

CARMACKS NORTH - 1977 ROTARY HOLES

<u>Hole No.</u>	<u>Drilled Depth</u>	<u>Logged Depth</u>
C-77- 1	242'	-
C-77- 2	300	300'
C-77- 3	84.5	56
C-77- 4	185	-
C-77- 5	85	-
C-77- 6	243	-
C-77- 7	243	-
C-77- 8	163	-
C-77- 9	103	-
C-77-10	83	80
C-77-11	103	95
C-77-12	183	-
C-77-13	184	183
C-77-14	164	-
C-77-15	317	147
C-77-16	272	139
C-77-17	243	201
C-77-18	364	362
C-77-19	284	276
C-77-20	384	368
C-77-21	628	548
C-77-22	304	298
C-77-23	304	296
C-77-24	304	298
C-77-25	304	300
C-77-26	304	298
C-77-27	344	335
C-77-28	364	369 (!)
C-77-29	303	297
C-77-30	303	289
C-77-31	303	298
C-77-32	303	301
C-77-33	303	299
C-77-34	303	299
C-77-35	303	260
C-77-36	303	295
C-77-37	303	298
C-77-38	303	298
C-77-39	382	376
C-77-40	303	301
C-77-41	303	300
C-77-42	303	301

CARMACKS NORTH - CUTTINGS LOGS

(Geologist's Log except \*-Driller's Log)

<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-1	0 - 242	Overburden.
C-77-2	0 - 127	Overburden.
	127 - 285	Conglomerate and sandstone.
	285 - 287	Black coaly mudstone.
	287 - 300	Brown mudstone.
C-77-3	0 - 28	Overburden.
	28 - 51.5	Medium grey mudstone and siltstone.
	51.5 - 55.5	COAL (4').
	55.5 - 84.5	Light grey sandstone with brown mudstone interbeds.
C-77-4	0 - 23	Overburden.
	23 - 72	Brown and grey mudstones and siltstones with a few carbonaceous mudstone partings.
	72 - 97	COAL (25').
	97 - 115	Light grey sandstone.
	115 - 150	COAL (35').
	150 - 185	Light grey sandstone with interbeds of brown siltstone and mudstone.
C-77-5	0 - 24.5	Overburden.
	24.5 - 34	Medium brown and medium grey mudstone and siltstone.
	34 - 56	Dirty COAL with mudstone partings (22').
	56 - 65	Brown mudstone.
	65 - 85	Grey sandstone.
C-77-6	0 - 26	Overburden.
	26 - 85	Medium brown mudstone and grey siltstone and mudstone. 1 foot coal at about 30'.
	85 - 87	Coaly mudstone.
	87 - 149	Grey and brown siltstones and mudstones.
	149 - 229	COAL (80').
	229 - 235	Brown mudstone.
	235 - 243	Dark brownish-grey sandstone.
C-77-7	0 - 25	Overburden.
	25 - 145	Grey and brown mudstones and siltstones.
	145 - 183	COAL (38').
	183 - 243	Grey sandstone (6" coal at 219').

CARMACKS NORTH  
CUTTINGS LOGS

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-8	0 - 25 25 - 91 91 - 119 119 - 121 121 - 157 157 - 163	Overburden. Brown and grey mudstones and siltstones. COAL (28'). Brown mudstone. Brownish grey sandstone. Conglomerate.
C-77-9	0 - 5 5 - 36 36 - 53 53 - 103	Overburden. Grey and brown mudstones and siltstones. COAL (17'). Grey sandstone.
C-77-10	0 - 26 26 - 48 48 - 52 52 - 83	Overburden. Grey and brown siltstones and mudstones. COAL (4'). Grey sandstone.
C-77-11	0 - 12 12 - 49 49 - 54 54 - 65 65 - 84 84 - 103	Overburden. Grey and brown siltstones and mudstones. COAL (5'). Grey sandstone. COAL (19'). Grey sandstone.
C-77-12	0 - 24 24 - 183	Overburden. Brown mudstone and grey siltstone.
C-77-13	0 - 24 24 - 30 30 - 46 46 - 57 57 - 88 88 - 102 102 - 105 105 - 109 109 - 117 117 - 158 158 - 167 167 - 184	Overburden. Siltstone. COAL (16'). Brown mudstone. Grey sandstone. Brown mudstones and siltstones. Dark grey carbonaceous mudstone. COAL (4'). Dark grey sandstone. COAL with mudstone partings (41'). Brown mudstone. Grey sandstone.
C-77-14	0 - 34 34 - 40 40 - 164	Overburden. COAL (6'). Grey sandstone with brown mudstone and siltstone partings.

