

BLITZEM

COAL LIMITED

*Need to be
Coded*

732

COREHOLE LOG

September 9th, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-01

PAGE 1 OF 3

CORE No.	CORE FOOTAGES (metres)					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED		RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
1	2.69	5.38	2.69	2.69	2.69	SILTSTONE: Medium grey; uniform; massive; thick-bedded; slightly effervescent in some sections; numerous small white calcareous shells throughout; one lighter coloured section .18m. thick showing good effervescence; this section more well-cemented;
2	5.38	8.00	2.62	2.62	2.62	SILTSTONE: As above; shells less common; thin coal lenses; slight effervescence throughout except one section of coarser grained material displaying good effervescence; one softer more easily broken section at base
3	8.00	11.00	3.00	3.00	3.00	SILTSTONE: As above; slight effervescence; some calcareous shells
4	11.00	14.00	3.00	3.00	3.00	SILTSTONE: As above; with some thin lenses of brownish grey siltstone that show moderate effervescence; some softer clayey laminae near base
5	14.00	17.00	3.00	3.00	3.00	SILTSTONE: As above; slight effervescence to moderate effervescence in some sections.
Sample No. 1	6	17.00	17.60	.60	.26	SILTSTONE: As above; no effervescence
Sample No. 2					.13	SILTSTONE: Medium grey; variable composition; coal lenses and laminae throughout; abundant sheets and bands of finely disseminated pyrite material; no effervescence
X	TOTALS		X			÷ x 100 = % REC. SEAM + x 100 = % TOTAL REC. SEAM(S)

COREHOLE LOG

HOLE NUMBER QU-83-01
PAGE 2 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRIF
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
×	×	×		×			
				.13		COAL: No. 1 Rider Seam - Bright, blacky sections with some dull, high ash zone; abundant pyrite visible as sheet filling on cleat surfaces.	
				.06		LOST CORE	
Sample No. 3	6	17.60	20.00	2.40	.05	COAL: Dull; hard; wavy bands of disseminated pyrite throughout	
No. 1 Rider Seam					.12	PYRITE & SANDSTONE: Abundant pyrite material disseminated throughout a greyish brown medium grained sandy matrix; abundant calcitic cement; extremely hard and abrasive on core bit;	
					.12	COAL: Bright and blocky but with soft, broken sections; visible pyrite on cleats although not as abundant as previous coal section;	
					.04	COAL & MUDSTONE MIXED: carbonaceous and coalv mudstone layer; dark brown to black; fairly soft	
Sample No 4					.08	MUDSTONE: Medium brownish grey; coaly streaks throughout; no effervescence; soft but compacted	
No. 1 Seam Parting					.12	MUDSTONE: Dark grey to black; carbonaceous with abundant coaly material; softer;	
					.14	MUDSTONE: Medium brownish grey; coaly lenses throughout; no effervescence	
					.02	COAL: Dirty; dull & bright banded with abundant mudstone material	
				1.66		COAL: No. 1 Seam; hard; massive; bright and blocky; some sections contain wisps of durain and bone; also some minor bands showing amber blebs.	
Sample No 5							
No. 1 seam							
×	TOTALS			×		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	

Hole Number: QU-83-01c Pit Number: Pit 2N

Location: 103,046.5 N - 99,337.1 E Elevation: 327.9 m.

Preliminary Mining Area Page 1 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
<p>unconsolidated glacial overburden; sandy texture w/ cobbles and boulders</p> <p>SILTSTONE: Medium grey; massive; uniform; thick-bedded; small calcareous shells (brachiopods) throughout; slight effervescence in some sections; thin coarser grained sections showing moderate to strong effervescence;</p>			2	o o - o - o o o o	glacial till (2.69 m.)
		3	"	"	
		4	"	"	"
		5	"	"	"
		6	"	"	"
		7	"	"	"
		8	"	"	"
		9	"	"	"

Hole Number: QU-83-01c Pit Number: PIT 2N

Location: _____ Elevation: _____

Page 3 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20				RE	
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)		
<p>SILTSTONE: Same</p> <p>SILTSTONE: Medium grey; coaly lenses; abundant pyrite. COAL: No. 1 Rider; some dull zones; abundant pyrite. .08 lost core; wavy lenses of finely disseminated pyrite. MUDSTONE: Abundant pyrite material in a hard matrix. COAL: Bright and blocky with some visible pyrite. COAL & MUDSTONE mixed. MUDSTONE: Coaly and carbonaceous material throughout</p>			16	" "			
			17	" "			
	SAMPLE #1	.26 m		" "	.26 m		
	SAMPLE #2	.13 m		" "	.13 m		
	SAMPLE #3	.46 m		" "	.08 m .05 m		
	SAMPLE #4	.34 m		18	" "	.04 m .34 m .02 m	
	<p>COAL: No. 1 Seam; hard; massive; clean, bright and blocky; thin bony wisps in some sections;</p>	SAMPLE #5	3.38 m	19	" "	2.49 m	
				20	" "		
				21	" "	.05 m .79 m	
	<p>LOST CORE</p> <p>COAL: Same As Above</p> <p>COAL: Soft and crushed; dirty; mudstone mixed in. MUDSTONE: Dark to medium (brown); carbonaceous. MUDSTONE: Light to medium grey; some high angle slickensided fractures.</p> <p>LOST CORE: .08 m.</p> <p>MUDSTONE: Medium grey; uniform</p>	SAMPLE #6	.26 m	22	" "	.10 m .08 m .55 m	
			23	" "	2.64 m		

COREHOLE LOG

QU-83-02

September 10, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-C

PAGE 1 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
1	5.5	8.0	2.50	2.44		SILTSTONE: Medium to dark grey; uniform; occasional calcareous shells near top; some sections slightly effervescent but in general no effervescence; some thin lighter coloured lenses which are hard and show moderate effervescence.
2	8.0	11.0	3.0	1.91		SILTSTONE: As above; softer and more fissile at base; some sections showing minor cemented fractures with cement showing moderate effervescence.
				.43		COAL; No. 1 Rider Seam; solid and fairly hard; generally bright and blocky; some lensoid sandy inclusions with abundant disseminated pyrite and pyrite as cleat coatings within the coal; minor boney sections near top.
				.12		MUDSTONE: Medium greyish brown; soft but solid; minor thin coaly bands and lenses.
				.07		MUDSTONE: Medium to dark brown; carbonaceous with abundant coal material throughout.
				.19		MUDSTONE: Medium brownish grey; soft; becoming very soft at base, wet, plastic, crumbly; possibility of lost core in this zone.
				.06	2.78	COAL: Fairly hard, bright and blocky; sharp contact with soft mudstone overlying it; Top of No. 1 Seam
	TOTALS			X		÷ x 100 = % REC. SEAM
				X		÷ x 100 = % TOTAL REC. SEAM(S)

