

Traces No
Vol. 2 of 2
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667

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**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

00 667

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST Ali Chowdry

DATE June 19, 1980

SHEET 1

STATION	UNIT	DESCRIPTION	
M1		Limestone: Palaeozoic; bioclastic - clumps of crinoids and colonial corals, coquina (brachiopods), cherty and much silicification of fossil debris.	
		349/52 W.	
M2		Sandstone: orange grey to grey weathering, freshly broken, medium to dark grey, medium-grained, cherty/quartzose, large-scale cross-bedding. Thrust contact 10 m away.	
		314/59 W. (overturned)	
M3		Sandstone: This exposure about 10 m thick and constitutes a distinct ledge; medium-grained (sometimes coarse-grained to granular), 15 cm thick pebbly layer, impressions of large woody material - some carbonized. Distinct very large-scale cross-bedding demonstrating definite overturning.	
		305/58 W. (overturned)	
M4		Sandstone: essentially similar to above, 4 m thick outcrops.	
		322/47 W. (overturned)	

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DATE June 19, 1980 SHEET 2

STATION	UNIT	DESCRIPTION	
M5		Contact of medium/coarse-grained sandstone with underlying red weathering very fine-grained strongly calcareous sandstone incorporating tiny but scattered carbonaceous specks (total thickness of the latter 0.9 m).	
		330/40 W. (overturned)	
M6		Sandstone: light to medium grey, medium-grained; large scale cross-stratification (these enclosing thinner sets). Definite truncation of laminae indicating overturning, exposure 3 m thick.	
		334/35 W. (overturned)	
M7		Conglomerate: essentially pebbles and cobbles of hard quartzites and cherts (subordinate) within a medium-grained clean sandstone matrix - now thoroughly indurated. Larger clastics show strained fabrics; exposure about 20 m above the lake level.	
		319/40 W. (overturned)	

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June 20, 1980

SHEET 3

STATION	UNIT	DESCRIPTION	
M8		Grits/Conglomerates: very hard, extremely indurated, distinct strained	
		fabrics; 3.5 m thick exposure.	
		315/40 W.	
		Note that this exposure when laterally traced develops into a 10 m thick	
		conglomerate bed.	
M9		Conglomerate: cobbles (some boulders) of quartzites (predominant and	
		multicolored cherts set in a variable matrix (from zero to 25%). Welding	
		of pebbles and coarser clastics (where matrix non-existent). Strained	
		and shearing fabrics common.	
		335/35 S.W. (overturned)	
M10		Conglomerate: massive, about 23 m thick sequence exposed. This represents	
		the normal facing of the Cadomin Conglomerate (the other limb of syncline)	
		308/35 S.W. (Normal). 308/42 W. - away 15 m away. Note this conglomerate	
		forms a distinct ridge and can be laterally traced for 400 m to the	
		north and south.	

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SHEET 4

STATION	UNIT	DESCRIPTION	
M11		Sandstone: orange weathering, very fine-grained, strongly calcareous, ripple drift cross-lamination. A large massive area between M10 and M11. Normal facing.	
		319/67 W.	
M12		Sandstone: medium grey, medium to coarse-grained, very large-scale cross-stratification, planar to cross-beds. These represent the other limb of syncline.	
		318/67 W.	
M13		Sandstone: 6 m thick exposure of medium-grained fluvial sandstone with large-scale cross-bedding (planar and troughs). There is a recessive interval between M12 and M13 and it exhibits some fine-grained ripple-drifted sandstone.	
		321/73 W. (20 m away from M13 down dip in a coal drawing that was presumed trenched during 1979.)	

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SHEET 5

STATION	UNIT	DESCRIPTION
M14		Sandstone: light grey to medium grey, medium-grained, 10 cm thick
		pebbly band, some interbedding of orangy weathering, thinly-bedded,
		strongly calcareous sandstone. Essentially fluvial sandstone.
		319/74 W.
		Just down dip is a carbonaceous horizon (within a recessive interval).
		Laterally and a little lower stratigraphically is a 30 cm thick
		Conglomerate band which appears to taper off.
M15		Sandstone: brownish grey, coarse- to very coarse-grained with occasional
		pea-sized pebbles. Carbonaceous and recessive horizon between M14 and
		M15. 334/45 W.
M16		Sandstone: buff weathering, fine-grained, very small-scale cross-lamina-
		tion, rippled. It appears the fluvial cycle ends immediately after M16
		and these sandstones constitute rounded ridges. Laterally 10 m away is
		a coal showing.
		317/65 S.W.

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SHEET 6

STATION	UNIT	DESCRIPTION	
M17		Sandstone: medium-grained, clean, cross-bedded cross-sets 10 - 15 cm thick. But the sequence after M16 is predominantly fine-grained and recessive. 314/46 W.	
M18		Sandstone: rusty weathering, fine-grained, thinly-bedded. 320/58 W.	
M19		Sandstone: fine-grained, flaggy, ferruginous, carbonaceous debris from an animal burrow. 333/48 W.	
M20		Sandstone: coarse-grained, pebbly (1 m thick exposure). However, mostly recessive interval and appears to incorporate dominantly the finer-grained clastics. The 1 m thick sandstone underlain by 0.9 m thick conglomerate with sandstone/gritstone matrix. Pebbles about 0.6 cm across. 342/48 W. Just below this unit is a coal zone, at least 0.6 m thick.	

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21 June 1980

SHEET 7

STATION	UNIT	DESCRIPTION	
M21		Sandstone: very fine-grained, very finely laminated, non-calcareous.	
		313/51 W.	
M22		Sandstone: medium- to coarse-grained with occasional large (2.5 cm to	
		5 cm) pebbles, large-scale cross-bedding; 15 m thick massive outcrop.	
		300/84 E.	
M23		Sandstone: medium grey, medium-grained, large-scale cross-bedding;	
		unit 20 m thick - ledge forming.	
		356/20 E. (into the Hill)	
M24		Sandstone: medium- to coarse-grained, trough cross-bedded, 1 m thick	
		exposure. 320/70 W.	
M25		Sandstone: fluvial sands - identical to M24.	
		330/60 E.	

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SHEET 8

STATION	UNIT	DESCRIPTION	
M26		Sandstone: medium grey, medium-grained, massive to thickly-bedded, cross-	
		bedded; large exposure.	
		302/56 W.	
M27		Sandstone: medium- to coarse-grained, massive; exposure a little suspect.	
		325/64 W.	
M28		Sandstone: medium-grained, clean, cross-bedded, a small exposure.	
		215/67 W.	
M29		Sandstone: papery to thinly-bedded, cross-laminated, fine-grained. ? fine-	
		grained facies. 324/55 W.	
M30		Sandstone: brownish grey, medium-grained, large-scale cross-bedding;	
		335/55 W., 305/51 W. on the same exposure a little higher up.	

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SHEET 9

STATION	UNIT	DESCRIPTION	
M31		Sandstone: grey to brownish grey, medium-grained, high trough cross-beds,	
		normal facing as demonstrated by this good exposure.	
		313/65 W.	
M32		Sandstone: as above, fluvial, distinctly cross-bedded, medium-grained;	
		very reliable exposure.	
		330/52 W.	
M33		Coal smudge mixed with earth around an animal burrow.	
M34		Sandstone, light to medium grey, fine- to medium-grained, clean and	
		fairly sorted, large-scale cross-stratification.	
		315/70 W.	

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SHEET 10

STATION	UNIT	DESCRIPTION	
M35		Sandstone, light grey, fine to medium-grained, distinctly sugary texture (appear orthoquartzite). 3.5 m thick, might be a marker. Recessive lithologies above and below this unit.	
M36		Sandstone, light grey to brownish grey, medium- to coarse-grained, argillaceous, some beds with pebbles and finely conglomerate. Large scale cross-beds. 310/60 W.	
M37		Sandstone, medium grey, medium-grained, thickly bedded, cross-bedded; 5 m sequence exposed. 305/35 W.	
M38		Sandstone, as above, ? Nose of syncline. 285/13 N.E.	
M39		Sandstone, medium- to coarse-grained, large scale cross-beds, some pebbles (do not appear to be well cemented as these drop out readily). 330/17 E.	

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SHEET 11

STATION	UNIT	DESCRIPTION	
M40		Sandstone, medium grey, very thinly bedded (on a scale of cms.) papery, very fine-grained, ripple drifted. This is definitely fine-grained facies. What structure between M39 and M40?	
M41		Sandstone, fluvial huge exposure showing very large cross-beds with troughs. Many intervals with pebbles. 305/13 E. About 6.5 m stratigraphically below M41 are two conglomerate beds, each about 0.45 thick separated by 0.5 m fluvial sandstone. These appear to represent Channel deposits. The sandstones are trough cross-bedded. The contact between the facies at M41 and M42 should be placed at the point of observation. (M41)	
M42		Sandstone, orange-weathering, very thinly-bedded, very fine-grained sandstone/siltstone. Abundant Pelecypod Shells (? Buchias). This exposure seems to represent fine-grained facies.	
		215/23 E.	

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SHEET 12

STATION	UNIT	DESCRIPTION	
M43		Sandstone, deep orange weathering, very thinly-bedded, very fine-grained, strongly calcareous. 210/25 S.W.	
M44		Sandstone, medium grey weathering, very thinly-bedded, very fine-grained, rootlets, totally non-calcareous. These beds overlie the rusty sequence containing thin coals. 308/16 S.W.	
M45		Sandstone, dark grey to pepperish, fine- to medium-grained, Fluvial facies. This station is very close to the contact of fine facies (overlying) and these fluvial sands. Is this the younger fine-grained facies? Otherwise a major structure would be indicated here.	
M46		Sandstone, grey weathering, thinly-bedded, very fine-grained, strongly calcareous, ripple-drifted. Between M45 and M46 there are 14 - 15 m thick medium-grained fluvial sandstone some with large pebbles and large-scale cross-beds. 327/62 W.	

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SHEET 13

STATION	UNIT	DESCRIPTION	
M47		Sandstone, light grey to brown, thick-bedded, fine to medium-grained,	
		cross-bedded, right facing.	
		320/37 W.	
M48		Sandstone, medium- to coarse-grained with orange matrix, generally	
		clean, strongly calcareous. Just below is about 0.6 m thick coal trench	
		(not formally designated during 1979).	
		310/29 W.	
M49		Sandstone, orange weathering, very thinly-bedded, ripple-drifted, very	
		fine-grained. This exposure might represent closure of synclinal	
		structure.	
		315/71 N.E.	
M50		Sandstone, buff to orange weathering, medium- to coarse-grained, clean,	
		calcareous. Right facing. 321/60 W. Note the dip is very variable at	
		M49 and M50 and this might suggest the presence of a structure.	
		321/60 W.	

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SHEET 14

STATION	UNIT	DESCRIPTION	
M51		Sandstone, medium to brownish grey, medium- to coarse-grained, argilla- ceous and dirty matrix, large flags, cross-bedded. Pebbles on bedding planes and conglomeratic. 305/13 W. Ten metres away, 290/15 W.	
M52		Mudstone, dark grey to black, slightly laminated, 10 - 12 cm thick coal seam. These mudstones are underlain by very fine-grained sandstone or siltstones with rootlets. 313/33 E. (stream section)	
M53		Siltstone, medium grey, finely dispersed plant debris. This exposure 80 m down stream. 347/27 E.	
M54		Sandstone, medium grey to brown, very fine-grained, ripple-drift cross- lamination. 335/13 E.	
M55		Sandstone, very thinly-bedded, platy, ripple-drifted, very fine-grained, calcareous. 318/24 W.	

