luster bitumen-rich patches, in part black with resinous to sub-vitreous luster with even disseminated black bituminous matter, scattered micro mica flakes, moderately to very silty, in part gradational with bituminous argillaceous siltstone, slightly calcareous and dolomitic, slightly fissile, slightly to moderately hard, trace fracture evidence: trace micro to lower very fine calcite crystalline inclusions and rare 'pinched' healed veins with secondary pyrite, rare pyrite crystal coated surface, very faint petroliferous odor, no fluorescence, no fluorescing cut in solvent.		
1884.0 - 1887.0	80	**SILTY SHALE:** dark greyish brown and earthy, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
1887.0 - 1890.0	70	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
1890.0 - 1893.0	70	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy,		

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		very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		
1893.0 - 1896.0	80	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		
1896.0 - 1899.0	80	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** as above		
1899.0 - 1902.0	70	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		
1902.0 - 1905.0	80	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		
1905.0 - 1908.0	70	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	30	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, eartthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic partcles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous,very firm to slightly hard, sub-blocky to sub-platy.		
1908.0 - 1911.0	80	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with		

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		very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		
1911.0 - 1914.0	80	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		
1914.0 - 1916.0	80	**SILTY SHALE:** dark greyish brown and earthy as previously described, locally mottled with dark grey to black bituminous patches with a resinous luster, micro-micaceous, silty, in part grading to very argillaceous siltstone, slightly to moderately calcareous, in part fissile, slightly to moderately hard, sub-platy to platy, very faint petroliferous odor in samples, no fluorescence, no fluorescing cut in solvent.		
	20	**ARGILLACEOUS SILTSTONE:** medium to dark greyish brown to olive brown, earthy luster, clear silt-sized quartz grains with scattered dark argillite and/or lithic particles and occasional floating fragments, very argillaceous and gradational with very silty claystone or shale, scattered thin shale partings, moderately to very calcareous, very firm to slightly hard, sub-blocky to sub-platy.		

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