CARMACKS NORTH  
CUTTINGS LOG

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-15	0 - 98	Overburden.
	98 - 252	Conglomerate, with sandstone and mudstone interbands.
	252 - 275	Interbanded mudstones, carbonaceous mudstones and thin coal bands.
	275 - 293	Sandstone, with conglomerate and mudstone interbeds.
	293 - 303	Dirty COAL (10').
	303 - 317	Grey sandstone.
C-77-16	0 - 8	Overburden.
	8 - 80	Brown mudstone.
	80 - 83	Dirty COAL (3').
	83 - 127	Brown and dark grey mudstones and siltstones.
	127 - 133	COAL (6').
	133 - 139	Black carbonaceous mudstone.
	139 - 209	Grey sandstone, passing down into grey siltstone and mudstone.
	209 - 224	COAL (15').
	224 - 226	Black carbonaceous mudstone.
	226 - 246	COAL (20').
	246 - 272	Rock.
	C-77-17	0 - 8
8 - 48		Conglomerate.
48 - 70		Brown sandstone, siltstone and mudstone.
70 - 74		COAL (4').
74 - 77		Dark brown and dark grey mudstone.
77 - 81		COAL (4').
81 - 150		Light grey siltstone.
150 - 182		Dark brown and dark grey siltstone and mudstone.
182 - 186		COAL (4').
186 - 201		Mudstone and siltstone.
201 - 202		Coaly mudstone.
202 - 209		Mudstone and siltstone.
209 - 211		Coaly mudstone.
211 - 243		Mudstone and siltstone.
C-77-18	0 - 9	Overburden.
	9 - 201	Conglomerate with sandstone interbeds.
	201 - 204	Black carbonaceous mudstone.
	204 - 219	Dark brown and dark grey mudstones.
	219 - 223	Black coaly mudstone.
	223 - 237	Dark brown and dark grey mudstones.
	237 - 245	COAL (8').
	245 - 263	Black mudstone.
	263 - 271	COAL (8').

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CARMACKS NORTH  
CUTTINGS LOG

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-18 - (Cont'd)		
	271 - 281	Dark grey mudstone.
	281 - 283	Black carbonaceous mudstone.
	283 - 301	Dark grey mudstone.
	301 - 317	Medium grey siltstone.
	317 - 341	Light grey sandstone.
	341 - 364	Conglomerate.
C-77-19		
	0 - 7.5	Overburden.
	7.5 - 53	Pebble conglomerate.
	53 - 58	COAL (5').
	58 - 64	Interbedded coaly mudstone and light grey mudstone.
	64 - 84	Dark brown mudstone and grey mudstone and siltstone.
	84 - 85	COAL (1').
	85 - 103	Light grey siltstone.
	103 - 105	COAL (2').
	105 - 107	Dark grey mudstones.
	107 - 123.5	COAL (16.5').
	123.5 - 130	Dark brown and dark grey mudstone.
	130 - 236	Light grey siltstone with dark grey mudstone and coaly partings.
	236 - 238	COAL (2').
	238 - 244	Interbedded coal, black coaly mudstone and dark grey mudstone.
	244 - 265	Light grey sandstone and siltstone.
	265 - 280	Dark grey mudstone and black carbonaceous mudstone.
	280 - 284	Conglomerate.
C-77-20		
	0 - 7	Overburden.
	7 - 140	Conglomerate with sandstone interbeds.
	140 - 141	COAL (1').
	141 - 205	Dark brown and dark grey mudstones.
	205 - 234	Light grey sandstone and siltstone.
	234 - 237	Black carbonaceous mudstone.
	237 - 254	COAL (17').
	254 - 260	Dark grey and dark brown mudstone and carbonaceous mudstone.
	260 - 264	COAL (4').
	264 - 301	Dark brown and dark grey mudstone, passing down into medium grey interbedded mudstones, siltstones and sandstones.
	301 - 304	COAL (3').
	304 - 308	Black coaly mudstone.
	308 - 325	COAL (17').