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SHEET 15

STATION	UNIT	DESCRIPTION
M56		Sandstone, medium- to coarse-grained, clean, strongly cross-bedded, troughs. 311/50 W.
M57		Sandstone, medium-grained, abundant cross-bedded units indicating normal facing, non-calcareous. 315/50 W.
M58		Sandstone, beds essentially similar to M57 but measurements on their lateral equivalents. 315/51 W.
M59		Sandstone, this measurement on a 9.5 m thick unit underlying M58. Medium-grained sands with orange streaks (lamination), abundant of woody impressions, patchily calcareous. Beneath is a 0.37 m thick coal seam. Loose rubble yielded pelecypods. 322/56 W.
M60		Sandstone, very fine-grained, finely laminated, rootlets abundant, strongly calcareous. 324/56 W.

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SHEET 16

STATION	UNIT	DESCRIPTION	
M61		<p>Mudstone (silty) Siltstone, extremely thinly-bedded (papery), very delicate and tiny ripples and lenses. A definite recessive zone here so the contact of these with the overlying coarser sequence is well-defined. Silty/shaly lithologies, non-calcareous.</p> <p>308/14 W.</p>	
M62		<p>Sandstone, very thinly-bedded, very fine-grained, rippled, 1.5 - 1.8 m thick sequence, calcareous. It appears these beds are interbedded with silty shales. Just 3 m above this unit is 0.30 m clean coal. About 3 m (stratigraphically) below is 3.5 m thick clean, fine to medium-grained orthoquartzite, these in turn underlain by grey shales containing broken up plant matter.</p> <p>308/53 W.</p>	
M63		<p>Sandstone, thinly-bedded, very fine-grained, ripple-drifted. This lithology (0.9 m thick) is an intercalation within an otherwise grey, silty shales with abundant plant matter - some of it carbonized.</p> <p>317/57 W.</p>	

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SHEET 17

STATION	UNIT	DESCRIPTION	
M64		Sandstone, fine-grained, thinly-laminated, strongly calcareous. This is a tiny exposure - doubtful whether in place. 332/49 W.	
M65		Shales, thinly-laminated prpery shales, appear banded - reminiscent of shales just above the marker 'quartzite'. 349/67 W.	
M66		Sandstone, medium-grained, clean, large cross-bedded units; about 5 m thick exposure, non-calcareous. 308/55 W.	
M67		Sandstone, medium-grained, cross-bedded, fluvial aspects, a rusty weathering pebble (dense fine-grained lithology), non-calcareous, about 4.2 m thick exposure. 315/49 W.	

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SHEET 18

STATION	UNIT	DESCRIPTION	
M68		<p>Sandstone, medium- to coarse-grained, large cross-beds, trough cross-bedding; excellent truncation of laminae demonstrating right way up strata. Continuous exposure of about 16.5 m thick. Some orange species in matrix, non-calcareous mostly; very occasional elongate, rusty pebbles.</p> <p style="text-align: center;">325/47 W.</p>	
M69		<p>Sandstone, very fine-grained, small-scale orange lamination, strongly calcareous and these sandstones are immediately overlain by 3 m thick medium grey, rooty argillaceous siltstones. The entire assemblage represents a recessive sequence above the sandstones of M68.</p> <p style="text-align: center;">316/55 W.</p>	
M70		<p>Sandstone, medium-grained, clean, sorted, non-calcareous, large cross-sets; sequence ridge forming.</p> <p style="text-align: center;">303/50 W.</p>	

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SHEET 19

STATION	UNIT	DESCRIPTION	
M71		Sandstone: more aptly an orthoquartzite, fine-grained, very clean, hard, cross-bedding vaguely discernible. Total thickness: 3.6 m. 283/41 W	
M72		Sandstone: very thinly-bedded (papery), very fine-grained or coarse grained silstone, small ripples and cross-lamination, clean, non calcareous. These rocks overlie the 'orthoquartzites', about 9 to 12 m.	
M73		Sandstone: coarse-grained, at places gritty and finely pebbly (dominantly cherts); large trough cross-bedded units. Exposure 3 m thick. 313/30 W	
M74		Sandstone: medium grey, brownish, thick-bedded, coarse-grained, large-scale cross-sets; 4.6. in thick exposure. 293/35 W	

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SHEET 20

STATION	UNIT	DESCRIPTION
M75		Siltstone/mudstone/sandstone: 7.6 m thick sequence essentially of extremely tiny lens of siltstones and mudstone (very papery)- lens only a few mm thick, some shales have shells; these overlain by thickly-laminated, ripple-drifted, very fine-grained sandstone with deep orange weathering, calcareous. About 0.3 m coal exposed in stream section.
		329/27 E
M76		Sandstone: these sandstones lie photographically above those of M75; medium to coarse-grained, clean, cross-bedded.
		328/28 E
M77		Sandstone: medium grey, medium-grained, large-scale cross sets.
		316/22 E
M78		Sandstone: light/medium grey, fine-to medium-grained, large-scale cross-stratification, 7.5m exposure and below this is a huge recessive area.
		340/18 E

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SHEET 21

STATION	UNIT	DESCRIPTION	
M79		Sandstone: typically of fluvial attributes.	
		178/10 E	
M80		Sandstone: slightly buff/orange weathering, fine-grained, thinly-bedded, some rootlets, calcareous.	
		205/17 E	
M81		Sandstone: orange weathering, fine-grained, strongly calcareous, 6.7 in total exposure.	
		305/35 SW ?Anticline	
M82		Sandstone: orange weathering, ripple-drifted, very thinly-bedded, 2 m thick exposure.	
		295/14 W	
M83		Sandstone: medium to coarse-grained, fluvial characteristics.	
		323/35 W	
M84		Sandstone: deep orange weathering, fine-grained, a small exposure	
		reliability not guaranteed although a few tiny exposures further along	

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SHEET 22

STATION	UNIT	DESCRIPTION	
		exhibit dips to the east.	
		325/22 E (into the hill)	
M85		Shales: dark grey with delicate fine parallel silty laminae.	
		210/8 E (into the hill)	
M86		Sandstone: thinly-bedded, orange weathering, one rootlet, fine-grained, strongly calcareous.	
		345/18 E	
M87		Sandstone: fine-to very fine-grained, medium grey, argillaceous, non calcareous. Exposure 1.5 m thick.	
		225/14 E (into the hill)	
M88		Sandstone: huge exposure of coarse-grained sandstone with interrelations of gritstones - 0.3 to 0.45 m thick; large-scale cross-stratification, undoubtedly fluvial.	
		273/20 E (into the hill)	

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SHEET 23

STATION	UNIT	DESCRIPTION
M89		Sandstone: thickly-bedded to massive with large-scale cross-bedding, fluvial. 320/41 E
M90		Sandstone: orange weathering, thinly-bedded, fine-grained, strongly calcareous, locally with small-scale cross-lamination, tiny exposure. 318/25 SW
M91		Sandstone: sandstone: medium-grained with dominance of dark grains (presumably cherts), clean, non calcareous, cross-bedded, fluvial attributes. 1.5 m thick laterally traceable exposure. 309/26 SW
M92		Sandstone: thinly-bedded, very fine-grained, very small-scale cross- lamination, somewhat rusty, calcareous. 310/30 SW
M93		Sandstone: medium grey, medium-grained, clean, large-scale cross bedding. (angle exposure and laterally traceable for a fair distance. Orange species in matrix but essentially noncalcareous.

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SHEET 24

STATION	UNIT	DESCRIPTION	
M94		Sandstone: more correctly Orthoquartzite, very resistant, it should be traceable on airphotos clean, fine-grained 5.66 m true thickness. 310/41 SW.	
M95		Between 94 and 95 is a distinctly recessive zone and covered but at M95 there is a very familiar lithology comprising very fine-grained sandstones and siltstones (both non-calcareous) and the bedding is no more than 1.5 m thick and the exposures have horizontal plates, small-scale cross-lamination, vertical worm tubes. These siltstones/sandstones overlain by grey papery shales - a sequence encountered elsewhere in the vicinity of other orthoquartzite bed. 295/38 W.	
M96		Sandstone: medium- to coarse-grained, fine chert pebbles on some bedding planes, large trough cross-sets; 5 m thick exposure laterally traceable. 325/42 SW.	
M97		Sandstone: thinly-bedded, orange weathering, small-scale cross-lamination,	

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STATION	UNIT	DESCRIPTION
M97 (cont)		calcareous, fine-grained. A small exposure. 312/26 SW.
M98		Sandstone: medium-grained fluvial sandstones with very low-angle cross-stratification, orange specks in matrix and strongly calcareous, sporadic rusty weathering pebbles of dense muddy lithology, small orange specks and impressions left on sandstone surface due to the removal of orange grains. This bold exposure, 4.5 - 5.5 m thick and laterally traceable. 248/12 SW.
M99		Sandstone: very thinly-bedded, orange weathering, very fine-grained, strongly calcareous, small-scale cross-lamination; shells in one specimen. 275/13SW.
M100		Sandstone: thinly-bedded, very fine-grained, parallel to low-angle small-scale cross-lamination. 5 to 6 m thick exposure laterally continuous. The saddly area, uphill, appears to be occupied by this lithology - note the lithology is not orange weathering. Some 15 to 20 cm thick, carbona-

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STATION	UNIT	DESCRIPTION	
M100 (cont)		aceous shales with stringers of bright coal.	
		297/22 SW.	
M101		Sandstone: medium grey, medium-grained, cross-bedded, patchily calcareous	
		3 m thick exposure with some trough cross-bedding.	
		330/15 SW.	
M102		Sandstone: medium-grained, clean, large troughs filled with pebbles and	
		cobbles (occupying only the deepest parts of the channels), abundance of	
		orange coloured grains in the matrix; non-calcareous. A large ledge of	
		exposure, laterally continuous.	
		183/10 E. (into the Hill)	
M103		Sandstone: thinly-bedded, very fine-grained, orange weathering, laminated,	
		strongly calcareous. 285/12 E. (into the Hill)	
M104		Sandstone: medium-grained, clean, cross-bedded, slightly calcareous.	
		335/18 SW.	

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STATION	UNIT	DESCRIPTION	
M105		Sandstone: fine to medium-grained, planar status and wedge-shaped sets, excellently preserved. 307/16 W.	
M106		Sandstone: fine to medium-grained, the sands decayed into ferruginous rubble. Abundance of trough cross-bedding, advance of cross-sets in many directions, thin locally giving the impression of dip reversal. 340/24 W.	
M107		Sandstone: buff weathering, thickly-bedded (2 to 6 cm), very fine- to fine-grained, finely laminated; a small but reliable exposure. 178/15 W.	
M108		Sandstone: 3.5 m exposure, lower beds with low-angle wavy lamination and the remainder with very small-scale cross-sets - 10 to 12 cm thick, these followed by relatively longer and flatter. The lithology very fine-grained, clean, laminated and seen elsewhere (the surfaces are uneven and rippled). 343/28 W., 326/28 W., 287/23 W.	

