

FINGAL55B - Lithology Summary

HOLE NAME: FINGAL55B
R.L. of Hole: 826.00 m
Easting: 591126.00
Northing: 5387069.00
Date Drilling Commenced: 31/05/2007
Date Drilling Completed: 11/06/2007
Drill Company: Spaulding Drilling
Drill Rig: GNK 850 rig
Core Size: HQ3
Drill Fluid: Water
Hole Diameter: HQ3
PCD Depth: 123.00 m
Total Core Depth: 369.10 m



FROM	TO	THICKNESS	CORE LOSS	GEOLOGICAL DESCRIPTION	COMMENTS (SEAM NAME)
123.00	129.40	6.40		SANDSTONE (SS): F-grained, light grey to white, moderately to well sorted, minor sparse mudstone semi round mudstone clast. 128.0-129.0 – Mudstone semi-round clasts (2 – 5 cm) in sandstone matrix	
129.40	136.00	6.60		SS: Fine to Medium grained, light grey to white, mod – well sorted, massive unit, gradational contact with below unit	
136.00	136.30	0.30		Conglomerate (CGL): Semi-round brown to grey mud pellets in sandy matrix	
136.30	144.50	8.20		SS: Fine to Medium grained lithic sandstone, medium grey (darker than above unit) mod to well sorted, -136.9 – sparse and small coaly lenticular fragments (<5 cm thick) -138.5 – 138.7 – Bedding at 8 degrees, -138.8 sparse pebble sized mudstone clast -139.8 – 141.0 – thin band with coaly/carbonaceous bands -143 – 144.5 – SS, soft and fractured, mod sorting	
144.50	148.10	3.60		SS: Fine to Medium grained, thinly bedded, med grey, badly broken along carbonaceous bedding planes and along fractures at ~80 degrees -144.4 – 146.5 – Coaly/carbonaceous laminae -147.5 – 147.6 – Fine carbonaceous. Sandstone with small (<10 cm) visible x-bedding, bedding at 5-10 degrees	
148.10	151.20	3.10		SS: Fine to Medium grained, medium grey, well sorted, soft (can break with hand), minor fine grained black 'specks' throughout, -149.75 – 149.8 – Siltstone bands, bedding at 10 degrees -151.0 – 151.2 – Carbonaceous. Fragments, sharp contact at 25 degrees	
151.20	151.95	0.75		SILTSTONE (SL): Fine, dark grey to black, gradational contact, irregular/wavy bedding at 151.5 -151.6 – 152 – carbonaceous, black	
151.95	153.30	1.35		SS: Fine grained, med. grey, mod to well sorted, dark black carbonaceous grains throughout, lining upwards	
153.30	156.00	2.70		SS: w/ interbedded siltstone, dark grey to black (dark grey sands). Very Fine – Fine grained, well sorted well rounded, carbonaceous throughout (TO). -153.9 – 154.2 – Siltstone (SL) w/ minor sand -154.5 – SS bedding at 10 degrees -153.5 – Fractures @ 60 degrees -155.3 – Fractures (~3) @ 60 degrees with minor calcite	
156.00	157.40	1.40	CL - .23	SL: dark grey, laminae w/ minor sands @ base - gradational contact with SS below	
157.40	158.10	0.70		SS: dark grey Fine to Med grained and carbonaceous TO, - badly broken – potential zone of core loss	
158.10	158.25	0.15		CARBONACEOUS MUDSTONE (CM): dark grey to black thinly laminated - fractures conchoidally and along bedding planes when hit with hammer - gradational contact with ss	
158.25	159.40	1.15		SS: F grained, grey with interbeds of bright and dull coal, -158.45 – 158.5 – Bright coal with sand -158.6 – 10 cm coal band, bright with fine cleeting	