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CARMACKS NORTH  
CUTTINGS LOGS

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-20 - (Cont'd)		
	325 - 370	Medium grey mudstones, siltstones and sandstones.
	370 - 384	Conglomerate.
C-77-21		
	0 - 4	Overburden.
	4 - 334	Interbedded pebble conglomerate and coarse sandstone. Soft, fractured zones at approx. 160' and approx. 230' where air and cuttings lost.
	334 - 336	COAL (2').
	336 - 352	Black carbonaceous mudstone.
	352 - 356	COAL (4').
	356 - 362	Black carbonaceous mudstone.
	362 - 376	COAL (14').
	376 - 385	Black carbonaceous mudstone.
	385 - 403	COAL (18').
	403 - 628	Sandstone and conglomerate.
C-77-22		
	0 - 9	Overburden (bottom uncertain).
	9 - 25	Brown mudstone and coaly mudstone (? overburden).
	25 - 55	COAL - top part apparently somewhat weathered (30').
	55 - 64	Dark brown mudstone with coaly partings.
	64 - 73	COAL (9').
	73 - 85	Dark grey and dark brown mudstones.
	85 - 93	Light grey siltstone and sandstone.
	93 - 95	COAL (2').
	95 - 105	Black coaly mudstone.
	105 - 109	COAL (4').
	109 - 125	Dark grey mudstone.
	125 - 187	Light grey siltstone and sandstone.
	187 - 188	Black coaly mudstone.
	188 - 304	Light grey siltstone with interbeds of dark grey mudstone.
C-77-23		
	0 - 4	Overburden.
	4 - 40	Dark grey and dark brown mudstones and siltstones.
	40 - 58	COAL (18').
	58 - 66	Dark grey mudstone.
	66 - 75	COAL (9').
	75 - 87	Light grey siltstone.
	87 - 89	COAL (2').
	89 - 100	Siltstone and mudstone.
	100 - 102	COAL (2').
	102 - 304	Light grey sandstone and siltstone with dark grey mudstone interbeds.

CARMACKS NORTH  
CUTTINGS LOGS

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-24	0 - 9	Overburden.
	9 - 190	Light grey sandstone, siltstone and mudstone.
	190 - 230	Dark grey to black mudstone.
	230 - 304	Light grey sandstone, siltstone and mudstone, passing down into pebble conglomerate.
C-77-25	0 - 9	Overburden.
	9 - 220(?)	Light grey sandstone and siltstone.
	220 - 304	Pebble conglomerate.
C-77-26*	0 - 12	Overburden.
	12 - 14	Rock.
	14 - 22	COAL (8').
	22 - 52	Rock.
	52 - 58	COAL (6').
	58 - 68	Rock.
	68 - 70	COAL (2').
	70 - 125	Rock.
	125 - 127	COAL (2').
	127 - 133	Rock.
	133 - 134	COAL (1').
	134 - 142	Rock.
	142 - 144	COAL (2').
	144 - 232	Rock.
	232 - 233	COAL (1').
	233 - 246	Rock.
246 - 252	COAL (6').	
252 - 304	Rock.	
C-77-27	0 - 18	Overburden.
	18 - 230	Light grey sandstone and pebble conglomerate.
	230 - 240	Black, carbonaceous mudstone.
	240 - 276	Dark grey and dark brown mudstones and siltstones.
	276 - 290	COAL (14').
	290 - 344	Light grey siltstone and sandstone.
C-77-28	0 - 5	Overburden.
	5 - 70	Dark grey and dark brown mudstones.
	70 - 73	COAL (3').
	73 - 75	Dark grey mudstone.
	75 - 77	COAL (2').
	77 - 304	Dark grey and dark brown mudstones and siltstones.
	304 - 320	COAL (16').
	320 - 364	Medium grey mudstone and siltstone.