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SHEET 28

STATION	UNIT	DESCRIPTION	
M109		Sandstone: buff weathering, thinly-bedded, fine-grained, strongly calcareous, rootlets, orange weathering, lower unit 1.5 m thick and fine- to medium-grained, some with deep orange weathering.	
		325/15 W.	
M110		Sandstone: medium-grained, small sporadically traceable exposure, cross-bedded on large-scale, abundance of orange grains in matrix.	
		352/25 W.	
M111		Sandstone: thickly-bedded, medium- to coarse-grained, pockets of small pebbles on bedding and locally conglomeratic - clean looking.	
		200/23 E., 232/13 E.	
M112		Sandstone: orange weathering to buff, fine-grained, occasionally rooty, wavy low-angle cross-laminated at 5 to 10°; exposure unreliable for measurements?	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST Ali Chowdry

DATE _____

SHEET 29

STATION	UNIT	DESCRIPTION	
M113		Sandstone: medium grey, (freshly broken), grey to brown weathering,	
		fine-grained, laminated rootlets, thinly-bedded.	
		346/11 E.	
M114		Sandstone: Orthoquartzite, medium to coarse-grained, siliceous, cross-	
		bedded, sugery texture? porous.	
		158/58 W.	
M115		Sandstone: medium-grained, fluvial, clean, rooty, grey weathering, thin	
		platy bedding. 142/53 SW.	
M116		Sub-crop of very thinly-bedded, brown to orange weathering, very fine-	
		grained, silty rooty, sandstone with carbonaceous laminae. Small-scale	
		troughs. 130/77 SW.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Merrick BlockGEOLOGIST David J. StandringDATE 8 July 1980SHEET 1

STATION	UNIT	DESCRIPTION
M201		Sandstone, orange to brown, light brown to black weathering, fine-grained medium irregular bedded, non-calcareous.
		STRIKE: 204/DIP: 10° S.E.
M202		Sandstone, orange to brown, light brown to black weathering, fine-grained, fine bedded to thick bedded, slightly calcareous.
		STRIKE: 225/DIP: 30° S.W.
M203		Sandstone, brown to light brown, light brown to black weathering, fine- grained, thin bedded (flaggy) to thick bedded, calcareous.
		STRIKE: 290/DIP: 20° S.
M204		Sandstone, brown to light brown, brown weathering, fine to medium-grained, appears to be medium bedded, no definite strike and dip, possible, however there appears to be a S.E. dip.
M205		Sandstone and Siltstone interbeds: Sandstone, light brown to light grey, buff weathering fine to medium-

I.L.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

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SHEET 2

STATION	UNIT	DESCRIPTION	
		grained, cherty, irregular thin bedded (rubbly) to thick bedded (blocky) calcareous, minor shearing and jointing throughout this 3 m exposure.	
		Siltstone, dark grey to black, black weathering, rubbly, minor bright coal shards, very carbonaceous as a whole.	
		STRIKE: 187/DIP: 36° E.	
M206		Conglomerate, green grey, green grey weathering, coarse cherty sand matrix, pebbles and cobbles, sub-rounded to sub-angular, cherts and quartzites, ill-sorted, non-calcareous, 8 - 10 cm exposure, exhibits abundant slickensides, shearing, and jointing.	
		STRIKE: 291/DIP: 83° S.W.	
M207		Conglomerate, as above, again severely disturbed, 1 - 5 m exposure.	
		STRIKE: 305/DIP 65° S.W.	
M208		Conglomerate, with Sandstone interbeds.	
		Conglomerate, as in M206.	

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TRAVERSE NOTES

PROPERTY Merrick BlockGEOLOGIST David J. StandringDATE 8 July 1980SHEET 3

STATION	UNIT	DESCRIPTION
		Sandstone, grey, buff grey weathering, medium-grained, thin bedded, irregular, non-calcareous, *within larger conglomerate body.
		STRIKE: 323/DIP: 75° S.W.
M209		Sandstone, tan to buff, buff weathering, fine-grained, thin, irregular bedded, very calcareous, minor carbonaceous debris.
		STRIKE: 327/DIP: 50° S.W.
M210		Conglomerate, green grey, green grey weathering, coarse chert sand matrix, ill-sorted, pebbles and cobbles, sub-rounded to sub-angular cherts and quartzites, non-calcareous.
M211		Sandstone, brown to brown grey, grey weathering, fine-grained, cherty, thin irregular, bedded, non-calcareous, jointing and shearing evident, minor slickensides.
M212		Sandstone, brown to buff, grey brown weathering, fine-grained, thin irregular bedded, very calcareous, minor carbonaceous rootlets, jointed and sheared.
		STRIKE: 329/DIP: 74° S.W.

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TRAVERSE NOTES

PROPERTY Merrick BlockGEOLOGIST David J. StandringDATE 10 July 1980SHEET 4

STATION	UNIT	DESCRIPTION	
M213		Sandstone, buff, grey weathering, medium to very coarse-grained, fine to medium bedded, very calcareous, some low angle corss-bedding.	
		STRIKE: 318/DIP: 58 ^o S.W.	
M214		Sandstone, grey brown, grey to rust brown weathering, fine-grained, fine to thick bedded, fine beds rubbly, thick beds blocky, grey weathering-non-calcareous, rust brown-very calcareous.	
		STRIKE: 309/DIP: 52 ^o S.W.	
M214A		Coal Bloom - in creek adjacent to M214.	
M215		Sandstone, grey to orange brown, tan to rust tan weathering, medium-grained, thin irregular bedded, very calcareous, minor bright coal shards.	
		STRIKE: 321 /DIP: 75 ^o S.W.	
M216		Coal Bloom.	
M217		Coal Bloom, part of the seam is exposed, at least 2 m. thick.	

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TRAVERSE NOTES

PROPERTY Merrick BlockGEOLOGIST David J. StandringDATE 12 July 1980SHEET 5

STATION	UNIT	DESCRIPTION
M218		Conglomerate, green grey, grey weathering, coarse chert sand matrix, pebbles sub-rounded, cherts and quartzite 0.2 cm to 3 cm in diameter, non-calcareous, outcrop shows signs of disturbance, some minor slickensides.
		STRIKE: 182/DIP: 40° W.
M219		Sandstone, brown to buff, buff to rusty buff weathering, fine-grained, fine to medium irregular bedded, rubbly, very calcareous.
		STRIKE: 327/DIP: 44° S.W.
M220		Sandstone with Conglomerate interbeds.
		Sandstone, grey, grey weathering, medium to coarse-grained, thick bedded, pebbly, non-calcareous.
		Conglomerate, matrix of above, pebbles of chert 0.2 cm to 0.5 cm in diameter.
		STRIKE: 354/DIP: 71° S.W.
M221		Coal Bloom, appears to be approximately 2 m thick dipping at 55° plus to the S.W.

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TRAVERSE NOTES

PROPERTY Merrick BlockGEOLOGIST David J. StandringDATE 12 July 1980SHEET 6

STATION	UNIT	DESCRIPTION
M222		Sandstone, (1) grey, grey weathering, fine to medium-grained, thin to medium irregular bedded, non-calcareous, abundant plant impressions.
		(2) grey to grey brown, rusty orange weathering fine to medium-grained, fine to thin bedded, very calcareous.
		STRIKE: 309/DIP: 71 S.W.
M223		Sandstone, grey to grey brown, tan to buff weathering, fine-grained, fine to thin irregular bedded, very calcareous, minor carbonaceous debris throughout.
		STRIKE: 314/DIP: 59° S.W.
M224		Conglomerate and Sandstone:
		Conglomerate, classic Cadomin, green grey, grey weathering, cherty matrix, chert and quartzite clast, ill sorted.
		Sandstone, grey, grey weathering, medium-grained, thin to medium bedded, cherty, non-calcareous, low angle cross-bedding evident.
		STRIKE: 311/DIP: 65° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standing

DATE 12 July 1980

SHEET 7

STATION	UNIT	DESCRIPTION
M225		Coal Bloom, approximately 60 cm to 1 m thick, clean bright coal.
M226		Sandstone, grey to grey brown, tan to grey weathering, fine-grained, thin to medium bedded, very calcareous. STRIKE: 311/DIP: 63° S.W.
M227		Coal Bloom with Sandstone outcrop. Sandstone, grey to grey brown, grey to rust tan weathering, fine to thin bedded, rubbly, grey weathering is non-calcareous, rust tan weathering is very calcareous.
		Coal Bloom, needs to be trenched to determine the extent of coal.
M228		Coal Bloom, approximately 3 m thick, dipping 50° plus to the S.W.
M229		Coal Bloom, approximately 3½ m thick again dipping steeply to the S.W. *different seam than M228.
M230		Coal Bloom, minor seam, needs trenching to determine the extent.

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TRAVERSE NOTES

PROPERTY Merrick BlockGEOLOGIST David J. StandringDATE 12 July 1980SHEET 8

STATION	UNIT	DESCRIPTION
M231		Coal Bloom, Sandstone roof and floor.
		Floor - Sandstone, brown, brown weathering, fine-grained, fine to medium bedded, rubbly, calcareous.
		Coal, small seams 60 cm with a mudstone parting then 30 cm more coal.
		Roof - Sandstone, grey, grey weathering, medium to coarse-grained, medium bedded to massive, non-calcareous, abundant orange grains throughout.
		STRIKE: 316/DIP: 56° S.W.
M232		Sandstone, grey, grey to light brown weathering, medium to coarse-grained, medium to thick bedded, calcareous, abundant orange grains throughout.
		STRIKE: 323/DIP: 52° S.W.
M233		Sandstone, grey, grey to brown weathering, medium to coarse-grained, medium to thick bedded, low angle cross-bedding evident, calcareous.
		STRIKE: 313/DIP: 44° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 12 July 1980

SHEET 9

STATION	UNIT	DESCRIPTION
M234		Coal Seam with Sandstone roof and floor.
		Floor - Sandstone, brown, brown weathering fine-grained, thin bedded, slightly calcareous.
		Coal - approximately 1 - 1½ m thick, hard bright, clean coal.
		Roof - Sandstone, grey to brown, brown weathering, medium-grained, medium bedded, slightly calcareous.
		STRIKE: 311/DIP: 55° S.W.
M235		Coal Seam with Sandstone roof, mudstone floor.
		Floor - Mudstone, dark brown to black brown, dark brown weathering rubbly, slightly calcareous.
		Coal - approximately 1 m thick, bright shiny, clean, no partings.
		Roof - Sandstone, grey, grey to brown weathering, medium-grained, thick bedded, non-calcareous, outcrop exhibits jointing, shearing and minor slickensides.
		STRIKE: 317/DIP: 37° S.W.
M236		Coal Bloom, seam approximately 3 to 4 m thick, will need trenching to determine roof and floor.