159.40	160.10	0.70		MUDSTONE (MS): light grey, massive 160.00 – minor calcite in fracture (@80 degrees) Grad contact with CM below	
160.10	160.30	0.20		CM: black and shaly, fine mudstone pellets visible - badly broken with minor calcite on irregular fracture planes - becoming sandy at 160.3, grad contact	
160.30	161.20	0.90		SS: F grained, mod sorting, dark grey and carbonaceous TO, - sharp contact with underlying SL/MS	
161.20	162.20	1.00		CM: w/ interbeds of bright coal and coaly laminae - gradational contact with MS/SL below	
162.20	164.30	2.10		MS/SL: Med grey, thin laminae TO - no carbonaceous material, bedding at 0 degrees 164.25 light grey and dark grey bands 2 – 10 cm thick	
164.30	165.70	1.40	CL - .23	MS/CM (50:50): Interbedded, dark black to grey, minor cm material	
165.70	166.50	0.80		CM: minor sands TO -166 – 166.5 – 10.64t grey sands w/ CM pellets, fining upward	
166.50	166.95	0.45		CM: w/ interbeds of Bright coal (~C3) CM:CO = 70:30 SAMPLE #1 – 166.5 – 166.95 Coal bright with fine cleat	UPPER A SEAM SAMPLE #1 – 166.5 – 166.95
166.95	167.00	0.05		CM: dark grey to black - grad contact with ms	
167.00	169.40	2.40		CM/MS: Interbedded CM and MS (50:50) – - laminated dark grey to black - 168.4 – 168.5 – subvertical fracture healed with red mineralization - 168.7 – 168.9 – subvert fracture healed with red mineralisation Note: Red mineralization correlates to red mineralization identified in twin hole	
169.40	169.70	0.30		BONEY COAL (BC): subvert fractures with red mineralization	
169.70	170.64	0.94		CM: dark grey to black, thinly bedded to laminated, 169.8 – 169.9 – Badly broken – zone of core loss (CL)?	
170.64	170.93	0.29		BC/CM: Interbedded, white and red secondary mineralization on sub vertical healed fractures, 170.93 – thin (<10 cm) zone of coal with fine cleats	
170.93	172.30	1.37		CM – dark grey to black, lam., -171.3 – 171.38 – thin coaly(?) laminae -171.5 – 171.8 – Fractured @ 30 – 45 degrees, badly broken with slicken sides	LOWER A SEAM ? Sample 2 170.64 - 170.93
172.30	172.33	0.03		COAL: thin coal bright with fine cleating-	
172.33	174.40	2.07		MS: carbonaceous, dark grey to black -171.3 – 173.38 – Fractured @ 60 – 80 degrees (> 3 clear fracture planes) -171.5 -171.8 – Highly Fracture @ 30 – 45 degrees, badly broken (BB) w/ slickensides	
174.40	175.30	0.90		MS/ Claystone (CS): dark grey with light grey interbeds, laminae 175 – 175.2 – clayey w/ healed fractures (fractures @80 degrees)	
175.30	176.70	1.40	CL - 0.12	CM: dark black on surface, dense w/ minor sands @176.0 - 176.2 fractured at 80 degrees TO	
176.70	184.00	7.30	CL - 0.27	SS: Fine to Medium grained, carbonaceous, dark grey to black, massive, cross bedding visible at 179.5 178 – 180.4 – M grained w/ carbonaceous mud matrix 179 – 179.5 – Badly broken 180 – 180.4 Badly Broken, LI grey and dark grey beds (50:50) 182.9 – 183.0 – irregular coaly fragments Sharp basal contact	