Sample No. 1
No. 1
No. 1 Rider

Sample No. 2
parting
No. 1 seam

No. 3
1 Seam



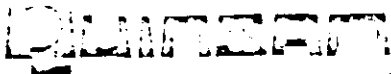
COAL LIMITED

COREHOLE LOG

HOLE NUMBER: QU-83-02

PAGE 2 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRIP
	DRILLED		RECOVERED				
	FROM	TO	TOTAL	SECTION	TOTAL		
X	X	X		X			
Sample No. 3. No. 1 Seam	3	10.92	13.92	3.0m	1.31m	COAL: As above; clean, hard, bright and blocky; massive	
					.04	COAL: Dull; dirty and boney; some thin, bright sections	
					.01	CLAY: Medium grey; extremely soft; wet and plastic	
					1.00	COAL: Clean; massive; bright and blocky; fairly hard.	
					.04	COAL: Dull; platy; becoming dirty near base; 30% mudstone	
					.24	COAL: Clean; bright and blocky; massive; hard.	
					.03	COAL: Soft; dull; dirty; carbonaceous mudstone material mixed in.	
Sample No. 4					.01	MUDSTONE: Soft; medium brown; plastic, carbonaceous.	
					.03	COAL: Same as above; dirty; dull	
Sample No. 5					.09	MUDSTONE: Medium greyish brown; soft; crushed; some carbonaceous material <i>1/2" size</i>	
					.05	MUDSTONE: Same as above only more fissile and slightly harder	
Sample No. 6					.17	COAL: Massive; fairly hard; bright blocky sections but somewhat dirty	
	4	13.92	16.92	3.00	.27m	COAL: As above; but fairly clean, bright and blocky becoming dirtier and dull near base.	
Sample No. 7					.01	MUDSTONE: Medium greyish brown; hard coaly streaks	
					.02	COAL: Dull and bright sections; fairly hard and clean	
X	TOTALS			X		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	



COAL LIMITED

COREHOLE LOG

HOLE NUMBER: QU-83-01
PAGE 3 OF 3

Sample No.
7

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
				.10		MUDSTONE: Dark brown; carbonaceous, fairly hard; coaly streaks throughout
				.10		MUDSTONE: Dark brown grading downward to medium brown; carbonaceous and coaly near top; decreasing towards base;
				2.45	2.95	SILTSTONE: Medium grey grading downward to greenish grey; hard; competent, coarsening downward some light brown coloured harder sections that show moderate effervescence, however in general no effervescence.
X	TOTALS			X		÷ x 100 = % REC. SEAM ÷ x 100 = % TOTAL REC. SEAM(S)

Hole Number: D11-83-02c Pit Number: Pit 2N
 Location: 103, 044 0 N - 99, 277.9 E Elevation: 327.7 m.
Preliminary Mining Area Page 1 of 2

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
GLACIAL TILL: unconsolidated overburden to 5.5 m.			5	0-5.5	5.5 m.
SILTSTONE: Medium to dark grey; some thin, lighter coloured hard lenses which show occasional calcareous shells near top;			6	" "	4.25
			7	" "	
			8	" "	
			9	" "	
COAL: No. 1 Rider Seam; solid; hard; generally bright & blocky but some lensoid sandy inclusions w/ abundant disseminated pyrite;	SAMPLE No. 1	.43 m.	10	[Pattern]	.43 m.
MUDSTONE: Medium to dark brown; carbonaceous					.19 m.
LOST CORE: .22 m.	SAMPLE No. 2	.38 m.		[Pattern]	.22 m.
MUDSTONE: Medium brownish grey; soft; wet; plastic; becoming very soft at base					.19 m.
COAL: No. 1 Seam; sharp upper contact			11	[Pattern]	.05 m.
COAL: Clean; bright; blocky; massive	SAMPLE No. 3			[Pattern]	1.31 m.
PARTING: .04 m dull boggy coal, .01 m clay, soft, wet			12	[Pattern]	.05 m.

Hole Number: QU-83-02c

Pit Number: Pit 2N

Location: _____

Elevation: _____

Page 2 of 2

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN				RE
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
<p>COAL: Clean; massive; bright & blocky</p> <p>COAL: Dull; platy fracture; dirty at base; ~30% mudstone</p> <p>COAL: Clean; bright; hard; massive</p> <p>COAL: Dull; dirty; w/.01m. mudstone; soft, plastic</p> <p>MUDSTONE: Medium open brown; soft, crushed;</p> <p>MUDSTONE: Slightly harder; more fissile</p> <p>COAL: Bright & blocky; becoming dirt. near base</p> <p>MUDSTONE: Dark brown to medium brown; carbonaceous & coaly throughout</p> <p>MUDSTONE: Dark brown to medium brown; carbonaceous and coaly near top; decreasing towards base</p> <p>SILTSTONE: Medium gray grading downward to greenish gray; hard; competent; coarsening downward;</p>	SAMPLE #3	2.70 m.	12		1.0 m.	
			13		.04 m.	
					.24 m.	
	SAMPLE #4	.07 m.			.07 m.	
	SAMPLE #5	.14 m.			.09 m.	
			14		.05 m.	
	SAMPLE #6	.11 m.			.14 m.	
	SAMPLE #7	.13 m.			.03 m.	
					.10 m.	
					.10 m.	
			15		2.45 m.	
			16			
		17				
		18				
		19				

COREHOLE LOG

QU-83-03

HOLE NUMBER: QU-83-C

PAGE 1 OF 3

September 11, 1983

STEVE GARDNER

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
1	3.05	6.00	2.95	2.95		SILTSTONE: Medium grey; massive; uniform; occasional small calcareous shells; some high angle fracturing; lighter coloured coarser grained section near base shows moderate effervescence; generally no effervescence throughout remainder
2	6.00	9.00	3.00	2.97		SILTSTONE: Same as above; occasional thin coal laminae and calcareous shells; lighter coloured section at base shows moderate effervescence
3	9.00	12.00	3.00	2.98		SILTSTONE: Same as above
4	12.00	15.00	3.00	3.00		SILTSTONE: Same as above
5	15.00	18.00	3.00	2.97		SILTSTONE: Same as above; numerous lighter coloured bands up to 2 cm. thick that are silicified and well cemented - harder than surrounding rock and showing moderate effervescence; one section 4 cm. thick at base showing abundant calcareous shell material.
Sample No. 1	6	18.00	21.00	3.00	.42	SILTSTONE: Same as above
					.12	SILTSTONE: Medium greyish brown; muddy; fractured; numerous coaly laminae throughout.
Sample No. 2					.05	MUDSTONE: Light grey; soft, wet; crushed; plastic
					.06	MUDSTONE & COAL MIXED: Alternating bands of dark brownish grey mudstone and bright coal up to .5 cm. thick.
Sample No. 3						
X	TOTALS.			X		÷ x 100 = % REC. SEAM
						÷ x 100 = % TOTAL REC. SEAM(S)

COREHOLE LOG

HOLE NUMBER: QU-83-01
PAGE 2 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRIP
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
	X	X		X			
Sample No. 4				.27		COAL: Hard; bright and blocky but contains some boney streaks; pyrite visible on cleats and as thin lenses : No. 1 Rider Seam	
				.17		COAL: Same as above only massive amounts of pyrite material present as variable lenses up to .5 cm. in thickness	
				.07		MUDSTONE: Medium grey; fairly hard; some thin coal v wisps.	
Sample No. 5				.01		COAL: Bright, blocky, coal lense sandwiched in between mudstone material	
				.01		MUDSTONE: Same as above	
Sample No. 6				.10		MUDSTONE: Medium brown, fairly hard and competent; some coal bands up to 1 cm. thick.	
				.25		MUDSTONE: Light brownish grey; some thin coaly bands; slightly fissile	
				.03		MUDSTONE: Dark grey to black; carbonaceous and coaly;	
				1.47		COAL: No. 1. seam; bright; blocky; hard; massive; calcite on cleats; no visible pyrite; very thin dirt band .49m. from top (L .5 cm.)	
Sample No. 6 No. 1 Seam	7	21.0	24.0	3.0	.05	COAL: Dull; brown streak; boney; hard; platy fracture	
					1.50	COAL: Clean; bright and blocky; hard; massive; uniform; no visible pyrite;	
					.11	COAL: Dull; dirty; some bright sections but abundant bone and dirt inclusions; hard;	
					.27	COAL: Clean; bright and blocky; uniform; becoming softer at base.	
					.27	LOST CORE ? Crushed coal section	
	TOTALS					÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	