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

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SHEET 10

STATION	UNIT	DESCRIPTION
M237		Sandstone, grey brown, brown weathering, fine-grained, fine to thick bedded, non-calcareous, carbonaceous rootlets throughout. STRIKE: 295/DIP: 47° S.W.
M238		Coal Bloom, the seam appears to be approximately 1 - 1½ m thick, will need trenching to determine actual extent.
M239		Sandstone, dark grey, tan to buff weathering, fine-grained, appears to be medium-bedded, non-calcareous. * within a distance of 3 m the Strike and Dip changes from: STRIKE: 300/DIP 47° S.W. 297/DIP 69° N.E.
M240		Sandstone, grey to light brown, tan to buff weathering, medium to coarse grained, thin to thick irregular bedded, non-calcareous, abundant orange grains throughout. STRIKE: 313/DIP: 46° N.E.

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TRAVERSE NOTES

PROPERTY Merrick Block

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SHEET 11

STATION	UNIT	DESCRIPTION	
M241		Coal Seams associated with Sandstone.	
		Coal - (lower) 60 cm thick, clean bright coal.	
		(upper) 30 cm thick, clean bright coal.	
		Sandstone, brown, brown weathering, fine-grained, thin bedded,	
		rubbly, slightly calcareous.	
		STRIKE: 330/DIP: 57° N.E.	
M242		Sandstone, brown, brown weathering, fine-grained, thin to medium-bedded,	
		irregular, calcareous.	
M243		Sandstone, brown, dark brown weathering, fine-grained, argillaceous,	
		thin to thick bedded, non-calcareous, minor carbonaceous debris.	
		STRIKE: 306/DIP: 79° N.E.	
M244		Sandstone, brown to grey, buff weathering, fine-grained, medium to thick	
		bedded, very calcareous.	
		STRIKE: 295/DIP: 54° N.E.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

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SHEET 12

STATION	UNIT	DESCRIPTION	
M245		Sandstone, grey to brown, buff weathering, fine-grained, thin to medium	
		bedded, calcareous.	
		STRIKE: 330/DIP: 23° S.W.	
M246		Sandstone, brown to grey, buff brown weathering, fine-grained, thick	
		bedded to massive, irregular, very calcareous.	
		STRIKE: 309/DIP: 32° S.W.	
M247		Sandstone, dark brown to grey, buff to brown weathering, medium-grained,	
		medium to thick bedded, non-calcareous.	
		STRIKE: 192/DIP: 43° W.	
M248		Conglomerate, green grey, green grey weathering, chert sand matrix,	
		pebbles of chert and quartzite, sub-angular to sub-rounded up to 4 cm	
		in diameter, non-calcareous.	
M249		Sandstone, grey to light brown, grey brown weathering, medium-grained,	
		medium to thick bedded, calcareous, orange grains throughout.	
		STRIKE: 324/DIP: 47° S.W.	

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TRAVERSE NOTES

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SHEET 13

STATION	UNIT	DESCRIPTION
M250		Coal Bloom associated with Sandstone.
		Sandstone, light brown to tan, tan weathering, fine-grained, argillaceous, medium bedded, calcareous.
		STRIKE 320/DIP: 70° S.W.
		Coal - minor bloom will need trenching to determine extent.
M251		Coal Bloom, the seam is approximately 2 m thick, clean, bright, shiny, coal.
M252		Coal Bloom, approximately 2 m thick, possibly the same seam as M251.
		STRIKE: 324/DIP: 47° S.W.
M253		Coal Bloom, approximately a 3½ meter thick seam.
		50° plus dip.
M254		Sandstone, light brown to buff, tan to rusty tan weathering, fine-grained argillaceous, medium, irregular bedded, calcareous.
		STRIKE: 318/DIP: 82° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

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DATE 13 July 1980

SHEET 14

STATION	UNIT	DESCRIPTION	
M255		Sandstone, tan to light brown, rusty tan to grey weathering, fine-grained	
		argillaceous, thin to medium bedded, tan weathering is calcareous,	
		grey weathering, non-calcareous.	
		STRIKE: 312/DIP: 66° S.W.	
M256		Coal Seam with Sandstone roof and floor.	
		Floor - Sandstone, tan, tan to buff weathering, fine-grained, thin	
		to medium bedded, very calcareous.	
		Coal - approximately 2 m thick, dull lustre, with 15 cm band of	
		hard, bright, clean coal.	
		Roof - Sandstone, brown, brown, to buff weathering, fine-grained,	
		thick bedded, non-calcareous.	
		STRIKE: 307/DIP: 67° S.W.	
M257		Coal Seam with Sandstone roof and floor.	
		Floor - Sandstone, grey to brown, grey weathering, medium-grained,	
		thin to medium bedded, irregular, slightly calcareous.	
		Coal ⁽¹⁾ 60 cm thick, 30 cm hard, bright, clean, 30 cm dull lustre, clean.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 13 July 1980

SHEET 15

STATION	UNIT	DESCRIPTION	
M257 (cont)		(2) 30 cm thick dull lustre, clean.	
		Roof - Sandstone, brown, brown weathering, thin to medium bedded,	
		calcareous.	
		STRIKE: 312/DIP: 56° S.W.	
M258		Sandstone, grey to brown, brown weathering, medium-grained, thin to	
		medium bedded, slightly calcareous.	
		STRIKE: 322/DIP: 65° S.W.	
M259		Sandstone, grey, grey weathering, coarse-grained, thin to thick bedded,	
		slightly calcareous.	
		STRIKE: 314/DIP: 66° S.W.	
M260		Sandstone, grey to grey brown, buff to light grey weathering, fine-	
		grained, thin bedded to massive, irregular 5 m exposure.	
		STRIKE: 315/DIP: 42° S.W.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 13 July 1980

SHEET 16

STATION	UNIT	DESCRIPTION	
M261		Coal Bloom with Sandstone roof and floor.	
		Floor - Sandstone, brown, brown weathering, fine-grained, thin to	
		medium bedded.	
		Coal - approximately 1 m thick, bright, clean.	
		Roof - same as the floor.	
		STRIKE: 316/DIP: 50° S.W.	
M262		Coal Bloom, three seams exposed, 30 - 60 cm thick clean, bright, hard	
		coal.	
		STRIKE: 319/DIP: 49° S.W.	
M263		Sandstone, grey to brown, brown to dark grey weathering, fine to medium	
		grained, medium bedded to massive, calcareous.	
		STRIKE: 314/DIP: 57° S.W.	
		* 8 m exposure creates a waterfall!	
M264		Coal Seam exposure;	
		4 seams, 30, 50, 10, 20 cm all hard, bright clean.	

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TRAVERSE NOTES

PROPERTY Merrick Block

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SHEET 17

STATION	UNIT	DESCRIPTION	
M264 (cont)		Sandstone, between seams, brown, brown weathering, fine-grained,	
		argillaceous, medium bedded, calcareous.	
		STRIKE: 313/DIP: 65° S.W.	
M265		Sandstone, brown, buff brown to grey weathering, fine-grained, fine to	
		thick bedded, calcareous, low angle cross-bedding.	
		STRIKE: 312/DIP: 51° S.W.	
M266		Sandstone, brown to brown grey, brown to rust weathering, fine-grained,	
		fine to medium bedded, slightly calcareous.	
		STRIKE: 316/DIP: 54° S.W.	
M267		Sandstone, brown to brown grey, brown weathering, fine-grained, fine	
		to medium bedded, calcareous.	
		STRIKE: 323/DIP: 47° S.W.	
M268		Sandstone, brown to brown grey, grey to brown weathering, coarse-grained,	
		thin to medium bedded, non-calcareous, abundant orange grains throughout.	
		STRIKE: 305/DIP: 42° S.W.	

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TRAVERSE NOTES

PROPERTY Merrick Block

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SHEET 18

STATION	UNIT	DESCRIPTION	
M269		Sandstone, as above, associated with,	
		Sandstone, brown, brown weathering, fine to medium-grained, thin to	
		medium bedded, very calcareous.	
		STRIKE: 316/DIP: 64° S.W.	
M270		Coal Bloom unable to determine size without trenching, appears to be 1 m	
		plus.	
M271		Sandstone, brown to orange brown, grey weathering, medium to coarse-	
		grained, thin to medium bedded, non-calcareous, low angle cross-bedding.	
		STRIKE: 340/DIP: 70° S.W.	
M272		Sandstone, brown, buff weathering, very fine-grained, argillaceous, fine	
		to thin bedded, non-calcareous.	
		STRIKE: 319/DIP: 58° S.W.	
M273		Sandstone, brown to grey, brown weathering, fine-grained, thin bedded,	
		non-calcareous.	

STRIKE: 331/DIP: 60° S.W.

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TRAVERSE NOTES

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SHEET 19

STATION	UNIT	DESCRIPTION	
M274		Sandstone, brown to tan, brown weathering, very fine to fine-grained, argillaceous, thin bedded, low angle cross-bedding, carbonaceous rootlets.	
		STRIKE: 332/DIP: 55° S.W.	
M275		Sandstone, buff brown, buff to grey brown weathering, fine to medium-grained, medium irregular bedded, calcareous.	
		STRIKE: 328/DIP: 56° S.W.	
M276		Sandstone, buff, brown weathering, very fine-grained, argillaceous, muddy stringers, thin bedded to medium bedded, very calcareous.	
		STRIKE: 326/DIP: 59° S.W.	
M277		Sandstone, brown, brown weathering, very fine to fine-grained, thin irregular bedded, calcareous, abundant orange grains throughout.	
		STRIKE: 332/DIP: 44° S.W.	
M278		Sandstone, grey to brown, brown weathering, medium to coarse-grained, thick bedded, non-calcareous.	

STRIKE: 324/DIP: 56° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

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SHEET 20

STATION	UNIT	DESCRIPTION	
M279		Sandstone, brown, brown weathering, medium-grained, fine to thin bedded,	
		very calcareous, low angle cross-bedding.	
		STRIKE: 307/DIP: 34° S.W.	
M280		Exposed Coal Seam with Sandstone roof.	
		Coal - approximately 50 cm, hard, clean, bright.	
		Sandstone, buff brown, brown weathering, very fine to fine-grained,	
		thin bedded, irregular, non-calcareous.	
		STRIKE: 269/DIP: 34° N.	
M281		Sandstone, brown to tan, brown weathering, fine-grained, thin to thick	
		bedded, non-calcareous, corss-bedding.	
		STRIKE: 296/DIP: 23° N.E.	
M282		Sandstone, as above.	
		STRIKE: 302/DIP: 34° N.E.	
M283		Sandstone, brown to tan, brown weathering, very fine-grained, thin to	

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TRAVERSE NOTES

PROPERTY Merrick Block

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SHEET 21

STATION	UNIT	DESCRIPTION
M283 (cont)		medium bedded, very calcareous, carbonaceous rootlets.
M284		Sandstone, brown, brown weathering, fine-grained thin bedded, calcareous cross-bedding.
M285		Limestone, light grey weathering, fine to medium bedded. STRIKE: 314/DIP: 52° S.W.
M286		Sandstone, buff, grey to buff weathering, medium-grained, medium bedded, non-calcareous, badly distrubed. STRIKE: 274/DIP: 38° S.
M287		Sandstone, rust brown, buff weathering, very fine to fine-grained, fine to medium bedded, very calcareous. STRIKE: 304/DIP: 48° S.W.
M288		Sandstone, buff, grey to brown weathering, fine-grained, thin to medium bedded, very calcareous. STRIKE: 184/DIP: 48° W.