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184.00	184.75	0.75		SS - M grained, fining upward, dark grey w/ carbonaceous mud matrix 184.3 - 184.4 - mud pellets in irregular beds 184.5 - 184.75 - coal bands, lenticular fragments (<10 cm)	
184.75	184.80	0.05		COAL (CO) - Thin bright coal band - sharp basal contact	
184.80	187.10	2.30		SS - Fine grained, bedding at 10 degrees, dark grey to black 185.5 - 186 - M grained with sleep cross bedding 186.3 - 186.45 - bedding at 5 - 10 degrees, slickensides on bedding Coaly fragments throughout (TO)	
187.10	188.30	1.20		COAL: very dull and moderately dense with MS interbeds 187.1 - 187.4 - Boney Coal with mudstone cleating 187.4 - 188.1 - CM/BC dense (50:50) 188.1 - 188.3 - CM w/ minor BC, dull SAMPLE 3 187.1 - 188.1 (Upper B Seam)	UPPER B SEAM 187.1 - 188.1 (Upper B Seam) Sample 5
188.30	188.40	0.10		Tuff (VT): brownish grey, dense and clayey, sharp contact - Previously described as expanding clays	Previously described as expanding clays
188.40	188.71	0.31		CM: Dense, dark black, grading up to dull boney coal at 188.4	
188.71	188.90	0.19		VT: Lt brownish grey, clayey texture	
188.90	189.40	0.50		CO/CM (50:50) - dark black, no clear cleating, but not dense Irregular fractures on carbonaceous mudstone bedding SAMPLE 4 - 188.9 - 189.4	LOWER B SEAM SAMPLE 3 - 188.9 - 189.4
189.40	190.75	1.35	CL - 0.2	CO: dark black, non-dense (potential Core loss 189.4 - 189.6) 189.6 - 189.8 - C5/C6 - dull and dense 189.8 - 190.1 - C4, cleated bright 190.1 - 190.2 - Thin MS band 190.2 - 190.6 - C5 coal w/ CM interbeds 190.6 - 190.7 - C4 coal - cleated, bright at base, white calcite mineralisation SAMPLE 5 189.7 - 190.7 (Lower B Seam)	LOWER B SEAM SAMPLE 4 189.7 - 190.7
190.75	190.80	0.05		VT: brown clayey texture	
190.80	191.40	0.60		CO: dark black 190.8 - 191.1 - C3 coal - cleated with minor CM 191.1 - 191.2 - C4, badly broken 191.2 - 191.4 - C6, badly broken w/ 4 10 cm thick tuff bands	LOWER B SEAM
191.40	191.60	0.20		VT: w. CM interbeds, dark brown	
191.60	192.40	0.80		MS - Light grey, massive 192.0 - 192.1 - 3 fractures at 5 degrees w/ slickensides; bedding plane parallel 192.1 - 192.4 swirled/irregular bedding w/ coal stringers	
192.40	192.50	0.10		CO: C4 band, badly broken with fine cleating	
192.50	193.70	1.20		MS: Lt grey, thinly laminated with light grey and dark grey interbeds	
193.70	196.00	2.30		SS - Lt to medium grey, very fine grained with thin SL interbeds, bedding at 5 degrees TO 193.7 - 195 - interbeds of SL - very fine grained sand 193.7 - 194 - Healed fractures at 60 Degrees 195.5 - 196 - Fractures (x3) healed w/ calcite at 50 degrees Gradational contact with underlying SL SL: grey and dark grey bands, laminae at 5 degrees 196.7 - 199.5 - Bedding at 5 degrees 197.2 - 197.3 Fractures at 50 degrees (x2) 198.3 - 199.6 Broken fractured/fault at 45 degrees - minor calcite on a few planes Basal contact at 45 degrees - sharp fault/slip plane, slickensides	
200.30	208.75	8.45		SS: Med. grained lithic sandstone, light grey to grey, massive with no clear sedimentary structures, soft friable sands. 200.3 - 200.6 - Fracture zone with multiple fracture planes from 50 - 70 degrees, small displacement(?) 200.8 - 201.1 - Multiple fractures at 70 degrees, minor calcite mineralization 202.5 - Fracture at 70 degrees 203.3 - 203.5 - Fracture at 70 degrees 204.1 - 204.2 - Fracture at 60 degrees 205 - 205.15 - Thin (<1 cm) coaly laminae and debris 205.6 - 206.7 - Sparse irregular, small (<22 cm) mud pellets, 2 fractures at 45 degrees no slickensides (@ 205.9 - 206.2) 206.8 - 207.0 - 4 fractures with minor slickensides, bedding visible at 5 - 10 degrees 207.8 - 208.5 - Coaly wisps and thin irregular bedding (<3cm thick) 208.5 - 208.75 - Finer grained than above, with sharp basal contact	
208.75	208.80	0.05		CM/CO (50:50): dark grey to black, fractured and badly broken on irregular fracture planes	
208.80	208.90	0.10		VT: dark brown w/ small black flecks	
208.90	209.20	0.30		CM: with SL, dark grey at base and grading up to black	
209.20	209.42	0.22		TUFF: med to light brown - soft and expanding (difficult drilling), irregular regular bedding (?)	
209.42	209.80	0.38		Boney/Dull Coal: w/ CM TO, dark grey to black Badly broken - bedded with small cleats occasionally visible	
209.80	210.00	0.20		VT - med to light brown, soft Contact is fault surface at 70 degrees	
210.00	210.40	0.40		BONEY/DULL COAL (CO): Black and non-dense, small cleats visible Badly broken with slickenside surfaces at multiple angles CM at base SAMPLE 6 210.0 - 210.4	SAMPLE 6 209.90 - 210.30 Unnamed Coal
210.40	217.33	6.93		MS: med grey w/ dark grey interbeds, thinly laminated 210.4 - 211.4 - convoluted/disturbed bedding broken along bedding planes at 50 degrees 211.9 - 212 - 2 fractures at 60 - 70 degrees, no clear slickensides 212.3 - 212.6 - F to VF sand interbeds, thinly laminated throughout 212.5 - 213.4 - interbedded dark grey and light grey laminations 213.0 - fracture at 30 degrees no clear slickensides 213.4 - 215 - Bedding laminae at 0 degrees 215 - 215.4 - Sandy interbeds, light grey and thinly bedded 215.8 - 216.1 - Fractures (3) at 40, 20, 50 degrees Sharp basal contact with CM	
217.33	217.67	0.34		CM: Dark black w/ MS interbedded Gradational contact, interbeds of SS at base	
217.67	218.13	0.46		SS: Fine grained sand with thin interbeds of CM (60:40)	
218.13	218.60	0.47		MS: Lt grey laminae, convoluted beds at top 218.3 - 218.4 - Badly broken	