Hole Number: QU-83-03c Pit Number: PIT 2N

Location: 103,163.8 N - 99,411.8 E Elevation: 322.7 m.
Preliminary Mining Area Page 1 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
Glacial Till: unconsolidated overburden (3.05 m) SILTSTONE: Medium grey; massive; uniform; occasionally small brachiopod shells; some high angle fracturing; some very thin coaly laminac and plant imprints;			3	0.6' 9.6	3.05
				" "	
				" "	
			4	" "	
				" "	
			5	" "	6.95 m.
				" "	
			6	" "	
				" "	
			7	" "	
			" "		
		8	" "		
			" "		
		9	" "		
			" "		
		10	" "		

Hole Number: QU-83-03c

Pit Number: PIT 2N

Location: _____

Elevation: _____

Page 3 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN				
		Scale: 1:20	Scale: 1:20	Scale: 1:20	Scale: 1:20	
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
<p>SILTSTONE: Same</p> <p>SILTSTONE: Medium greyish brown; muddy; coaly laminae</p> <p>MUDSTONE: Light grey; soft; wet; crushable; plastic</p> <p>MUDSTONE & COALS: Alternating bands of coal & mudstone</p> <p>COAL: No. 1 Rider Seam; Bright w/ some boney streaks</p> <p>MUDSTONE: Medium grey; hard; thin coaly wisps</p> <p>MUDSTONE: Medium orange & some coal bands up to 1cm thick</p> <p>MUDSTONE: Light brownish grey; thin coaly bands; carbonaceous and crin. at base (.03m)</p> <p>COAL: No. 1 Seam; Bright; Blocky; Hard; Massive; Very thin dirt band .49m from top (.05cm)</p> <p>COAL: Dull; boney; hard; platy fracture</p> <p>COAL: Clean; bright; blocky; hard; massive;</p> <p>COAL: Dull; dirty; some bright sections; hard</p> <p>COAL: Clean; bright; blocky; becoming softer at base.</p> <p>LOST CORE: (.27m)</p> <p>COAL: Completely crushed; soft; wet</p> <p>LOST CORE: (.18 m)</p> <p>MUDSTONE: Carbonaceous at top; soft; wet; fissile</p> <p>MUDSTONE: Silty; harder; thin coaly wisps throughout;</p> <p>MUDSTONE: Medium grey; softer; wet; badly broken</p> <p>MUDSTONE: Medium grey; fractured & broken; silty</p> <p>SILTSTONE: Some muddy sections; hard and soft zones;</p>			17	" "	1.42m.	
			18	" "		
	SAMPLE # 1	.42m		" "		
	SAMPLE # 2	.17m		" "	.12m.	
	SAMPLE # 3	.27m		" "	.27m.	
	SAMPLE # 4	.17m		17	.17m.	
	SAMPLE # 5	.47m		" "	.27m. .10m. .28m.	
				20		1.47
		SAMPLE # 6	3.45m	21		.05 1.50
				22		
			23		.11m. .27m.	
	SAMPLE # 7	.15m			.27m. .05m. .10m. .15m.	
	SAMPLE # 8	.50m			.30m.	
			24		.20m. .20m.	
				" "	2.70m.	

COREHOLE LOG

September 13, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-04

PAGE 1 OF 1

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRIP
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
X	X	X		X			
1	19.88	22.88	3.0	.85		COAL: Clean; hard; massive; bright and blocky; some calcite filling or fracture planes;	
				.02		BONE: Black; sandy texture; coaly material throughout (75%); and hard;	
				.94		COAL: As above	
				.02		MUDSTONE: Black; carbonaceous and coaly; very soft, wet & plastic	
				.83		COAL: Clean; bright and blocky; not as hard; more broken and fractured; light in weight.	
				.01		MUDSTONE: Medium brown; fissile; easily broken	
				.01		COAL: As above	
				.01		MUDSTONE: As above	
				.16		COAL: As above; slightly dirtier with small bone bands	
				.15		LOST CORE ???	
2	22.88	25.88	3.0				
				.14		MUDSTONE: Medium grey; crushed and broken; mixed up; lost core?	
				2.81		SILTSTONE: Medium grey becoming greenish grey; coarsening near base and becoming lighter in colour; fairly hard; no effervescence except in some thin light coloured clasts	
X	TOTALS			X		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	

SAMPLE No. 1

Hole Number: 011-83-04c Pit Number: PIT 2N
 Location: 103 320.4 N - 99,506.7 E Elevation: 321.0 m.
Preliminary Mining Area Page 1 of 1

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
Glacial Fill: <u>unconsolidated overburden</u> (19.88 m)			19		19.88 m.
COAL: No. 1 Seam; clean; hard; massive Bright & blocky;			20		.85 m.
BONE COAL: (.02 m)					.02 m.
COAL: Same as Above	SAMPLE #1	2.85 m.	21		.94 m.
MUDSTONE: (.02 m); Black, carbonaceous, very soft.					.02 m.
COAL: Clean; bright and blocky; light in weight.			22		.83 m.
COAL & MUDSTONE MIXED (.03 m)					.03 m.
COAL: Small bone bands throughout;					.16 m.
LOST CORE (.15 m).					.15 m.
MUDSTONE: Medium grey; crushed			23		.14 m.
LOST CORE (.05 m)					.05 m.
SILTSTONE: Medium grey grading downward to greenish grey; coarsening near base and becoming lighter in colour.			24		2.81 m.
			25		
			26		

COREHOLE LOG

September 14, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-0

PAGE 1 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
1	8.24	11.24	3.0	3.0		SILTSTONE: Medium grey; massive; fairly hard; uniform; generally no effervescence; some occasional calcareous shells; occasional coaly lenses
2	11.24	14.24	3.0	3.0		SILTSTONE: Same as above; some thin light buff coloured hard ledges of well-cemented material that shows moderate effervescence
3	14.24	17.24	3.0	1.43		SILTSTONE: Same as above; SANDSTONE: Medium grey; very fine grained to silty; very hard and well-cemented; variable bedded; moderate to strong effervescence, gradational lower contact
				1.15		SILTSTONE: Same as above; numerous thin lighter coloured lenses showing slight to moderate effervescence
4	17.24	20.24	3.0	3.0		SILTSTONE: Same as above; variable bedding; some cross-bedding evident; occasional calcareous shells; some sandy sections showing moderate effervescence.
5	20.24	23.24	3.0	2.74		SILTSTONE: Same as above
				.03		MUDSTONE: Medium to dark brown; silty; carbonaceous abundant thin coal bands throughout; fairly hard
				.02		MUDSTONE: Medium grey; very soft; wet and plastic; carbonaceous
X	TOTALS			X		÷ x 100 = % REC. SEAM ÷ x 100 = % TOTAL REC. SEAM(S)