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 20 July 1980

SHEET 22

STATION	UNIT	DESCRIPTION	
M289		Sandstone, dark grey to tan, grey weathering, medium-grained, appears to be medium bedded, non-calcareous, outcrop is badly disturbed, slickensides evident.	
		underlain by:	
		Conglomerate, dark grey, green grey weathering, very coarse-grained sand matrix of above, pebbles of chert, 0.1 cm to 0.3 cm, non-calcareous.	
		STRIKE: 180/DIP: 52° W.	
		Conglomerate, dirty grey, grey weathering, grey sand matrix, silicious, ill sorted, clasts are sub-angular to sub-rounded, cherts, quartzite, and minor quartz, 1 cm to 10 cm, abundant slickensides evident.	
		Sandstone, dark grey, dark brown weathering, very fine-grained, thin to medium irregular bedded, slightly calcareous.	
		STRIKE: 290/DIP: 70° S.W.	
		Sandstone, tan to light brown, brown weathering, fine-grained, thin to medium bedded, calcareous, minor cross-bedding.	

STRIKE: 324/DIP: 79° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

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DATE 20 July 1980

SHEET 23

STATION	UNIT	DESCRIPTION	
M293		Sandstone, light brown to tan, tan to grey weathering, fine-grained, fine bedded to massive, calcareous, severe disturbance evident. STRIKE: 308/DIP: 66° S.W.	
M294		Sandstone, dark brown, very fine-grained, silty, fine to thin bedded, rubbly, calcareous. STRIKE: 300/DIP: 66° S.W.	
M295		Sandstone, grey to light brown, brown weathering, fine-grained, argillaceous, thin to medium bedded, calcareous. STRIKE: 315/DIP: 78° S.W.	
M296		Sandstone, tan, buff weathering, very fine to fine-grained, fine to thin bedded, calcareous. STRIKE: 296/DIP: 66° S.W.	
M297		Sandstone, as above. STRIKE: 286/DIP: 56° S.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 20 July 1980

SHEET 24

STATION	UNIT	DESCRIPTION
M298		Siltstone, dark brown, brown to buff weathering, fine to thin bedded, slightly calcareous, rubbly.
		STRIKE: 280/DIP: 69° S.
M299		Coal Seam with Mudstone roof, floor no visible. Coal - up to 1 m thick. Mudstone - dark grey, dark grey weathering, rubbly.
M300		Sandstone, tan to grey, buff weathering, fine-grained, thin irregular bedded, calcareous, flaggy. STRIKE: 319/DIP: 59° S.W.
M301		Sandstone, dark brown, dark brown weathering, very fine to fine-grained, Medium irregular bedded, non-calcareous, outcrop is severely disturbed. STRIKE: 320/DIP: 45° S.W.
M302		Sandstone, grey to brown, grey weathering, medium to coarse-grained, thin to medium bedded, non-calcareous, abundant orange grains throughout. STRIKE: 330/DIP: 55° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 20 July 1980

SHEET 25

STATION	UNIT	DESCRIPTION
M303		Sandstone, as above. STRIKE: 330/DIP: 50° S.W.
M304		Sandstone, grey, brown weathering, fine to medium-grained, appears to be medium bedded, slightly calcareous. STRIKE: 319/DIP: 48° S.W.
M305		Sandstone, tan to brown, brown weathering, fine-grained, medium to thick bedded, slightly calcareous. STRIKE: 295/DIP: 27° S.W.
³⁰⁶ M206		Sandstone, as above, approximately 30° S.W. dip.
M307		Sandstone, dark brown, dark brown weathering, very fine to fine-grained, medium to thick bedded, non-calcareous. STRIKE: 310/DIP: 54° S.W.
M308		Sandstone, as above, thin to medium bedded. STRIKE: 254/DIP: 34° N.W.

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TRAVERSE NOTES

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STATION	UNIT	DESCRIPTION	
M309		Sandstone, light brown to orange brown, orange brown weathering,	
		medium-grained, fine to thin irregular bedded, flaggy, calcareous.	
		STRIKE: 275/DIP: 31° S.	
M310		Sandstone, light brown to grey, brown weathering, medium to coarse-grained	
		scattered pebbles, appears to be medium bedded, slightly calcareous.	
		STRIKE: 250/DIP: 41° N.W.	
M311		Sandstone, light brown to grey, brown weathering, medium to coarse-	
		grained, thin to medium bedded, slightly calcareous.	
		STRIKE: 355/DIP: 31° N.W.	
M312		Sandstone, light brown to tan, brown weathering, fine to medium-grained	
		medium bedded, slightly calcareous.	
		STRIKE: 203/DIP: 45° N.W.	

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STATION	UNIT	DESCRIPTION	
M313		Sandstone, light brown to orange brown, buff weathering, very fine-grained thin irregular bedded, very calcareous, flaggy to rubbly. STRIKE: 245/DIP: 14° S.E.	
M314		Sandstone, light brown to tan, brown to tan weathering, very fine to fine-grained, thin to medium irregular bedded, flaggy, very calcareous. STRIKE: 301/DIP: 10° N.E.	
M315		Sandstone, light brown to grey, grey weathering, fine to medium-grained, thin bedded, very calcareous, minor carbonaceous debris. STRIKE: 342/DIP: 25° N.E.	
M316		Sandstone, light brown, light brown weathering, fine to medium-grained, fine to medium bedded, very calcareous, cross-bedding in finer sequences. STRIKE: 350/DIP: 21° N.E.	
M317		Sandstone, light brown to grey, light brown to orange brown weathering, fine to medium-grained, fine to medium bedded, very calcareous. STRIKE: 285/DIP: 25° N.E.	

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STATION	UNIT	DESCRIPTION
M318		Sandstone, grey to brown, tan weathering, medium-grained, thin to medium bedded, flaggy, calcareous.
		STRIKE: 324/DIP: 38° N.E.
M319		Sandstone, light brown, dark brown weathering, fine-grained, thin to medium irregular bedded, very calcareous.
		STRIKE: 320/DIP: 35° N.E.
M320		Sandstone, buff, buff weathering, fine-grained, thin to thick bedded, calcareous.
		STRIKE: 344/DIP: 34° N.E.
M321		Mudstone, light grey, grey weathering, rubbly, very calcareous.
		overlain by:
		Sandstone, as above, M320.
M322		Sandstone, grey brown, brown weathering, fine to medium-grained, medium irregular bedded, slightly calcareous.
		STRIKE: 328/DIP: 7° N.E.

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TRAVERSE NOTES

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STATION	UNIT	DESCRIPTION	
M323		Sandstone, rusty brown to tan, buff brown weathering, very fine-grained,	
		medium to thick bedded, non-calcareous, abundant carbonaceous debris.	
		STRIKE: 299/DIP: 22° N.E.	
M324		Sandstone, tan to grey, buff weathering, medium to coarse-grained,	
		medium to thick bedded, non-calcareous.	
		STRIKE: 338/DIP: 5° N.E.	
M325		Sandstone, grey to light brown, grey to orange brown weathering, coarse	
		to very coarse-grained, thin bedded, grey weathering is non-calcareous,	
		orangish weathering is very calcareous, abundant low angle cross-beds.	
		STRIKE: 326/DIP: 12° N.E.	
M326		Sandstone, light brown, orange brown weathering, fine-grained, thin	
		bedded, calcareous, flaggy, minor cross-bedding.	
		STRIKE: 230/DIP: 13° N.W.	

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STATION	UNIT	DESCRIPTION	
M327		Sandstone, dark brown, dark brown weathering, very fine to fine-grained, thin irregular bedded, slightly calcareous. STRIKE: 280/DIP: 9° S.	
M328		Sandstone, light brown to grey, grey weathering, coarse-grained, thin to medium irregular bedded, slightly calcareous. STRIKE: 240/DIP: 11° N.W.	
M329		Sandstone, light brown to tan, tan weathering, fine to medium-grained, medium to thick bedded, very calcareous. STRIKE: 270/DIP: 10° S.	
M330		Sandstone, tan to medium grey, buff weathering, fine to medium-grained, thin to medium irregular bedded, slightly calcareous. STRIKE: 312/DIP: 22° S.W.	
M331		Sandstone, tan to light brown, tan to grey weathering, very fine-grained, silty, thin to medium bedded, very calcareous, carbonaceous debris. STRIKE: 255/DIP: 14° S.E.	

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STATION	UNIT	DESCRIPTION
M332		Sandstone, brown to grey, dark grey weathering, fine to medium-grained, medium to thick bedded, slightly calcareous.
		STRIKE: 315/DIP: 41° S.W.
M333		Sandstone, tan to dark brown, tan weathering, very fine-grained, silty fine bedded, slightly calcareous, rubbly.
		overlain by:
		Sandstone, tan to grey, buff grey weathering, medium-grained, thick bedded, very calcareous.
		STRIKE: 337/DIP: 61° S.W.
M334		Sandstone, light brown, tan weathering, very fine-grained, silty, fine to thin bedded, slightly calcareous, flaggy to rubbly, carbonaceous rootlets.
		STRIKE: 306/DIP: 62° S.W.
M335		Sandstone, tan to light grey, buff to orangish weathering, fine to medium-grained, thin to medium bedded, very calcareous.
		STRIKE: 182/DIP: 27° E.

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STATION	UNIT	DESCRIPTION	
M336		Sandstone, light brown to grey brown, buff weathering, fine-grained, thin to medium bedded, calcareous, carbonaceous rootlets. STRIKE: 300/DIP: 41° S.W.	
M337		Sandstone, dark brown, dark brown weathering, fine-grained, thin to medium irregular bedded, non-calcareous. STRIKE: 323/DIP: 43° N.E.	
M338		Sandstone, grey to light brown, grey brown weathering, medium to coarse grained, medium irregular bedded, very calcareous. STRIKE: 302/DIP: 24° S.W.	
M339		Sandstone, tan to grey, tan weathering, fine-grained, thin to medium irregular bedded, very calcareous. STRIKE: 220/DIP: 15° S.E.	

TRAVERSE NOTES

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STATION	UNIT	DESCRIPTION
M340		Sandstone, light brown, red brown weathering, medium-grained, thin to medium bedded, very calcareous, flaggy, cross-bedding evident.
		STRIKE: 243/DIP: 27° S.E.
M341		Sandstone, light brown, buff to light brown weathering, medium-grained, thin bedded, very calcareous, flaggy, cross-bedding evident.
		STRIKE: 345/DIP: 11° N.E.
M342		Sandstone, light brown, red brown weathering, medium-grained, thin to medium bedded, calcareous.
		STRIKE: 293/DIP: 17° N.E.
M343		Sandstone, light brown to grey, grey weathering, very coarse-grained, thin bedded, non-calcareous.
		STRIKE: 346/DIP: 16° S.W.
M344		Sandstone, brown, brown weathering, fine-grained, thin bedded, non-calcareous.

STRIKE: 187/DIP: 19° E.

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SHEET 34

STATION	UNIT	DESCRIPTION	
M345		Sandstone, tan to grey, brown weathering, fine to medium-grained, thick	
		bedded, slightly calcareous, minor disturbance evident.	
		STRIKE: 321/DIP: 61° N.E.	
M346		Sandstone, red brown, tan to dark grey weathering, coarse-grained,	
		massive, very calcareous.	
		STRIKE: 315/DIP: 70° N.E.	
M347		Sandstone, grey to dark brown, dark brown weathering, very fine-grained	
		fine to thin bedded, very calcareous.	
		STRIKE: 309/DIP: 41° N.E.	
M348		Sandstone, brown, brown weathering, coarse-grained, thick bedded, non-	
		calcareous.	
		STRIKE: 321/DIP: 57° N.E.	