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218.60	219.60	1.00		SL/SS (50:50); interbedded sills and sand laminae LI grey, bedding 0 degrees 219.6 – Fractures with normal offset bedding, small displacements (< 1 cm) w/ slickensides, healed fractures w/ normal offset	
219.60	220.30	0.70		MS: med grey, laminations TO at 5 degrees, sharp basal contact at 50 degrees	
220.30	223.60	3.30		SS: Med grained sandstone, med grey w/ white calcareous grains (?), thinly bedded, soft sand 220.7 – bedding parallel fractures 221.1 – bedding parallel fracture 222.5 – 223.6 – fractured and jointed along bedding and subvertical SS: w/ abundant mud pellet clasts (< 2cm diameter), irregular shaped rounded pellets 224.6 – large mud pellet 224.6 – 224.8 – irregular bedding with CM pellets and coaly fragments	
223.60	224.10	0.50		SS: Med grey w/ white grains, well sorted, 227.0 – 227.6 Finer grained than above, thinly bedded w/ minor carbonaceous/coaly laminae at 227.4 228.2 – 228.25 – Band of mud pellet CGL, sharp basal (erosional) contact	
224.10	224.80	0.70		SS: Fine to Medium grained, mod sorting, grey to med grey, 1-2 mm thick coaly laminae at top, bedding at 5 degrees, some disturbed bedding 228.6 – 230.0 – thin bedded w/ MS interbeds 230.2 – 230.5 – M-Coarse grained with coaly laminae 231 – 231.35 – Mud pellet CGL 231.25 – 232.9 – Massive bedding at 0 degrees 233.2 – 233.3 – Sparse coaly wisps 233.6 – 234.0 – Thin CM bands and large (5 cm) irregular CM clast 234.0 – 236.65 – grey with white and carbonaceous grains Sharp basal contact	
229.20	236.65	7.45		SS: VF grained, well sorted, bedding wavy 45-70 degrees Sharp basal contact	
236.65	237.30	0.65		SS: Med grey, med grained, abundant CM/CO wisps - sharp contact with CM - contact at 45 degrees with slickensides	
237.30	238.25	0.95		CM: dark black with irregular bedding, dark black, thin SS interbeds - basal contact irregular at 45 degrees	
238.25	238.50	0.25		VT – Dark brown – irregular basal contact at 60 degrees	
238.50	238.55	0.05		MS: Med grey w/ mud pellet clast and SS, CM at base	
238.55	238.67	0.12		-grad contact	
238.67	238.80	0.13		CM/Dull Coal (50:50) – dark black, mod dense, bedded with slightly metallic sheen on surfaces	
238.80	238.95	0.15		VT: creamy grey to white, laminae, previously described as expanding clay	
238.95	238.98	0.03		CO: very dull, mod dense and black SEAM D	
238.98	239.48	0.50		CO: Dull, bedded with thin (<0.5 cm) bright bands -cleated on some fracture planes visible SAMPLE 7	D SEAM SAMPLE 7 - 238.98 - 239.48
239.48	239.60	0.12		CO: dull, dark black with dark brown (VT?) thin inter beds (<0.5 cm)-	
239.60	239.75	0.15		CO: dull, black, thinly bedded with minor bright bands (< 2 mm thick) TO - sharp basal contact	
239.75	242.60	2.85		MS: LI grey, thinly bedded to laminated 239.75 – 240.2 minor wavy bedding w/ darker grey interbeds 240.9 Fracture at 50 degrees	
242.60	243.80	1.20		MS: Grey to med grey laminae 243.0 – 243.1 – irregular wavy bedding(?) 243.2 – Fracture, irregular/wavy, incomplete slickensides Carbonaceous at base	
243.80	243.94	0.14		VT: brown, waxy texture	
243.94	244.08	0.14		CO/CM (50:50): Dull, bedded	
244.08	244.10	0.02		VT: Dark brown w/ crystals visible	
244.10	245.00	0.90		CO: black 244.1 - 244.45 – Dull Coal, non-dense, black 244.45 – 244.80 – Dull coal w/ abundant mm thick subvertical calcite veins 244.80 – 244.82 – Dull Coal + CM w/ calcite veins 244.82 – 244.84 – VT, small normal fault with 5 mm of displacement 244.84 – 245.00 – Dull coal w/ VT/MS interbeds (60:40) SAMPLE 8 244.10 – 245.0	D SEAM SAMPLE 8 - 244.1 - 245.0
245.00	246.05	1.05		CO: black, C6 245.0 – 245.05 – Dull coal, mod dense 245.05 – 245.10 – MS/VT(?) interbed 245.10 – 245.3 – Dull Coal, C6(?) 245.3 – 245.32 – VT layer 245.32 – 245.75 – Dull mod dense coal 245.75 – 245.80 – VT band, brown 245.8 – 245.86 – Dull, C6 coal 245.86 – 245.88 – Bright C3 band 245.88 – 246.06 – Dull CO/CM (50:50) w/ interbeds of VT(?) Sharp basal contact	D SEAM SAMPLE 9 - 245.0 - 246.05
246.05	246.86	0.81		MS: Med – LI grey laminae, 246.18 – thin (<5 mm) coaly laminae Sharp basal contact	
246.86	256.50	9.64		SS: Med grained, well – mod sorted, light to med grey 247.70 – 247.75 – Thin band of fine sand w/ cross bedding 248.2 – 248.33 – Coaly wisps 250.0 – 254.7 – Massive SS, med grained with sparse CM grains 254.7 – 255 – Cm and coaly wisps, minor 255.3 – 255.4 – CM/Coaly wisps on bedding at 0 degrees Erosional Contact at base	
256.50	257.90	1.40		SS: F grained, grey sandstone, well sorted, erosional base	
257.90	259.50	1.60		SS: M grained, med grey, no fractures 258.9 – 258.95 – Subround mud pellets and coaly wisps (pellets < 1 cm diameter.)	
259.50	259.90	0.40		CGL: Mud pellet conglomerate, SS matrix with abundant 1-2 cm subround mud pellets	
259.90	263.20	3.30		SS: F – M grained, well sorted, med grey, massive w/ sparse coaly flecks - erosional Basal contact	