Sample No. 1

COREHOLE LOG

HOLE NUMBER QU-83-05
PAGE 2 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
	X	X	X	X		
Sample No. 1	5			.05		MUDSTONE: Dark brown; hard; abundant coal bands (30% coaly);
				.16		COAL: No. 1 Rider Seam: dull and dirty at upper contact; becoming predominantly bright and blocky; some boney lenses containing disseminated pyrite; also some pyrite sheeting on cleat surfaces; hard (pyrite material not as abundant as previous holes)
Sample No. 2				.15		MUDSTONE: Medium brown grading downward to greenish-grey; carbonaceous near top; no effervescence; competent and hard;
				.27		MUDSTONE: Same as above - medium brown carbonaceous at top grading to greenish grey near base; bands of coal up to 1 cm. thick near top.
Sample No. 3				.14		MUDSTONE: Medium brown; slightly carbonaceous; softer and more fractured; some slickensided in regular surfaces; some fissility;
				.15		COAL: No. 1 Seam; clean; hard; bright and blocky; some calcite cementation; some dull inclusions; amber and resin blebs visible; no visible pyrite.
Sample No. 4				.02		COAL: Dull; boney; very hard
				1.31		COAL: Clean and hard; bright and blocky; some calcite cementation; no visible pyrite.
Sample No. 5				.03		COAL: Boney; dull; black; sandy; very hard;
				.04		BONE: Dark grey to black; coaly; very hard; gritty.
Sample No. 6	X	TOTALS		X		+ x 100 = % REC. SEAM
						+ x 100 = % TOTAL REC. SEAM(S)

COREHOLE LOG

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
Sample No. 6				.63		COAL: Clean and hard; massive; bright and blocky; no visible pyrite
	7	26.24	29.24	3.0	1.31	COAL: Same as above; some thin dull sections near base - possible lost core at base of seam
				.05		MUDSTONE: Medium brown to black; carbonaceous; very soft; wet and plastic; abundant coal material mixed in; crushed and fractured in core tube
Sample No. 7				.67		MUDSTONE: Medium brownish grey; fractured; some irregular slickensided surfaces; no effervescence
				.79		SILTSTONE: Medium greenish grey; hard; competent; some greenish fine sandy sections; becoming muddy at base; no effervescence.
X	TOTALS			X		÷ x 100 = % REC. SEAM
						÷ x 100 = % TOTAL REC. SEAM(S)

Hole Number: QU-R3-05C Pit Number: PIT 2N
 Location: 103,270.8 N - 99,512.2 E Elevation: 323.1 m.
Preliminary Mining Area Page 1 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
Glacial Till: (unconsolidated overburden)			8	(5.20)	8.24m.
			9	"	
uniform but some occasional calcareous shells and coaly lenses; thin, hard ledgs of well-famented material that shows moderate effervescence;			10	"	0.10m.
			11	"	
			12	"	
			13	"	
			14	"	
			15	"	



COAL LIMITED

Hole Number: DU-23-05c

Pit Number: PIT 2N

Location: _____

Elevation: _____

Page 2 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
SILTSTONE: Same			15	" "	.67m.
				" "	
				" "	
SANDSTONE: Medium grey; very fine grained to silty; hard; well-cemented; moderate to strong effervescence; gradational lower contact			1646m.
				" "	
				" "	
SILTSTONE: Medium grey w/ lighter coloured thin, hard beds of well-cemented (calcareous) material; some cross-bedding evident; some calcareous brachiopod shells			17	" "	5.91m.
				" "	
				" "	
				" "	
				" "	
				" "	
				" "	
			18	" "	
				" "	
			19	" "	
				" "	
				" "	
			20	" "	
				" "	
				" "	
			21	" "	
				" "	
				" "	
			22	" "	

Hole Number: QU-83-05c Pit Number: PIT 2N

Location: _____ Elevation: _____

Page 3 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20				
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
<p>SILTSTONE: Same</p> <p>MUDSTONE: (.03m): Medium to dark brown; silty</p> <p>MUDSTONE: (.02m): Medium grey; v. soft; wet; plastic</p> <p>MUDSTONE: (.05m): 30% coal</p> <p>COAL: No. 1 Rider Seam; Bright but some bone bands containing disseminated pyrite</p> <p>MUDSTONE: Bands of 1/2" coal 1cm. thick near top</p> <p>MUDSTONE: Some slickensided irregular surfaces</p> <p>COAL: No. 1 Seam; clean; hard; bright</p>			22	" " "	.98m	
	SAMPLE No. 1	.10	23	" " "	.03m.	
	SAMPLE No. 2	.44m		" " "	.05m.	
	SAMPLE No. 3	.15m		" " "	.44m.	
	SAMPLE No. 4	.21m		" " "	.15m	
<p>COAL: Clean and hard; bright and blocky; no visible pyrite; some calcite;</p> <p>DULL COAL & BONE COAL: Sandy texture; hard</p> <p>COAL: Clean; hard; bright; blocky</p> <p>COAL: As above</p>			24	" " "	.27m.	
	SAMPLE No. 5	.14m		" " "	.14m.	
					.15m.	
<p>MUDSTONE: Medium brown to black; carbonaceous; soft; wet and plastic; abundant coal mixed in;</p> <p>MUDSTONE: Medium brownish grey; fractured; some irregular slickensided surfaces</p> <p>SILTSTONE: Medium greenish grey; hard; competent, some greenish fine sandy sections; becoming muddy at base;</p>			25	" " "	1.31m.	
	SAMPLE No. 6	3.49		" " "	.03m.	
					.04m.	
<p>MUDSTONE: Medium brown to black; carbonaceous; soft; wet and plastic; abundant coal mixed in;</p> <p>MUDSTONE: Medium brownish grey; fractured; some irregular slickensided surfaces</p> <p>SILTSTONE: Medium greenish grey; hard; competent, some greenish fine sandy sections; becoming muddy at base;</p>			26	" " "	.63m.	
				27	" " "	1.31m.
	SAMPLE No. 7	.05m		" " "	.05m.	
				28	" " "	.67m.
<p>SILTSTONE: Medium greenish grey; hard; competent, some greenish fine sandy sections; becoming muddy at base;</p>			29	" " "	.79m	

COREHOLE LOG

QU-83-06

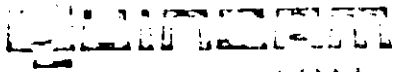
September 14, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-

PAGE 1 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
1	3.64	6.64	3.0	2.36		MUDSTONE: Brownish grey; silty; extremely variable bedding; abundant thin coal laminae and lenses throughout; abundant pyrite occurrences as blebs and lenses; one fracture at 45° to core axis with smooth slickensided surface; displacement indeterminate; coaly laminae decrease towards base; no effervescence.
				.63		MUDSTONE: Medium grey; grading downward to siltstone; very thin coaly wisps decreasing in number towards base; no effervescence.
						calcareous shell material; top .95 m. slightly effervescent; bottom .19 m. moderately effervescent; remainder not effervescent; occasional coal laminae.
3	9.64	12.64	3.0	3.0		SILTSTONE: Medium grey; hard; massive; uniform; broken at top; one high angle fracture plane (no slickensides); slight effervescence in some thin sections; some lighter coloured bands show moderate effervescence;
4	12.64	15.64	3.0	1.11		SILTSTONE: Same as above
				.65		SANDSTONE: Medium grey; fine grained; very hard and well-cemented, strong effervescence; top part dry; near base a high angle fracturing plane (70° to horizontal), which is water bearing - rock on either side is wet; fine silt coating on fracture surface; compression test
X	TOTALS			X		÷ 100 : % REC. SEAM
						÷ 100 : % TOTAL REC. SEAM(S)