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SHEET 35

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STATION	UNIT	DESCRIPTION	
M349		Sandstone, grey, grey weathering, coarse-grained, medium to thick bedded, slightly calcareous, Mudstone clasts throughout. STRIKE: 306/DIP: 41° N.E.	
M350		Sandstone, dark brown, dark brown weathering, fine to medium-grained fine to thin bedded, slightly calcareous. STRIKE: 325/DIP 56° S.W. * ripples and plant roots evident.	
M351		Sandstone, dark grey to tan, grey to red brown weathering, medium to coarse-grained, thick bedded, non-calcareous, cross-bedding. STRIKE: 333/DIP: 57° S.W. * outcrop is very contorted, bedding broken, and glacially eroded.	
M352		Sandstone, brown grey, grey weathering, coarse-grained, thin to thick bedded, non-calcareous, cross-bedding. STRIKE: 325/DIP: 45° S.W.	

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STATION	UNIT	DESCRIPTION
M353		Sandstone, tan to light brown, tan weathering, fine-grained, thin bedded, very calcareous.
		STRIKE: 330/DIP: 60° S.W.
M354		Sandstone, tan, grey weathering, medium to coarse-grained, thin to medium bedded, non-calcareous.
		STRIKE: 315/DIP: 64° S.W.
M355		Sandstone, grey brown, grey weathering, medium-grained, thin bedded to medium bedded, non-calcareous, minor cross-bedding.
		STRIKE: 315/DIP: 59° S.W.
M356		Sandstone, light brown, grey weathering, fine-grained, thin irregular bedded, non-calcareous.
M357		Sandstone, tan to light brown, grey weathering, fine-grained, thin to medium bedded, irregular, non-calcareous.
		STRIKE: 303/DIP: 12° S.W.

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SHEET 37

STATION	UNIT	DESCRIPTION	
M358		Sandstone, tan, grey to buff weathering, fine-grained, thin bedded, buff weathering is very calcareous, grey weathering is non-calcareous. STRIKE: 309/DIP: 16° S.W.	
M359		Sandstone, grey, grey weathering, coarse-grained, thin bedded, slightly calcareous, cross-bedding, orange grains throughout. STRIKE: 325/DIP: 71° S.W.	
M360		Sandstone, brown, buff to light brown weathering, fine-grained, argillaceous, thin to medium bedded, non-calcareous. STRIKE: 275/DIP: 13° S.	
M361		Sandstone, tan, red brown to tan weathering, fine-grained, fine to thin irregular bedded, very calcareous. STRIKE: 325/DIP: 26° S.W.	
M362		Sandstone, buff, buff weathering, very fine-grained, fine to thin bedded, non-calcareous. STRIKE: 323/DIP: 30° S.W.	

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SHEET 38

STATION	UNIT	DESCRIPTION	
M363		Sandstone, dark grey, buff to light grey weathering, medium-grained, thin bedded, very calcareous. STRIKE: 305/DIP: 36° S.W.	
M364		Sandstone, grey to brown, grey weathering, medium to coarse-grained, thin to medium bedded, non-calcareous. STRIKE: 319/DIP: 26° S.W.	
M365		Sandstone, grey to brown, grey weathering, coarse-grained, thin to thick bedded, non-calcareous. STRIKE: 304/DIP: 17° S.W.	
M366		Sandstone, grey to brown, tan to light grey weathering, medium to coarse-grained, fine to thin bedded, slightly calcareous. flaggy. STRIKE: 325/DIP: 12° N.E.	
M367		Sandstone, brown, tan to dark brown weathering, very fine to fine-grained thin bedded, calcareous, cross-bedding. STRIKE: 320/DIP: 40° N.E.	

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STATION	UNIT	DESCRIPTION
M368		Sandstone, brown to dark grey, brown weathering, medium-grained, medium bedded, slightly calcareous. STRIKE: 328/DIP: 31° N.E.
M369		Sandstone, light brown to tan, dark brown weathering, fine to medium-grained, thick bedded, slightly calcareous.
M370		Sandstone, as above. STRIKE: 330/DIP: 33° N.E.
M371		Sandstone, tan to light brown, dark brown weathering, fine to medium-grained, thick bedded, calcareous. STRIKE: 294/DIP: 26° S.W.
M372		Sandstone, buff, buff to light brown weathering, very fine-grained, silty fine to thin bedded, calcareous. STRIKE: 320/DIP: 40° S.W.

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TRAVERSE NOTES

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STATION	UNIT	DESCRIPTION	
M373		Sandstone, light brown, buff brown to black weathering, fine-grained,	
		fine to medium bedded, calcareous.	
		STRIKE: 279/DIP: 17° S.	
M374		Sandstone, light brown to grey, buff brown weathering, medium-grained,	
		medium to thick bedded, slightly calcareous.	
		STRIKE: 330/DIP: 26° N.E.	
M375		Sandstone, light brown, grey weathering, coarse-grained, thin to medium	
		bedded, non-calcareous.	
M376		Sandstone, dark brown, dark brown to red brown weathering, medium-grained	
		thin to medium irregular bedded, slightly calcareous.	
		STRIKE: 312/DIP: 23° S.W.	

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SHEET 41

STATION	UNIT	DESCRIPTION	
M377		Sandstone - Siltstone interbeds;	
		Sandstone, brown, light brown to grey weathering, fine-grained, fine to thin irregular bedded, calcareous.	
		Siltstone, sandy, brown, dark brown to black weathering, fine irregular bedded, calcareous. STRIKE: 312/DIP: 45° N.E.	
		* Minor coal spars (less than 1 m) associated with this outcrop.	
M378		Sandstone, dark grey, brown weathering, very fine-grained, argillaceous;	
		medium bedded, very calcareous, plant replacement "burrows" evident.	
		Overlain by:	
		Sandstone, grey, tan to buff weathering, fine-grained, thick bedded,	
		calcareous. STRIKE: 329/DIP 37° N.E.	
M379		Sandstone, grey tan to buff weathering, fine-grained, thick bedded,	
		calcareous. STRIKE: 330/DIP 42° N.E.	
M380		Large outcrop 20 m X 30 m	
		Sandstone, grey to dark grey, brown weathering, fine-grained, thin to	

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TRAVERSE NOTES

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STATION	UNIT	DESCRIPTION	
		thick bedded, non-calcareous.	
		Overlain by:	
		Sandstone, brown, brown weathering, fine-grained, medium bedded, calcareous, rubbly.	
		Overlain by:	
		Mudstone, dark grey to black, dark grey weathering, non-calcareous, rubbly to blocky. 15 cm coaly seam.	
		Overlain by:	
		Sandstone, brown, brown weathering, fine-grained, medium bedded, calcareous, rubbly.	
		Overlain by:	
		Sandstone, light grey, brown to very light grey weathering, fine-grained, massive, slightly calcareous.	
		STRIKE: 339/DIP: 39° N.E.	
M381		Sandstone, brown, brown to light grey weathering, medium grained, calcareous.	
		* light folding changes bedding from:	

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STATION	UNIT	DESCRIPTION
		STRIKE: 340/DIP: 24° N.E.
		to
		349/37° S.W.
M382		Sandstone, grey, grey weathering, coarse to very coarse grained, thick bedded to massive, non-calcareous.
		STRIKE: 306/DIP: 51° S.W.
M383		Sandstone, grey to dark grey, very light grey weathering, fine-grained, thin to thick bedded, calcareous.
		STRIKE: 347/DIP: 12° S.W.
M384		Sandstone, dark grey, brown weathering, very fine to fine grained, thin to thick bedded, calcareous.
		* bedding changes from:
		STRIKE: 319/DIP: 51° N.E.
		to
		345/45° S.W.

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STATION	UNIT	DESCRIPTION	
M385		Sandstone, grey, dark brown weathering, very fine to fine grained, fine to thick bedded, calcareous.	
		STRIKE: 345/DIP: 62° S.W.	
M386		Sandstone, light brown, buff to light brown weathering, medium grained, thin bedded to massive, non-calcareous.	
		STRIKE 342/DIP: 60° S.W.	
M387		Sandstone, grey, dark brown weathering, very fine to fine grained, thick bedded to massive, calcareous.	
		STRIKE: 275/DIP: 45° N.	
M388		Sandstone, light brown to dark grey, light grey weathering, fine-grained, medium to thick bedded, calcareous.	
		STRIKE 345/DIP: 50° S.W.	
M389		Canyon; 200 ft deep plus, sandstones as above, M388	
		N.E. wall, sandstones exhibit severe buckling, folding, shearing, jointing	

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STATION	UNIT	DESCRIPTION	
		and slickensides. STRIKE: 346/DIP: 46° S.W.	
		300/ 55° S.W.	
		S.W. wall, sandstones as above;	
		STRIKE: 340/DIP: 57° N.E.	
		345/ 47° N.E.	
M390		Sandstone, tan to grey, grey weathering, coarse-grained, thin bedded, non-calcareous, abundant orange grains throughout.	
		STRIKE: 325/DIP: 57° S.W.	
M391		Sandstone, grey, grey weathering, coarse-grained, thin to medium bedded, non-calcareous, abundant orange grains throughout, large scale low-angle cross-bedding.	
		STRIKE: 317/DIP: 51° S.W.	
M392		Sandstone, light brown, grey to buff weathering, fine-grained, thin irregular bedded, non-calcareous; abundant carbonaceous debris.	
		STRIKE: 315/DIP: 29° S.W.	

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STATION	UNIT	DESCRIPTION	
M393		Sandstone, grey brown, grey weathering, medium to coarse-grained, thin	
		bedded, non-calcareous, minor cross-bedding.	
		STRIKE: 331/DIP: 35° S.W.	
M394		Sandstone, as above, M393	
		STRIKE: 305/SIP: 62° S.W.	
		325/ 89° N.E.	
M395		Sandstone, light brown, dark brown weathering, fine-grained, fine to	
		thin bedded, very calcareous.	
		STRIKE: 307/ DIP: 57° N.E.	
M396		Sandstone, tan to orange brown, tan weathering, fine-grained, appears to	
		be thick bedded, non-calcareous.	
		STRIKE: 317/DIP: 57° S.W.	
M397		Sandstone, light brown, light brown weathering, fine to medium-grained,	
		medium to thick bedded, non-calcareous.	

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STATION	UNIT	DESCRIPTION	
		Underlain by:	
		20 cm coal seam, with mudstone floor.	
		STRIKE: 318/DIP: 37° S.W.	
M398		Sandstone, brown to tan, buff weathering, fine-grained, thin bedded, calcareous.	
		STRIKE: 330/DIP: 54° S.W.	
M399		Sandstone, grey to brown, grey weathering, medium-grained, thin to medium bedded, non-calcareous.	
		STRIKE: 330/DIP: 51° S.W.	
M400		Sandstone, grey, dark brown weathering, medium-grained, appears to be medium to thick bedded, non-calcareous.	
		Overlain - by: Sandstone and Mudstone interbeds	
		Sandstone, silty, dark brown, tan weathering, thin bedded, calcareous.	
		Mudstone, dark grey, dark grey weathering, rubbly, non-calcareous.	
		* outcrop is very disturbed, brokwn bedding, jointing.	
		STRIKE: 318/DIP: 72° S.W.	