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 SPECIALISTS FROM
 BOARDROOM TO MINE FACE

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263.20	264.10	0.90		SS: Fine sand, dark grey w/ small scale cross bedding visible in thin beds. 263.2 – 263.35 – large < 10 cm diameter cleat of above medium grained SS	
264.10	264.20	0.10		MS/CM: (50:50) brown and black interbeds, laminae	
264.20	264.30	0.10		CM: dark black, dense, with thin laminae	
264.30	264.80	0.50		CM: dull and moderately dense 264.3 – 264.4 – Dull CO w/ CM interbeds 264.4 – 264.5 – VT thin band, brown 264.5 – 264.62 – Dull CO and CM, light w/ small cleats on fractured surfaces 264.62 – 264.64 – C3 band, large cleats 264.64 – 264.8 – Dull coal, calcite/kaolinite on cleat - sharp basal contact SAMPLE 10 - 264.3 – 264.8 Unnamed Discontinuous Seam (?)	
264.80	265.00	0.20		MS/CM: carbonaceous and dark black at base and grading up to a dark grey mudstone, calcite on fracture surface	
265.00	265.04	0.04		CO – Dull with a thin (<1mm) bright band	
265.04	265.40	0.36		VT: Lt brown, dense -irregular basal contact at 50 degrees with slicken surface	
265.40	273.00	7.60		SS: Med grained, grey, fining upwards sequence, no visible fractures, massive unit 265.4 – 265.5 – 3 fractures at 45, 70, and 80 degrees with slickensides 265.4 – 266.40 – Fine Sand, thinly bedded, bedding at 0 degrees 267.4 – 268 – Medium grained, mod to well sorted 268 – 270.4 – Med. grained, mod sorting, massive 271.3 – 271.6 – 3 thin bands (<2 cm thick) w/ CM/coaly debris Sharp basal contact	
273.00	273.40	0.40		SS: Fine grained, thin bedded, grey, well sorted, no visible fracturing Sharp basal contact	
273.40	281.40	8.00		SS: Med grained, grey lithic sandstone, bedding at 0 – 5 degrees 274.0 – 274.1 – CM and coaly debris Massive unit with no fracture 275.4 – 276 – Finer grained, med grey 276 – 281.4 – F-M grained, thinly bedded, bedding at 5 – 10 degrees, sparse thin CM grains	
281.40	282.10	0.70		SS: Med grained, w/ abundant mudstone, CM and coaly fragments, coal fragments at 2 – 3 cm diameter, subangular 281.95 – 281.97 – thin coal band w/ good cleating - bedding at 5 – 10 degrees	
282.10	283.50	1.40		SS – M-C grained, grey, lithic SS Gradational basal contact	
283.50	284.87	1.37		SS: M-C grained, dark grey and white subround grains, moderately thick bedding, thin bands (<1 cm) of CM TO, well to mod sorting - erosional Basal contact	
284.87	286.25	1.38		SS: Fine to Medium grained, thinly bedded w/ carbonaceous interbeds near top, fining upwards packages; greenish grey in colour	
286.25	286.60	0.35		CG: Fine grained matrix with abundant mudstone clasts and contorted mudstone beds at 30 degrees; poor sorting, 3 cm diameter MS clast at base, greenish grey	
286.60	287.80	1.20		SS: M-C grained, greenish grey w/ white subround grains and sparse mud pellets at base, mod to poor sorting, subround to subangular clasts; mud pellets at base (<1 cm diameter); bedding at 0 – 5 degrees	
287.80	290.10	2.30		SS – Fine grained, greenish grey, fining upward with beds at 0 degrees; carbonaceous laminae at top of package 288.0 – 290.1 – massive, Fine to Medium grained SS	
290.10	290.70	0.60		SS: Medium grained; greenish grey, abundant carbonaceous debris/grains- lenticular clasts, 290.5 – 290.55 – CM band; dark brown w/ mud pellets throughout but sparse (< 1 cm diameter)	
290.70	297.50	6.80		SS: Medium grained, greenish grey, lithic - minor sparse mud pellets - carbonaceous fragments/ grains visible on fractured surfaces 293.1 – 293.3 – mud pellets and carbonaceous grains abundant 294 – 297 – med grained; massive, less green tint; carbonaceous grains/fragments throughout - sharp basal contact	
297.50	298.87	1.37		COAL 297.5 – 297.8 – Dull CO, moderately dense with thin interbeds of CM laminae and 1 mm thick bright bands with fine cleat 297.8 – 298.05 – C6 – black with very thin bright coal C2 bands 298.05 – 298.10 – MS – light grey, thinly laminated 298.10 – 298.18 – Dull coal w/ MS interbeds 298.18 – 298.22 – MS, light grey 298.22 – 298.40 – C6 w/ thin C3 bands (<0.5 cm thick band); calcite on cleat planes, but not on all planes 298.40 – 298.45 – VT, thinly bedded, light brown 298.45 – 298.80 – Dull coal, CM laminae interbeds; fracturing along cleat surfaces, some calcite on cleat, increasing MS at 298.80 298.80 – 298.87 – CM w/ thin CO interbeds (cleated), mod dense, black with brown interbeds (Tuffaceous?)	F SEAM SAMPLE 11 297.8 - 298.88
298.87	299.04	0.17		MS: Lt grey laminae, Carbonaceous at top	
299.04	299.14	0.10		CO: C6 band of coal, non-dense	
299.14	299.15	0.01		VT: brown waxy tuffaceous band	
299.15	301.90	2.75		MS: Med grey w/ thin CM laminae (70:30), 299.7 – 301.1 – Fractures and slicken surfaces at 50 degrees 299.84 – 299.86 – thin VT 300.1 – 300.2 – CM w/ MS laminae 300.8 – 301.1 – Fractures with slicken sides - Gradational basal contact with Sandstone	
301.90	305.17	3.27		SS: w. SL interbeds; decreasing with depth 302.8 – 303.0 – CM laminae interbedded with Fine SS; soft rock, bedding at 0 degrees - sharp erosional contact	
305.17	309.00	3.83		SS: F to M grained, mod to well sorted, bedding at 5 degrees, carbonaceous grains and debris TO, light green tint to rock, carbonaceous debris visible on all fracture surfaces (no fractures or faults 305 – 312), -306 – 309 – Fining upwards package Grad contact	
309.00	320.40	11.40		SS: Med grained, grey (less green tint), no fractures, bedding @ 0 – 5 degrees; thin carbonaceous wisps and debris TO, 309 – 309.6 – Carbonaceous and large mud pellets interbeds in sand matrix (1-2 cm diameter, pellets) 310.2 – 310.3 – CM wisps and mud pellets in sand matrix 312 – 315 – massive and med. grey 317.4 – 318 – Finer grained, well sorted, bedding at 5 degrees 318 – 320.4 – M grained and massive, Sparse CM flecks, grad basal contact	