COAL LIMITED

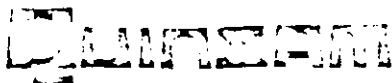
COREHOLE LOG

QU-83-06

HOLE NUMBER: QU-83-C

PAGE 2 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		yielded 12 g p m.
				1.21		SILTSTONE: Medium grey; sandy sections; variable bedding; occasional calcareous shells; lighter coloured bands show slight effervescence
5	15.64	18.64	3.0	3.0		SILTSTONE: Same as above; abundant fine sandy lenses; occasional calcareous shells; lighter coloured sandy lenses show slight to moderate effervescent;
6	18.64	21.64	3.0	2.66		SILTSTONE: Same as above
				.02		MUDSTONE: Medium grey; soft and wet; plastic
				.03		SILTSTONE: Medium grey; softer and fractured; muddy; coal laminae near base; no effervescence
Sample No. 1	7	21.64	24.64	3.0	.09	MUDSTONE: Dark grey; hard; carbonaceous; coaly laminae throughout; abundant finely disseminated pyritic material throughout top of No. 1 Rider Seam
					.45	COAL: Hard; bright and blocky but some dirty sections near top and base; abundant fine grained pyrite material in lenses near base; No. 1 Rider Seam.
Sample No. 3					.13	SILTSTONE: Medium greenish grey; small amount of coaly material present as wisps; hard and fairly uniform; muddy; no effervescence.
Sample No. 4					.14	MUDSTONE: Dark brown; fairly hard; carbonaceous and coaly throughout; groundwater percolation through this zone.
Sample No. 5					1.53	COAL: No. 1 Seam; bright and blocky; hard; massive; uniform; clean;
X	TOTALS			X		÷ x 100 = % REC. SEAM
						÷ x 100 = % TOTAL REC. SEAM(S)



COAL LIMITED

COREHOLE LOG

QU-83-06

HOLE NUMBER: QU-83-06

PAGE 3 OF 3

Sample No. 5

CORE No	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.
	DRILLED			RECOVERED		
	FROM	TO	TOTAL	SECTION	TOTAL	
X	X	X		X		
				.03		BONE: Gritty texture; black; streaks brown; dirty and dull;
				.56		COAL: Same as above
8	24.64	27.64	3.0	1.33		COAL: Same as above; very thin dull bands near base;
				.12		COAL: Crushed and broken in core tube; milled out; clean and bright; lost core?
				.03		MUDSTONE: Medium grey; very soft; wet and plastic; some coaly material mixed in;
				.50		MUDSTONE: Medium grey; fairly soft and frag-
						tured; one high angle fracture plane with slickensided surfaces indicating movement; displacement unknown but probably minor;
				.08		MUDSTONE: Dark grey to black; carbonaceous; fairly hard; silty
				.70		SILTSTONE: Medium greenish grey; uniform and hard; no effervescence; thin coaly wisps throughout.
X	TOTALS			X		÷ x 100 = % REC. SEAM
						÷ x 100 = % TOTAL REC. SEAM(S)

Hole Number: QU-83-06c Pit Number: Pit 2N
 Location: 103,217.8 N - 99,471.4 E Elevation: 322.5 m.
Preliminary Mining Area Page 1 of 4

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
Glacial Till: (unconsolidated overburden)			3		3.64m.
MUDSTONE: Brownish grey; silty; extremely variable bedding; abundant thin coal laminae and lenses throughout; abundant pyrite occurrences as blebs and lenses; some fracture at 45° to core axis with smooth slickensided surface; no effervescence			4		2.36m
			5		
MUDSTONE: Medium grey; grading downward to siltstone; very thin coaly wisps decreasing in number towards base;			6		0.63m.
			7	" "	
			8	" "	
SILTSTONE: Medium grey; hard; competent; some calcareous shells			9	" "	
			10	" "	



COAL LIMITED

Hole Number: QA-83-06c

Pit Number: Pit 2N

Location: _____

Elevation: _____

Page 2 of 4

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20				
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
<p>SILTSTONE: Medium grey; hard; compact. some calcareous shells; some lighter coloured bands showing moderate effervescence.</p> <p>SANDSTONE: Medium grey; fine grained; very hard and well-cemented; strong effervescence near base a high angle fracture which is water bearing; fine silt coating on fracture surface; compression test: 12g.p.m.</p>			10	" "		
				" "		
				" "		
				11	" "	#5
				" "		
				" "		
				" "		
				" "		
				13	" "	#6
				" "		
			14	" "	.65	
			" "			
			15	" "		
			" "			
			16	" "		
			" "			
			17	" "		

Hole Number: QU-93-06c

Pit Number: Pit 2N

Location: _____




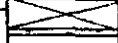


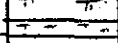
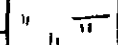
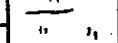
Elevation: _____

Page 3 of 4

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
<p>SILTSTONE: Medium grey; sandy sections; variable bedding; occasional calcareous shells; lighter coloured sandy lenses show slight to moderate effervescence;</p>			17	" "	8.0
			18	" "	6.9
			19	" "	4.9
			20	" "	
			21	" "	
					.02
					.33
		SAMPLE No. 1	.09		.09
		SAMPLE No. 2	.45	22	.45
		SAMPLE No. 3	.13		.13
	SAMPLE No. 4	.14		.14	
<p>MUDSTONE: Medium grey; soft; wet; plastic</p> <p>SILTSTONE: Muddy; coal laminae at base</p> <p>MUDSTONE: Dark grey; hard; carbonaceous; abundant pyrite (finely disseminated throughout).</p> <p>COAL: No. 1 Rider Seam: Bright and Blocky but some dirty sections near top and base; abundant fine grained pyrite material in lenses near base.</p> <p>SILTSTONE: Medium greenish grey; muddy.</p> <p>MUDSTONE: Dark brown; carbonaceous; soft; clay throughout</p>			23		1.53
		SAMPLE No. 5 (continued)		24	

Hole Number: QU-83-06c Pit Number: Pit 2N

Location: _____ Elevation: _____

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
<p>BANK: Gritty texture; black; dirty; dull; hard</p> <p>COAL: Bright; blocky; clean; hard; some very thin dull bands near base.</p> <p>COAL: Crushed and broken; clean and bright</p> <p>LOST CORE (15m.)</p> <p>MUDSTONE: Medium grey; very soft; wet; coal mixed in</p> <p>MUDSTONE: Medium grey; fairly soft and fractured; one high angle of fracture plane with slickensided surfaces; v. minor displacement</p> <p>MUDSTONE: Dark grey to black; carbonaceous; silty</p> <p>SILTSTONE: Medium greenish grey; uniform and hard; thin coaly wisps throughout;</p>	SAMPLE No. 5	3.51	24		0.03 m.
			25		1.89
			26		0.12
			26		0.15
			26		0.03
			27		0.59 #11
			27		0.08
			27		0.70
			27		
			28		
	29				
	30				