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STATION	UNIT	DESCRIPTION	
M401		Sandstone, grey, dark brown weathering, medium-grained, medium to thick bedded, non-calcareous.	
		STRIKE: 295/DIP: 67° N.E.	
M402		Sandstone, dark brown, dark brown weathering, very fine-grained, medium to thick bedded, slightly calcareous.	
		STRIKE: 350/DIP: 70° W.	
M403		Sandstone, grey to light brown, dark brown weathering, medium-grained, medium to thick bedded, slightly calcareous.	
		STRIKE: 276/DIP: 28° N.	
M404		Sandstone, dark grey, dark brown weathering, very fine-grained, medium bedded, calcareous	
		STRIKE: 316/DIP: 54° S.W.	
		* outcrop exhibits severe jointing, shearing, abundant slickensides	
M405		Sandstone, brown to grey, dark brown weathering, fine-grained, medium bedded, calcareous.	
		STRIKE: 305/DIP: 60° S.W.	

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STATION	UNIT	DESCRIPTION	
M406		Sandstone, as above M405.	
		STRIKE: 311/DIP: 48° S.W.	
M407		Sandstone, dark brown, light grey weathering, fine-grained, fine to thin'	
		bedded, slightly calcareous.	
		STRIKE: 345/DIP: 30° S.W.	
M408		Sandstone, dark brown, light grey weathering, fine-grained, fine to thin	
		bedded, slightly calcareous.	
		STRIKE: 330/DIP: 39° S.W.	
M409		Sandstone, grey to brown, tan weathering, very fine to fine-grained,	
		thin to medium bedded, calcareous.	
		STRIKE: 254/DIP: 24° S.E.	

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STATION	UNIT	DESCRIPTION	
M410		Sandstone, grey, grey to orange brown weathering, medium-grained, thin to medium bedded, non-calcareous, grey weathering, calcareous, orange brown weathering.	
		STRIKE: 269/DIP: 15° N.	
M411		Sandstone, light brown, grey weathering, very fine-grained, thin bedded, slightly calcareous.	
		STRIKE: 243/DIP: 49° N.W.	
M412		Sandstone, grey brown, light brown weathering, very fine-grained, fine to medium bedded, calcareous.	
		STRIKE: 210/DIP: 16° S.E.	
M413		Sandstone, grey to light brown, light grey to brown weathering, fine-grained, thin to medium bedded, calcareous.	
		STRIKE: 225/DIP: 14° S.E.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 29 July 1980

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STATION	UNIT	DESCRIPTION	
M414		Sandstone, grey to tan, grey brown weathering, medium to coarse-grained,	
		thin to thick bedded, non-calcareous, abundant orange grains.	
		STRIKE: 181/DIP: 14° E.	
M415		Sandstone, light brown, dark brown weathering, very fine to fine-grained,	
		fine to thick bedded, non-calcareous,	
		STRIKE: 355/DIP: 37° W.	
M416		Sandstone, dark brown, dark brown weathering, very fine-grained, medium	
		bedded, slightly calcareous.	
		STRIKE: 325/DIP: 77° S.W.	
M417		Sandstone, tan, dark brown weathering, fine-grained, medium bedded, very	
		calcareous.	
		STRIKE: 315/DIP: 55° S.W.	
M418		Sandstone, grey to light brown, grey weathering, fine to medium-grained	
		medium bedded, non-calcareous.	

STRIKE: 312/DIP: 30° S.W.

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 29 July 1980

SHEET 52

STATION	UNIT	DESCRIPTION	
M419		Sandstone, tan, light brown weathering, medium-grained, thin to medium	
		bedded, calcareous.	
		STRIKE: 276/DIP: 16° S.	
M420		Sandstone, grey brown, light brown weathering, fine-grained, fine to	
		thick bedded, non-calcareous, outcrop is very disturbed.	
		STRIKE: 297/DIP: 57° N.E.	
M421		Sandstone, light brown, dark brown weathering, fine-grained, thin to	
		thick bedded, slightly calcareous.	
		STRIKE: 304/DIP: 31° S.W.	
		Coal Seam possible 1 m thick at this outcrop.	
		* May be the coal location at M219.	
M422		Sandstone, Quart Sandstone, very clean, light grey, light grey weathering,	
		thick bedded, non-calcareous, slickensides evident.	
		STRIKE: 260/DIP: 40° N.W.	

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TRAVERSE NOTES

PROPERTY Merrick Block GEOLOGIST David J. Standring DATE 29 July 1980 SHEET 53

STATION	UNIT	DESCRIPTION	
M423		Sandstone, grey to light brown, dark brown weathering, fine to medium	
		bedded, thin to thick bedded, non-calcareous, slickensides, shearing and	
		jointing evident.	
		STRIKE: 320/DIP: 79° N.E.	
M424		Sandstone, brown, dark brown weathering, very fine to fine-grained, medium	
		bedded, slightly calcareous, 50 cm coal seam at this outcrop.	
		STRIKE: 325/DIP: 86° N.E.	
M425		Sandstone, as above, M424, with a 30 cm coal seam,	
		STRIKE: 318/DIP: 79° N.E.	
M426		Sandstone, dark brown, dark brown weathering, fine-grained, medium,	
		irregular bedded, calcareous, abundant carbonaceous rootlets.	
		STRIKE: 325/DIP: 50° S.W.	

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TRAVERSE NOTES

PROPERTY Merrick Block GEOLOGIST David J. Standring DATE 29 July 1980 SHEET 54

STATION	UNIT	DESCRIPTION	
M427		Sandstone, dark brown, dark brown weathering, fine-grained, medium irregular bedded, calcareous. STRIKE: 335/DIP: 44° N.E.	
M428		Sandstone, grey to dark grey, dark brown weathering, medium to coarse-grained, medium to thick bedded, calcareous. STRIKE: 330/DIP: 84° S.W.	
M429		Sandstone, dark brown, dark brown weathering, very fine to fine-grained, thick bedded to massive, slightly calcareous. STRIKE: 329/DIP: 37° S.W.	
M430		Sandstone, as above M429, non-calcareous. STRIKE: 314/DIP: 49° S.W. Coal Seam approximately 60 cm thick at this outcrop.	
M431		Sandstone, tan, dark brown weathering, fine-grained, thin bedded, slightly calcareous. STRIKE: 302/DIP: 55° N.E.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 30 July 1980

SHEET 55

STATION	UNIT	DESCRIPTION	
M432		Sandstone, tan, red brown to tan weathering, fine-grained, fine to thin bedded, very calcareous. STRIKE: 315/DIP: 66° S.W.	
M433		Sandstone, as above, M432. STRIKE: 320/DIP: 61° S.W.	
M434		Sandstone, light grey, grey weathering, coarse-grained, thin to medium bedded, slightly calcareous. STRIKE: 333/DIP: 60° S.W.	
M435		Sandstone, brown to grey, grey weathering, medium to coarse-grained, thin bedded, non-calcareous. STRIKE: 184/DIP: 7° E.	
M436		Sandstone, as above, M435. STRIKE: 215/DIP: 5° S.E.	

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 30 July 1980

SHEET 56

STATION	UNIT	DESCRIPTION
M437		Sandstone, Quartz Sandstone, clean, light grey, grey weathering, medium to thick bedded, non-calcareous.
		underlain by:
		Sandstone, red brown, red brown weathering, fine to medium-grained, thin bedded, calcareous.
		STRIKE: 315/DIP: 85° S.W.
		* outcrop is very disturbed, exhibits shearing, jointing, slickensides.
M438		Sandstone, red brown to grey, grey weathering, medium to coarse-grained, thin to thick bedded, non-calcareous.
		STRIKE: 315/DIP: 83° S.W.
M439		Coal. (1) 1 m seam
		(2) 50 cm seam.
		all within:
		Sandstone, dark brown, dark brown weathering, fine-grained, fine to medium bedded, calcareous.

STRIKE: 326/DIP: 84° S.W

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TRAVERSE NOTES

PROPERTY Merrick Block

GEOLOGIST David J. Standring

DATE 30 July 1980

SHEET 57

STATION	UNIT	DESCRIPTION
M440		Sandstone, red brown to grey, grey weathering, medium to coarse-grained, thin to medium bedded, non-calcareous.
		STRIKE: 325/DIP: 54° S.W.
M441		Sandstone, tan to brown, brown weathering, very fine to fine-grained, thin to thick bedded, very calcareous.
		STRIKE: 335/DIP: 54° N.E.
M442		Sandstone, silty, brown, dark brown weathering, very fine to fine-grained fine to thick bedded, calcareous.
		STRIKE: 330/DIP: 87° S.W.
M443		Sandstone, as above, M442, with 75 cm coal seam.
		STRIKE: 323/DIP: 69° N.E.
M444		Sandstone, tan to grey, grey weathering, fine to medium-grained, thin irregular bedded, very calcareous.
		STRIKE: 331/DIP: 16° N.E.

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TRAVERSE NOTES

PROPERTY Merrick Block GEOLOGIST David J. Standring DATE 31 July 1980 SHEET 58

STATION	UNIT	DESCRIPTION
M445		Sandstone, light brown to tan, tan weathering, very fine to fine-grained, fine to thin bedded, very calcareous, carbonaceous rootlets. STRIKE: 227/DIP: 7° S.E.
M446		Sandstone, light brown, red brown weathering, very fine to fine-grained, thin irregular bedded, very calcareous. STRIKE: 181/DIP: 7° E.
M447		Sandstone, light brown, grey brown weathering, fine-grained, thin bedded, non-calcareous. STRIKE: 265/DIP: 19° S.
M448		Sandstone, as above, M447. STRIKE: 185/DIP: 15° E.
M449		Sandstone, light brown to grey, grey weathering, medium-grained, thin irregular bedded, non-calcareous. STRIKE: 192/DIP: 17° S.E.

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TRAVERSE NOTES

PROPERTY Mt Merrick AreaGEOLOGIST R. J. MelinDATE July 27, 1980SHEET 1

STATION	UNIT	DESCRIPTION
M501		Sandstone, medium dark grey, cherty portions, medium grey, minor coarse grained, thin to medium bedded, flaggy, large scale cross beds, minor orange colouration, non-calcareous, 1.5m outcrop. 318°/49° SW.
M502		Sandstone, medium grey, minor orange colouration, medium to coarse grained, non-calcareous, medium to thickly bedded, flaggy, large scale cross bedding, 1 m section. 331/50° SW.
M503		Sandstone/Conglomerate, predominantly sandstone, medium grey, medium to coarse grained, grading to pebbly conglomerate, sandy, poorly sorted, scattered cobbles up to 3 cm in diameter, abundant orange colouration. 310/20° SW.
M504		Sandstone, medium grey, buff to orange weathering, fine-grained, well defined rippled laminations, weathers to medium to thick beds, non-calcareous. 325/58° SW.