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Date Drilling Commenced: 31/05/2007
Date Drilling Completed: 11/08/2007
Drill Company: Spaulding Drilling
Drill Rig: GNK 850 rig
Core Size: HQ3
Drill Fluid: Water
Hole Diameter: HQ3
PCD Depth: 123.00 m
Total Core Depth: 369.10 m



FROM	TO	THICKNESS	CORE LOSS	GEOLOGICAL DESCRIPTION	COMMENTS (SEAM NAME)
320.40	321.30	0.90		SS: w/ mudstone clasts; med greenish grey w/ dark grey mud pellets (mud pellets with CM bands), clast large (> 5 cm); fining upwards sequence with coaly/carbonaceous laminae in sand matrix 320.4 – 320.9 – Ss w/ coaly debris and small mud pellets, bedding at 0 degrees 321.3 – mud pellets dark grey w/ CM bands and mud pellets; slickensides on fracture surface	
321.30	326.90	5.60		SS: Fine to Medium grained; mod sorting; grey, round to subround clasts 322.1 – 322.6 – Thinly bedded w/ distinct light tan/brown beds (< 1 cm thick bands) 322.6 – 326.9 – Massive grey, sharp basal contact	
326.90	328.30	1.40		MS: med grey with dark grey to black CM interbeds; leaf prints on fresh surfaces 327.1 – 327.4 – Badly broken w/ fracture surfaces at 50 and 70 degrees TCA, with slickensides and kaolin on fracture planes	
328.30	328.55	0.25		CO: Dull and dense with dark grey to black CM interbeds. Small cleats when broken but a hard coal; 2 thin (<1 cm) MS bands	Sample 12 328.30 - 328.55
328.55	328.70	0.15		CM/MS (50:50): grey MS grading up to dark black MS below the CO, laminated	
328.70	328.77	0.07		CO: dull with CM interbeds	
328.77	329.20	0.43		SS: grey, Very fine grained, thinly bedded with carbonaceous grains TO, gradational contact	
329.20	332.20	3.00		CM/SS (50:50): thinly laminated, dark grey and black bands, sandy bedding at 0 degrees	
332.20	333.40	1.20		SL: grey fine w/ interbeds of CM, grad contact Bedding at 0 degrees 333-333.4 – fracture at 50 – 70 degrees with slicken sides	
333.40	336.80	3.40		SS: F to M grained, mod to well sorted, bedding at 5 degrees, carbonaceous grains and debris TO, light green tint to rock, carbonaceous debris visible on all fracture surfaces (no fractures or faults 305 – 312), -306 – 309 – Fining upwards package Grad contact	
336.80	338.00	1.20		SL: w/ CM interbeds, dark grey with black 337.4 – 337.7 – fractured at 50 degrees with slicken surfaces on 3 surfaces - bedding at 0 – 5 degrees 337.7 – 338.0 – sandy w/ CM - grad contact	
338.00	339.65	1.65		MS: w/ CM interbeds, laminae with minor very fine sand - gradational contact	
339.65	341.00	1.35		CM/SS (50:50): Light grey sands w/ small scale cross bedding and carbonaceous interbeds; bedding at 0 degrees 341.0 – thin (< 0.5 cm) coal band Sharp contact	
341.00	342.50	1.50		MS: w/ sandy interbeds, thin to laminated w/ CM bands at base 341.1 Fracture at 50 degrees with slickensides	
342.50	343.53	1.03		CO: 342.5 – 342.77 – CO, C6? Non-dense 342.77 – 342.79 – VT band, dark brown 342.79 – 342.95 – C5/C6 with thin C3 band 342.95 – 342.96 – VT – creamy brown, waxy texture 342.96 – 343.31 – C6 – non-dense, fractured and cleated 343.31 – 343.45 – C6 w/ thin calcite veins filling subvertical fractures 343.45 – 343.47 – VT – dark brown irregular contact w/ visible calcite 343.47 – 343.53 – Carbonaceous and moderately dense, thinly bedded	SEAM G, UPPER SAMPLE 13 - 342.5 - 343.5