COREHOLE LOG

September 15th, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-07c

PAGE 1 OF 2

CORE No	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
X	X	X		X			
1	3.52	6.52	3.0	3.0		SILTSTONE: Medium grey; fairly hard; variable bedding; some lighter coloured sections that show slight effervescence but in general no effervescence	
2	6.52	9.52	3.0	3.0		SILTSTONE: Same as above; occasional small calcareous shells some slightly effervescent thin grey-brown coloured bands; one soft clay band .02m. thick at 7.62 m.	
3	9.52	12.52	3.0	3.0		SILTSTONE: Same as above; thin coal band at base of core	
Sample No. 1	4	12.52	15.52	3.0	.06	MUDSTONE: Medium grey to brown; fairly hard; carbonaceous and coaly;	
					.05	COAL AND MUDSTONE MIXED: Carbonaceous mudstone with interbedded clean coal bands; 50% coaly.	
Sample No. 2					.32	COAL: No. 1 Rider Seam; Bright and blocky but numerous thin lenses of silt and dirt; hard; pyrite on cleats;	
					.10	COAL: Same as above only with abundant lenses of finely disseminated pyrite;	
Sample No. 3					.03	MUDSTONE: Medium brown; carbonaceous and coaly;	
					.12	MUDSTONE: Medium grey; hard; silty; thin coal laminae at base	
Sample No. 4					.22	MUDSTONE: Medium brown; brownish grey at base; carbonaceous with abundant thin coal laminae near top; decreasing towards base; fissile and softer near base.	
					.04	MUDSTONE: Crushed, broken and highly fractured	
Sample No. 5							
X	TOTALS			X		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	X

COREHOLE LOG

HOLE NUMBER: QU-83-07

PAGE 2 OF 2

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TOPIE
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
	X	X	X	X		with numerous irregular slickensided surfaces.	
				.03		BONE: Dark, grey to black; streaks of brown; very hard; carbonaceous and coalv	
				1.46		COAL: No. 1 Seam; bright; blocky; clean, hard; no visible pyrite; some zones of fine calcite veining; massive and unbroken.	
				.03		BONE: Same as above;	
				.49		COAL: Same as above;	
5	15.52	18.52	3.0	.90		COAL: Same as above;	
				.40		COAL: Soft; broken and fractured; clean; some slickensided surfaces; light in weight.	
				.53		Lost Core	
				1.18		MUDSTONE: Medium grey; silty; some soft sections; fractured and broken; core ended on high angle fracture plane with smooth slickensided surface.	
6	18.52	21.52	3.0	2.71		SILTSTONE: Medium greenish grey with minor bluff sections that show moderate to slight effervescence; occasional thin hands of clean coal; sandy sections.	
				.27		SILTSTONE: Reddish brown; hard; competent but some old fracturing indicated with .03m. vertical displacement; reddish brown colour indicates prior exposure to air; followed by a reducing environment.	
X	TOTALS			X		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	

Sample No. 6

Hole Number: DU-83-D7c Pit Number: Pit 2N
 Location: 103 154.5 N - 99,377.6 E Elevation: 319.6 m.
Preliminary Mining Area Page 1 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
Glacial Till: (Unconsolidated overburden) SILTSTONE: Medium grey, variable bedding; occasional small calcareous shells;			3	o o o o o o o o o o o o	3.52
			4	" "	
			5	" "	6.0
			6	" "	
			7	" "	
			8	" "	
			9	" "	
			10	" "	

Hole Number: QU-93-07c Pit Number: PIT 2N

Location: _____ Elevation: _____

Page 2 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN				CORE RECOVERED
		DEPTH (m)	LITHOLOGY	THICKNESS (m)	Scale: 1:20	
SILTSTONE: Same		10	" "			
		11	" "			
<p>MUDSTONE: Medium gray to brown, carbonaceous</p> <p>COAL & MUDSTONE MIXED: Gray mudstone w/ clean coal bands</p> <p>COAL: No. 1 Rider Seam: Bright & blocky but thin lenses of silt and dirt; pyrite and cleats</p> <p>COAL: Same w/ abundant lenses of finely disseminated pyrite</p> <p>MUDSTONE: Medium gray, carbonaceous and coaly</p> <p>MUDSTONE: Medium gray, hard, silty; coal laminae at base</p> <p>MUDSTONE: Medium brown, carbonaceous w/ abundant thin coal laminae near top; fissile near base</p> <p>MUDSTONE: Crushed and broken; highly fractured</p> <p>ZONE: Dark grey to black; streaks brown; v. hard</p> <p>COAL: No. 1 Seam; bright and blocky; clean; hard; no visible pyrite; zones of fine calcite veining; massive & unbroken;</p> <p>BONE: As above.</p> <p>COAL: As above;</p> <p>COAL: Soft; broken & fractured; clean; some slickensided surfaces; light in weight</p> <p>LOST CORE</p>	SAMPLE No. 1					
	SAMPLE No. 2	.37			.32	
	SAMPLE No. 3	.10	13		.10	
	SAMPLE No. 4	.15			.12	
	SAMPLE No. 5	.26			.22	
					.04	
					.03	
			14		1.46	
		SAMPLE No. 6	3-31			
			15		.03	
		16		1.39		
				.40		
		17	X	.53		

Hole Number: QU-83-07c Pit Number: PIT 2N

Location: _____ Elevation: _____

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20				CORE RECOVERED
		DEPTH (m)	LITHOLOGY	THICKNESS (m)	RE	
MUDSTONE: Medium gray, silty, soft sections; fractured and broken; high angle slickensided fracture at base,		17		1.18		
		18				
SILTSTONE: Medium grayish green w/ minor silty sections that show slight moderate effervescence; sandy sections		19	" "	2.71		
		20	" "			
SILTSTONE: Reddish brown; hard; competent but with some old fracturing indicating .03 m. vertical displacement.		21	" "	.27		
		22	" "			
		23	" "			

COREHOLE LOG

September 16, 1983

STEVE GARDNER

HOLE NUMBER: QU-83-08c

PAGE 1 OF 2

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE DEPTH
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
1	2.35	6.35	3.0	3.0		SILTSTONE: Medium grey; fairly hard but some broken sections; thin brownish coloured lenses throughout that show slight effervescence; in general, no effervescence.	
2	6.35	9.35	3.0	2.61		SILTSTONE: Same as above;	
Sample No. 1	2	9.35	9.87	.52	.54	SILTSTONE: Same as above	
Sample No. 2				.14		SILTSTONE: Brownish grey; muddy; thin coal bands of small amount of pyrite present	
Sample No. 3				.05		MUDSTONE: Massive amount of pyrite throughout	
Sample No. 4				.20		COAL: Dark brown to black; dirty; fairly hard; carbonaceous with thin mudstone laminae throughout.	
Sample No. 5	3	9.87	12.87	3.0	.16	MUDSTONE: Medium brownish grey; fairly hard; uniform; slightly carbonaceous;	
Sample No. 6				.23		COAL: No. 1 Rider Seam; hard; bright and blocky; fairly clean except for upper contact, which is slightly dirty; some visible pyrite but not abundant;	
Sample No. 7				.27		MUDSTONE: Medium grey; fairly uniform; competent and solid; thin clean coal laminae throughout.	
Sample No. 8				.10		MUDSTONE: Brownish grey; softer; some fissility; carbonaceous bands; coaly laminae throughout.	
				1.01		COAL: No. 1 Seam; Bright & blocky; clean; hard; massive; no visible pyrite; amber and resin blebs	
				.02		COAL: Dull; dirty; platy fracture; soft;	
				.46		COAL: Bright, blocky, clean, hard, massive	
				.04		BONE: Black, streaks brown; sandy texture;	
TOTALS						÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	