CARMACKS NORTH  
CUTTINGS LOGS

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-29	0 - 7	Overburden.
	7 - 183	Dark brown and dark grey mudstones and siltstones.
	183 - 191	COAL (8').
	191 - 303	Light grey sandstone.
C-77-30*	0 - 4	Overburden.
	4 - 303	Rock.
C-77-31	0 - 6	Overburden.
	6 - 259	Light grey sandstone and siltstone.
	259 - 303	Conglomerate.
C-77-32*	0 - 5	Overburden.
	5 - 303	Rock. 2" coal at approx. 192'.
C-77-33*	0 - 19	Overburden.
	19 - 124	Rock.
	124 - 128	COAL (4').
	128 - 139	Rock.
	139 - 141	COAL (2').
	141 - 143.5	Rock.
	143.5 - 144	COAL (1/2').
	144 - 148	Rock.
	148 - 149	COAL (1').
	149 - 243	Rock.
	243 - 245	COAL (2').
	245 - 303	Rock.
	C-77-34*	0 - 7
7 - 21		Rock.
21 - 31		COAL (10').
31 - 33		Rock.
33 - 51		COAL (18').
51 - 57		Rock.
57 - 61		COAL (4').
61 - 65		Rock.
65 - 66		COAL (1').
66 - 71		Rock.
71 - 77		COAL (6').
77 - 113		Rock.
113 - 114		COAL (1').
114 - 139		Rock.
139 - 141		COAL (2').
141 - 153		Rock.
153 - 154		COAL (1').
154 - 168	Rock.	

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CARMACKS NORTH  
CUTTINGS LOGS

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-34 - (Cont'd)		
	168 - 179	COAL (11').
	179 - 184	Rock.
	184 - 185	COAL (1').
	185 - 303	Rock.
C-77-35*	0 - 3	Overburden.
	3 - 4	Rock.
	4 - 7	COAL (3').
	7 - 22	Rock.
	22 - 23	COAL (1').
	23 - 46	Rock.
	46 - 53	COAL (7').
	53 - 203	Rock.
	203 - 213	COAL (10').
	213 - 236	Rock.
	236 - 237	COAL (1').
	237 - 303	Rock.
C-77-36*	0 - 9	Overburden.
	9 - 25	Rock.
	25 - 27	COAL (2').
	27 - 34	Rock.
	34 - 38	COAL (4').
	38 - 303	Rock.
C-77-37*	0 - 8	Overburden.
	8 - 303	Rock.
C-77-38*	0 - 9	Overburden.
	9 - 189	Rock.
	189 - 196	COAL (7').
	196 - 303	Rock.
C-77-39*	0 - 5	Overburden.
	5 - 6	Rock.
	6 - 7	COAL (1').
	7 - 175	Rock.
	175 - 176	COAL (1').
	176 - 178	Rock.
	178 - 183	COAL (5').
	183 - 188	Rock.
	188 - 192	Coal (4').
	192 - 213	Rock.
	213 - 215	COAL (2').
	215 - 221	Rock.

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CARMACKS NORTH  
CUTTINGS LOGS

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<u>Hole</u>	<u>Footage</u>	<u>Lithology</u>
C-77-39 - (Cont'd)		
	221 - 222	COAL (1').
	222 - 256	Rock.
	256 - 260	COAL (4').
	260 - 266	Rock.
	266 - 286	COAL (20').
	286 - 292	Rock.
	292 - 311	COAL (19').
	311 - 324	Rock.
	324 - 325	COAL (1').
	325 - 382	Rock.
C-77-40*		
	0 - 9	Overburden.
	9 - 116	Rock.
	116 - 126	COAL (10').
	126 - 303	Rock.
C-77-41*		
	0 - 12	Overburden.
	12 - 14	Rock.
	14 - 16	COAL (2').
	16 - 22	Rock.
	22 - 36	COAL (14').
	36 - 115	Rock.
	115 - 116	COAL (1').
	116 - 134	Rock.
	134 - 136	COAL (2').
	136 - 303	Rock.
C-77-42*		
	0 - 7	Overburden.
	7 - 22	Rock.
	22 - 26	COAL (4').
	26 - 27	Rock.
	27 - 31	COAL (4').
	31 - 33	Rock.
	33 - 34	COAL (1').
	34 - 39	Rock.
	39 - 44	COAL (5').
	44 - 49	Rock.
	49 - 63	COAL (14').
	63 - 67	Rock.
	67 - 69	COAL (2').
	69 - 226	Rock.
	226 - 235	COAL (9').
	235 - 303	Rock.