343.53	346.40	2.87		SL: VF grained and grey, w/ carbonaceous (black) grains TO – plant prints on fresh fractures	
346.40	346.75	0.35		CM: Black with SL interbeds; calcite on fracture plane at 345.55	
346.75	347.90	1.15		CO: Black non dense w/ large cleating (~C4 to C5 coal) 346.75 – 347.25 – C5 coal, cleated 347.25 – 347.27 – VT – thin brown luff band 347.27 – 347.40 – C4 coal with large cleats; calcite on many cleat planes 347.40 – 347.70 – C4 w/ CM interbeds; sparse calcite 347.70 – 347.72 – VT band 347.2 – 347.90 – C4 – cleated with calcite, sharp basal contact	SEAM G, LOWER SAMPLE 14 - 346.75 - 347.75
347.90	348.55	0.65		SL: grey w/ CM interbeds; sandy at base (fining upward package) Gradational basal contact	
348.55	350.03	1.48		MS: w/ silty interbeds; carbonaceous TO w/ laminae at 0 degrees; sharp irregular basal contact at 25 degrees; leaf prints on fresh fracture/bedding planes; 348.6 – Fracture at 60 degrees w/ slickensides	
350.03	350.10	0.07		CM: dark black w/ 5 mm tuffaceous band; badly broken w/ slicken surfaces; sharp contact	
350.10	352.00	1.90		SL: grey with carbonaceous laminae TO; 350.45 – 350.70 – irregular fracture surfaces with slicken surfaces 350.7 – 350.90 – sandy interbeds - muddy at top - gradational basal contact	
352.00	353.40	1.40		SS: grey, very fine to fine sand; well sorted w. carbonaceous bedding TO -fining upward package w/ SL at top - sharp erosional basal contact	
353.40	354.40	1.00		MS: dark grey, carbonaceous laminae TO; 353.8 – 354.2 – Badly broken w/ slicken surfaces on fractures at 70 degrees.	
354.40	356.98			SS: Fine grained lithic sand; well sorted; bedding at 0 – 5 degrees; small scale cross bedding TO; carbonaceous beds TO	
356.98	357.80	0.82		MS: dark grey, laminae 357.0 – 357.1 – 2 fractures at 50 degrees w/ calcite and slickensides; carbonaceous at base	
357.80	358.60	0.80		CM: black w/ minor sand (grey) TO 357.95 – Fracture @ 60 degrees w/ slickensides - gradational basal contact	
358.60	360.50	1.90		SS: grey w/ abundant dark black carbonaceous beds; - fine grained; bedding at 0 degrees TO 359.8 – 360 – x-bedding at 5 to 10 degrees w/ abundant CM/coaly debris - grad contact w/ coarser sands at base	
360.50	364.40	3.90		SS: Fine to Med grained; dark grey; carbonaceous TO ; bedding at 0 degrees - No fractures from 360.5 – 363.4 - 363.3 – 363.4 – coaly debris in 2 1 cm bands - Sharp basal contact	
364.40	364.90	0.50		CM: dark black; dense dull w/ abundant 1 mm thick grey MS bands TO; grad contact	
364.90	365.27	0.37		CM/SS (70:20): dark black w/ sandy (grey) beds TO; laminae	
365.27	365.95	0.68		CO: Boney/dull coal w/ CM throughout; calcite on subvertical 1 mm thick healed fractures (~3), no clear cleating but less dense than CM above SAMPLE 25 – 365.45 – 365.95 m	SEAM H SAMPLE 15 – 365.45 – 365.95 m
365.95	365.96	0.01		VT: dense creamy tan colour, waxy	

FINGAL55B - Lithology Summary

HOLE NAME: FINGAL55B
R.L. of Hole: 626.00 m
Easting: 591126.00
Northing: 5387069.00
Date Drilling Commenced: 31/05/2007
Date Drilling Completed: 11/06/2007
Drill Company: Spaulding Drilling
Drill Rig: GNK 850 rig
Core Size: HQ3
Drill Fluid: Water
Hole Diameter: HQ3
PCD Depth: 123.00 m
Total Core Depth: 369.10 m