COREHOLE LOG

HOLE NUMBER: QU-83-08c
PAGE 2 OF 2

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE C	
	DRILLED			RECOVERED				
	FROM	TO	TOTAL	SECTION	TOTAL			
	X	X	X	X				
Sample No. 9						carbonaceous and coalv; very hard.		
					.72	COAL: Same as above		
	4	12.87	15.87	3.0	.43	COAL: Same as above; softer, slightly fractured section at base		
Sample No.10					.47	COAL: Clean but very soft; platv fractured, easily crushed; some dull sections.		
					.01	MUDSTONE: Very soft; wet; coalv; fissile; squeezed;		
					.17	Lost core		
					.06	COAL: Soft, completely crushed and milled in tube; wet		
Sample No.11					.09	MUDSTONE: Dark grey grading downward to brownish grey; highly carbonaceous at top, decreasing downward; soft; plastic		
					.24	MUDSTONE: Brownish grey grading downward to greensih grey; becoming silty near base; hard and massive;		
					.37	SILTSTONE: Medium greenish grey; hard; massive; competent; no effervescence;		
					.42	SILTSTONE: Medium to light greenish grey; hard and massive; sandy; slightly carbonaceous at base with one thin coal lense.		
					.71	SILTSTONE: Medium greenish grey; same brown coloured sections; no effervescence; hard; massive.		
X	TOTALS		X		÷	x 100 =	% REC.	SEAM
					÷	x 100 =	% TOTAL REC.	SEAM(S)

Hole Number: QU-93-08c Pit Number: PIT 2N

Location: 103, 109.4 N - 99, 319.5 E Elevation: 322.8 m.

Preliminary Mining Area Page 1 of 2

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN				RE
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
<p>GLACIAL TILL (unconsolidated overburden)</p> <p>SILTSTONE: Medium grey; fairly hard but some broken sections; thin brownish coloured lenses throughout;</p>			2	o . . . o . . . o . . .	2.35	
				" "		
			3	" "		
				" "		
			4	" "		
				" "		
			5	" "		
				" "		
			6	" "		7.54
			" "			
		7	" "			
			" "			
		8	" "			
			" "			
		9	" "			

Hole Number: QU-83-08 C Pit Number: PIT 2N

Location: _____ Elevation: _____

Page 2 of 2

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20				RE
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
SILTSTONE: Same			9	" "		
	SAMPLE No. 1	.54		" "	.54	
SILTSTONE: Brownish grey, muddy; thin coal bands Small amount of pyrite present.	SAMPLE No. 2	.14	10	" "	.74	
MUDSTONE: Massive amount of pyrite throughout	SAMPLE No. 3	.20		" "	.05	
COAL: No. 1 Rider (Copper) Dark brown to black; dirty; thin mudstone laminae throughout.	SAMPLE No. 4	.16		" "	.20	
MUDSTONE: Medium grey, compact; thin clean coal bands throughout grey; softer; some fissility; coaly laminae throughout.	SAMPLE No. 5	.23		" "	.16	
	SAMPLE No. 6	.10	11	" "	.23	
	SAMPLE No. 8	.10		" "	.27	
hard; massive;				" "	.10	
COAL: Dull, dirty; platy fracture	SAMPLE No. 9	2.68	12	" "	.02	
COAL: Bright; blocky; clean; hard				" "	.46	
BONE: Black; streaks brown; sandy texture;				" "	.04	
COAL: As above; slightly fractured section at base;			13	" "	1.15	
				" "		
COAL: Clean but very soft; platy fracture; easily crushed; minor dull sections;	SAMPLE No. 10	.54	14	" "	.47	
MUDSTONE: Very soft; wet; fissile; coaly;				" "	.01	
LOST CORE				" "	.06	
COAL: Soft; completely crushed & milled in tube; wet	SAMPLE No. 11	.07		" "	.06	
MUDSTONE: Dark grey; highly carbonaceous at top; decreasing downward; soft; plastic				" "	.04	
MUDSTONE: Brownish to greenish grey; silty near base			15	" "	.37	
SILTSTONE: Medium greenish grey; hard; massive; compact				" "	.42	
SILTSTONE: Medium to light greenish grey; hard; massive sandy; slightly carbonaceous at base;			16	" "	.71	
SILTSTONE: Medium greenish grey; some brown coloured sections; hard; massive				" "		

COREHOLE LOG

HOLE NUMBER: QU-83-09c
PAGE 1 OF 3

September 17, 1983

STEVE GARDNER

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
X	X	X		X			
1	2.72	5.72	3.0	.19		SILTSTONE: Rusty brown; highly oxidized; crushed and milled in core tube; iron-staining throughout; upper contact with glacial till;	
				2.41		SILTSTONE: Medium grey; massive; hard; uniform; occasional small calcareous shells; no effervescence; sandy at base.	
				.16		SANDSTONE: Medium grey; fine grained; silty; lithic; hard; thin bedded; moderate to strong effervescence.	
2	5.72	8.72	3.0	.18		SANDSTONE: Same as above	
				2.88		SILTSTONE: Same as above; No effervescence	
3	8.72	11.72	3.0	2.93		SILTSTONE: Medium grey; hard; some high angle fracturing; variable bedded; numerous sandy sections - slight effervescence in these sandy sections.	
4	11.72	14.72	3.0	2.97		SILTSTONE: Same as above	
5	14.72	17.72	3.0	2.19		SILTSTONE: Same as above; one high angle fracture plane (dry) - no slickensides.	
				.17		SILTSTONE: Medium to dark grey; similar to above only slightly darker in colour; a few thin coaly laminae throughout; some pyritic sulphur occurrences throughout; no effervescence	
				.09		SILTSTONE: Brownish grey (medium to dark); hard; muddy texture; greater concentration of coaly laminae and higher degree of pyrite replacement of plant imprints, no effervescence.	
X	TOTALS			X		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	X

Sample No. 1
Sample No. 2

COREHOLE LOG

HOLE NUMBER: QU-83-09c

PAGE 2 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE FEET
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
	X	X	X	X			
Sample No. 3				.05		COAL: No. 1 Rider (Upper Branch) hard; clean; bright and blocky; calcite on cleat surfaces; thin bone band at base; occasional pyrite on cleats.	
Sample No. 4				.14		MUDSTONE: Dark grey; hard; numerous thin coaly stringers; abundant pyrite in lenses; some irregular slickensided fractures.	
Sample No. 5				.25		COAL: No. 1 Rider (lower Branch) As above; numerous dull inclusions; more abundant pyrite.	
Sample No. 6				.13		MUDSTONE: Dark brownish grey; hard; some coal laminae throughout	
Sample No. 7	6	17.72	20.72	3.0	.14	MUDSTONE: Same as Above	
					.16	MUDSTONE: Medium brown to dark brown at base; softer than above with some fissility; coaly material abundant especially at base; some evidence of movement on fracture planes	
Sample No. 8				1.53		COAL: No. 1. Seam; clean; hard; massive; bright and blocky; uniform;	
					.02	COAL: Dull and bright banded; hard;	
Sample No. 9				.02		BONE: Dark grey; fine sandy texture; very hard; coaly; does not break cleanly away at coal contact	
					1.17	COAL: bright and blocky; clean; hard; massive; some very thin dull boney laminae less than .005 m. thick.	
Sample No. 10							
Sample No. 11	7	20.72	23.72	3.0	.12	COAL: Same as above	
					.53	COAL: Softer than above but clean; light in weight; wet; crushed and broken;	
	X	TOTALS		X		÷ x 100 = % REC. SEAM	
						÷ x 100 = % TOTAL REC. SEAM(S)	X

COREHOLE LOG

HOLE NUMBER QU-83-09c
PAGE 3 OF 3

CORE No.	CORE FOOTAGES					GEOLOGICAL DESCRIPTION LITHOLOGY, COLOR, SIZE, TEXTURE, HARDNESS, SHEARING, CONTACTS, BEDDING ANGLE, ALTERATION, WETNESS, CONTAMINATION.	TRUE RECU
	DRILLED			RECOVERED			
	FROM	TO	TOTAL	SECTION	TOTAL		
	X	X		X			
Sample No. 12				.02		MUDSTONE: Very soft; wet and plastic; abundant fine coal mixed in;	
Sample No. 13				.09		COAL: Same as above	
Sample No. 14				.04		MUDSTONE: Soft; fissile; dull black; carbonaceous and coal; broken:	
				.54		MUDSTONE: Brown to grey; hard; competent; carbonaceous and coal at top 3 cm.; becoming silty toward base;	
				1.65		SILTSTONE: Medium grey; becoming greenish grey near base; hard; competent; uniform; some thin coal bands .5 cm. thick near middle; no	
	TOTALS			X		÷ x 100 = % REC.	SEAM
				X		+ x 100 = % TOTAL REC.	SEAM(S)

Hole Number: QU-83-09c Pit Number: PIT 2N

Location: 103 102.8 N - 99 363.4 E Elevation: 324.1 m.
Preliminary Mining Area Page 1 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20			
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)
GLACIAL TILL: (unconsolidated overburden)			2	o 1.0 o .9 o .6 o .3	2.72
SILTSTONE: Rusty brown; highly oxidized			3	" " " "	.19
SILTSTONE: Medium grey; massive; hard; uniform; sandy at base			4	" " " "	2.41
SANDSTONE: Medium grey; fine grained; silty; lithic thin-bedded; moderate to strong effervescence			5	" " " "	.34
SILTSTONE: As above			6	" " " "	
			7	" " " "	2.88
			8	" " " "	
			9	" " " "	

Hole Number: DU-83-09c

Pit Number: PIT 2N

Location: _____

Elevation: _____

Page 2 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN				RE	
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)		
<p>SILTSTONE: Medium grey; hard; some high angle fracturing; variable bedded; numerous sandy sections</p>			9	" "			
				" "			
				10	" "		
					" "		
				11	" "		
					" "		
				12	" "	8.09	
					" "		
				13	" "		
					" "		
			14	" "			
				" "			
			15	" "			
				" "			
			16	" "			

Hole Number: QU-33-09c Pit Number: PIT 2N

Location: _____ Elevation: _____

Page 3 of 3

DESCRIPTION	SAMPLE INTERVAL	CORE COLUMN Scale: 1:20				
		CORE RECOVERED	DEPTH (m)	LITHOLOGY	THICKNESS (m)	
<p>SILTSTONE: Medium to dark grey; similar to above, only slightly darker in colour;</p> <p>SILTSTONE: Brownish grey; muddy texture; coaly</p> <p>COAL: No. 1 Rider: Upper Bench G; hard; clean</p> <p>MUDSTONE: Dark brownish grey; hard; some coal laminae</p> <p>MUDSTONE: Medium to dark brown at base; coaly material abundant especially at base;</p> <p>COAL: No. 1 Seam; clean; hard; massive; bright and blocky;</p> <p>COAL & BONE: Hard; sandy;</p> <p>COAL: Bright; blocky; clean; hard; massive; thin dull bonny laminae less than .005 m. thick.</p> <p>COAL: Softer but clean; wet; crushed and broken; light in weight.</p> <p>MUDSTONE: Very soft; wet & plastic; abundant fine coal mixed in.</p> <p>COAL: As above</p> <p>MUDSTONE: Silty, fissile; dull black; carbonaceous</p> <p>MUDSTONE: Brown to grey; hard; carbonaceous at top; becoming silty at base</p> <p>SILTSTONE: Medium grey; becoming greenish grey near base; hard; competent;</p>	SAMPLE No. 1 & 2 combined	.26 m.	16			
	SAMPLE No. 3	.14 m.	17		.17	
	SAMPLE No. 4	.14 m.			.09	
	SAMPLE No. 5	.25 m.			.14	
	SAMPLE No. 6	.27 m.			.25	
	SAMPLE No. 7	.16 m.		18		.27
	SAMPLE No. 8	1.53 m.				.16
	SAMPLE No. 9	.04 m.		19		1.53
	SAMPLE No. 10	1.29 m.				.04
	SAMPLE No. 11	.53 m.		20		1.29
	SAMPLE No. 12	.02 m.				.53
	SAMPLE No. 13	.21 m.				.02
	SAMPLE No. 14					.04
				21		.53
			22		.54	
			23		1.65	

COMPANY QUINSAM COAL LTD.
Kine III?
 WELL QU-B3-100
 FIELD CAMPBELL RIVER
 PROVINCE BRITISH COLUMBIA
103,389.09 N 99,559.8E
 Lsd. Sec. Twp. Rge. W. Other Services

Permanent Datum G.L. Elev. _____ Elev. K.B. _____
 Log measured from G.L. ft. above perm. Dat. D.F. _____
 Drilling measured from G.L. G.L. _____

Date 18-SEPT-89
 Run No. ONE
 Type Log _____
 Depth - Driller _____
 Depth - Logger _____
 Bottom logged interval 26.01
 Top logged interval 19.01
 Type fluid in hole _____
 Salinity, PPM Cl. _____
 Density _____
 Level _____
 Max. rec. temp. deg. F. _____
 Operating rig time _____
 Recorded by _____
 Witnessed by [Signature]

RUN No.	BORE - HOLE RECORD			CASING RECORD		
	Bit	From	To	Size	Wgt.	To

Fold Here

This Heading and Log Conforms to API RP 33

EQUIPMENT DATA

Run No.	Gamma Ray				General				Resistance	Density	Coliper
	Tool Model No.	Diameter	Type	Spacing	Length	Horiz. Scale	Rm @ of	Source Model			

LOGGING DATA

Run No.	General		Gamma Ray			Density		
	Speed	Depth	T.C.	Sens.	Zero	Sens.	Zero	Div. L or R
From		To	Sec.	Settings	Div. L or R	Sec.	Settings	Div. L or R

Reference Literature:

Remarks:

DEPTH 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 Gamma Ray API Units 6m/cm³
 Well: QU-B3-100