FROM	TO	THICKNESS	CORE LOSS	GEOLOGICAL DESCRIPTION	COMMENTS (SEAM NAME)
365.96	366.02	0.06		CM: dark black and dense	
366.02	366.05	0.03		VT: creamy tan and waxy	
366.05	366.10	0.05		CM: dark black; dense	
366.10	366.30	0.20		CM/CO (?): very dull but less dense than CM above; bedded without any cleat planes; thin/minor dull band at 366.15; gradational contact	
366.30	367.30	1.00		MS: grey; very clayey and soft; thinly laminated with bedding at 0 degrees	
367.30	368.00	0.70		MS/SS (50:50): grey fine sand w/ silty MATRIX; med grey MS bands; bedding at 5 degrees w/ regular MS and SS interbeds TO 367.3 - 367.5 - 4 evenly spaced fractures at 30 degrees - gradational basal contact	
368.00	369.10	1.10		SS: Fine grained; grey to white w/ carbonaceous flecks on fresh fracture surfaces; minor carbonaceous laminae TO EOH	

FINGAL55B - COAL SEAM SUMMARY

HOLE NAME: FINGAL55B
 R.L. of Hole: 826.00 m
 Date Drilling Commenced: 31/05/2007
 Date Drilling Completed: 11/08/2007
 Drill Company: Spaulding Drilling
 Core Size: HQ3
 PCD Depth: 123.00 m
 Core Depth: 389.10 m

Seam	Depth From	Depth To	Seam Thickness	Net Coal Thickness		Description	Desorption Samples		
				Max	Min				
Coal A, Upper	166.50	166.95	0.45	0.45	0.14	Carbonaceous Mudstone with very thin bright bands of Coal with very fine cleat (70:30).	Sample 1	166.50	166.95
Coal A, Lower	170.64	170.93	0.29	0.29	0.15	Carbonaceous Mudstone and Dull Coal thinly interbedded. Abundant kaolinite and calcite as well as red mineralisation.	Sample 2	170.64	170.93
Coal B, Upper	187.10	188.10	1.00	1.00	0.50	Very dull Coal, moderately dense with mudstone and carbonaceous mudstone interbeds interbeds	Sample 5	187.10	188.10
Coal B, Lower	188.90	191.40	2.50	2.50	1.70	Coal with carbonaceous mudstone interbeds near top of section and thin brown tuff bands (previously described as expanding clays) and thin mudstone bands. Coal is generally dull with moderately bright (C4-C5) bands with well developed cleat. Some calcite mineralisation at 190.60 - 190.70	Sample 3	188.90	189.40
							Sample 4	189.70	190.70
Unnamed Coal	210.00	210.40	0.40	0.40	0.20	Unnamed boney dull coal. Dark black and and low density with small cleats visible. Badly broken with slickenside surfaces at multiple angles. Carbonaceous at base.	Sample 6	209.90	210.30
Coal C	NA	NA	0.00	NA	NA	Not present in section.	NA		
Coal D, Upper	238.95	239.75	0.80	0.65	0.60	Dull Coal with thin interbeds of volcanic tuff. Moderately dense throughout with minor thin and cleated bright bands.	Sample 7	238.98	239.48
Coal D, Lower	243.94	246.05	2.11	2.02	1.71	Dull Coal of low density with several thin (<5 cm) bands of mudstone and tuff. Poor cleat development and subvertical healed fractures with calcite infill.	Sample 8	244.10	245.00
							Sample 9	245.00	246.05
Unnamed seam	264.30	264.80	0.50	0.40	0.24	Dull and moderately dense coal with minor cleat development and thin (0.02 m) C3 band. Calcite and kaolinite on cleating from 264.64 264.80.	Sample 10	264.30	264.80
Coal F, Upper	297.50	298.87	1.37	1.23	1.16	Dull Coal with sparse and thin bright bands. Calcite on cleated surfaces. Thin interbeds of Carbonaceous mudstone and volcanic tuff throughout.	Sample 11	297.80	298.88
Coal F, Lower	328.30	328.77	0.47	0.32	0.22	Dull and dense coal with dark grey to black carbonaceous interbeds. Small cleats when broken but a hard, heavy coal	Sample 12	328.30	328.55
Coal G, Upper	342.50	343.53	1.03	0.98	0.92	Coal with thin interbeds of volcanic tuff (<0.06 m). Calcite on fractures and cleats. Carbonaceous at base.	Sample 13	342.50	343.50
Coal G, Lower	346.75	347.90	1.15	1.11	0.96	Low density coal with well developed cleating and C4 to C5 bands. Calcite on cleat planes. Thin interbeds of tuff (<0.04 m) and carbonaceous mudstone.	Sample 14	346.75	347.75
Coal H	365.27	365.95	0.68	0.68	0.34	Dull coal with carbonaceous mudstone throughout. Calcite on subvertical 1 mm thick healed fractures. No clear cleating but not as dense as the carbonaceous mudstone above.	Sample 15	365.45	365.95

12.03 8.84

avg of max/min: 10.44

Abbreviation Key

CO	Coal
CGL	Conglomerate
CM	Carbonaceous Mudstone
MS	Mudstone
SL	Siltstone
SS	Sandstone
VT	Volcanic Tuff