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TRAVERSE NOTES

PROPERTY Mt. Merrick

GEOLOGIST R. Melin

DATE July 27, 1980 SHEET 2

STATION	UNIT	DESCRIPTION
M505		Sandstone, medium to dark grey, some cherty portions, grades medium to coarse-grained, medium bedded, flaggy orange colouration. 5 m outcrop 340/66° S.
M506		Sandstone, medium grey, orange colouration, fine-grained, carbonaceous laminae, well-defined, ripple bedding, abundant carbonaceous debris 5 m outcrop, calcareous. 340/59° SW
M507		Sandstone, medium grey, buff to orange colouration, fine-grained, minor medium-grained, distinctly laminated, ripple-bedded to small scale cross beds, carbonaceous debris along lamination, calcareous, 2 m outcrop underlain by 3 - 4 meter recessive zone - covered. Contains a 35 cm coaly seam at base, dirty, badly weathered, underlain by argillaceous sandstone, dirty grey with vertical carbonaceous rootlets. 332/74° SW.

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Merrick Area

GEOLOGIST R.J. Melin

DATE July 27, 1980 SHEET 3

STATION	UNIT	DESCRIPTION	
M508		Sandstone, medium grey, buff to orange colouration, fine-grained, minor medium grains, grading to argillaceous downsection, muddy to silty base with uneven to ripple bedding, 1 m section, calcareous.	
		341//55° SW	
M509		Sandstone, medium to dark grey, buff to orange colouration, some portions are ripple bedded to small scale cross bedded, calcareous, overlain by 40 cm mudstone, with a coaly stringer overlain by medium-grained sandstone. Outcrops indicate a repeating occurrence of resistant sandstone ridges with argillaceous recessive zone between them. These repetitions are in approximately 20 m intervals.	
		328/56° SW	
M510		Sandstone, medium to dark grey, minor orange colouration, medium-grained minor carbonaceous debris scattered throughout, non-calcareous, .5 m section.	
		334/60° SW	

N.E. B.C., 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Merrick Area

GEOLOGIST R.J. Melin

DATE July 27, 1980 SHEET 4

STATION	UNIT	DESCRIPTION
M511		Sandstone, dirty grey, buff, weathering, fine-grained to argillaceous, abundant carbonaceous rootlets throughout, calcareous, overlain by brown mudstone to carbonaceous mudstone bloom.
		328/62° SW
M512		Sandstone, medium grey, buff to red colouration, fine-grained, well defined, fine ripple bedding, non-calcareous, .5 m outcrop.
		326/62° SW
M513		Sandstone, medium grey, orange colouration, medium-grained, low angle near horizontal fine laminations weather, medium to thickly bedded, slightly calcareous, 2 m outcrop.
		335/68° SW
M514		Sandstone, medium to dark grey, minor cherts, orange colourations, well defined large scale cross bedding, medium-grained, minor coarser grains, 7 m outcrop.
		325/62° SW

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area

GEOLOGIST R.J. Melin

DATE July 27, 1980

SHEET 5

STATION	UNIT	DESCRIPTION	
M515		Sandstone, dirty grey, very fine grained to argillaceous, calcareous,	
		uneven to ripple bedded, thin to fine irregular bedding, .5 m outcrop.	
		340/46° SW	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 28, 1980 SHEET 6

STATION	UNIT	DESCRIPTION	
M516		Sandstone, medium grey, buff to orange colouration, medium grained,	
		thin flaggy bedding, uneven bedding, calcareous. .6 m block.	
M517		Sandstone, medium grey, buff weathering, very fine grained, thin to	
		fine faint bedding, calcareous, flaggy. .5 m section.	
		327/47° SW	
M518		Sandstone, medium grey, orange colouration, non-calcareous, medium	
		grained, medium bedded, large scale cross bedding, some coarse to very	
		coarse grains.	
		305/38° SW	
M519		Sandstone, medium grey, buff to orange colouration, fine grained, faint	
		uneven to ripple bedding, non-calcareous.	
		311/66° SW	
M520		Sandstone, medium grey, orange colouration, medium grained, some coarse	
		grained medium bedded sandstone, large scale cross bedding, some	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 28, 1980 SHEET 7

STATION	UNIT	DESCRIPTION	
M520 Cont'd		carbonaceous debris and plant impression near top, non-calcareous.	
		340/74° SW	
M520A		Sandstone, medium grey, buff to red weathering, thin to thickly bedded,	
		flaggy in part, large scale cross-bedding, medium grained, non-calcareous,	
		.4 m outcrop	
		315/75° SW	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 29, 1980 SHEET 8

STATION	UNIT	DESCRIPTION	
M521		Conglomerate, cobbles with some boulders and pebbles, non-calcareous, very sheared throughout, even pebbles sheared, 10 m outcrop. 313/52° SW	
M522		Conglomerate pebbles to cobbles, siliceous, very sheared, no bedding evident. 5m outcrop.	
M523		Sandstone, medium to dirty grey, fine grained, thin uneven to indistinct bedding, minor fine carbonaceous laminae. 1.5 m outcrop 322/68° SW	
M524		Conglomerate, cobbles to boulders, boulders up to 10 cm in diameter, sheared, siliceous, some slickensides, classic coarse Cadomin section, 20 m cliff. 310/72° SW	
M525		Sandstone, medium to dark grey, argillaceous to very fine grained, thin uneven to indistinct bedding, carbonaceous debris and large plant	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 29, 1980 SHEET 9

STATION	UNIT	DESCRIPTION	
		impressions, underlain by dark grey mudstone with abundant thin coaly laminae.	
		310/46° SW	
M526		Coal to carbonaceous mudstone bloom in drift.	
M527		Siltstone, dark grey, grading to argillaceous sandstone, down section, abundant fine carbonaceous plant debris throughout, 2 m outcrop.	
		314/46° SW	
M528		Conglomerate, cobbles to boulders, minor pebble sections, boulders up to 10 cm, no bedding evident; 6 m outcrop.	
M529		Sandstone, dark grey, some orange colouration, medium to coarse beds interbedded with finer medium grey sandstone, calcareous in part, some thin bright coaly laminae, appears to be a high velocity environment.	
		4 m outcrop.	
		225/12° SE	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area

GEOLOGIST R.J. Melin

DATE July 29, 1980 SHEET 10

STATION	UNIT	DESCRIPTION
M530		Sandstone, dark grey buff to orange weathering, very fine grained bedding, thin to undefined, calcareous; 1.2 m outcrop.
		355/11 ⁰ SW
M531		Sandstone, medium to dark grey, minor orange colouration, cherty portions, medium grained, minor gradation to cherty pebbles, thickly bedded, becomes coarse down section to a fine cherty conglomerate base, non-calcareous. 4 m section.
		320/22 ⁰ SW
M532		Sandstone, dark grey, orange weathering, cherty portions, medium grained, thickly bedded, slightly calcareous, grades to coarser cherty sandstone. 1 m section.
		308/57 ⁰ SW
M533		Sandstone, dark grey, orange colouration, cherty, medium to coarse grained, thickly bedded to massive, non-calcareous.
M534		Sandstone, dark to dirty grey, buff to orange weathering, fine grained,

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 29, 1980 SHEET 11

STATION	UNIT	DESCRIPTION
		well defined, fine uneven to rippled bedding. .8 m outcrop.
		330/68° SW
M535		Sandstone, medium to dark grey, fine grained with interbed argillaceous sandstones, ripple bedded with some carb debris along bedding, minor coaly float in creek.
		350/62° NE
M536		Sandstone, dirty grey, fine grained to argillaceous, carb debris along laminae, large carbonaceous plant impressions and rootlets, uneven bedding, 2 m section underlain by 40 cm coal in stream bed, black, hard, appears bright even through wet. Underlain by dark to dirty grey argillaceous sandstone, fine uneven bedding, micaceous, non-calcareous, fine carbonaceous debris; .5 m thick
		352/86° SW
M537		Sandstone, medium to dark grey, fine grained, micaceous, calcareous, thin uneven to ripple bedding; 2 m outcrop.

341/68° SW

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area

GEOLOGIST R.J. Melin

DATE July 29, 1980

SHEET 12

STATION	UNIT	DESCRIPTION	
M538		Conglomerate, blocks, sandy, pebbles, minor cobbles up to 3 cm.	
			(elev. 1050 m)
		336/64° SW	
M540		Sandstone, medium grey, buff to orange weathering, fine grained rippled	
		to small scale cross-bedding, calcareous.	(elev. 1047 m)
M541		Sandstone as above, on trend strike parallels creek traverse.	
			(elev. 1038 m)
		340/61° SW	
M542		Sandstone, dark grey, medium grained with minor coarser grains, thickly	
		bedded, very cherty, down section calcareous.	(elev. 1028 m)
		314/72° SW	
M543		Sandstone, fine grained, minor medium grained, medium grey with orange	
		colouration, thin uneven to ripple bedding, 3 m section.	
			(elev. 1020 m)

335/70° SW

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 29, 1980 SHEET 13

STATION	UNIT	DESCRIPTION	
M544		Siltstone, interbedded with argillaceous to fine grained sandstone beds, ripple to uneven bedded, muddy to silty beds, minor traces of fine carbonaceous debris. (elev. 1016 m)	
		342/44° SW	
M545		Sandstone, medium grey, buff to orange weathering, fine to medium grained, large scale cross-beds to ripple bedding on finer sequences. (elev. 1008 m)	
		327/45° SW	
M546		Sandstone, medium grey with orange colouration, medium grained with some finer grained sequences, thin uneven bedding, fine carbonaceous debris along bedding, non-calcareous coal bloom overlaying outcrop, 5 m section underlain by 10 cm bright hard coal. (elev. 993 m)	
		325/55° SW	
M547		Sandstone, medium to dark grey, several argillaceous sandstone beds with silty mudstone interbeds, .5 to 2 m intervals between beds. (elev. 987 m)	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area GEOLOGIST R.J. Melin DATE July 29, 1980 SHEET 14

STATION	UNIT	DESCRIPTION	
M548		Sandstone, medium to dark grey, argillaceous, fine grained, some mudstone interbeds, calcareous large 20 m section in the creek bed.	
		328/58 ^o SW (elev. 978 m)	
M549		Sandstone, similar set as above, argillaceous to fine grained, ripple bedded with some low parallel laminae beds.	(elev. 958 m)
M550		Sandstone, argillaceous to very fine grained, ripple bedded, underlain by mudstone, medium to dark grey, carbonaceous with coaly laminae, muddy section to 20 cm sequence, returns into argillaceous sandstone as above to medium grained sandstone, thinly bedded, medium grey with some orange colouration.	(elev. 920 m)
		325/65 ^o SW	
M551		Coal seam 35 cm, hard, bright, overlain by siltstone-sandstone, underlain by mudstone-sandstone with distinct ripple to small scale cross-bedding, medium grey, medium grained.	(elev. 906 m)
		322/68 ^o SW	

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TRAVERSE NOTES

PROPERTY Mt. Merrick Area

GEOLOGIST R.J. Melin

DATE July 29, 1980

SHEET 15

STATION	UNIT	DESCRIPTION
M552		Sandstone, medium grey to dark grey, with some orange colouration, non-calcareous. 322/74° SW (elev. 878 m)
M533		Coal float in creek (elev. 885 m)
M554		Coal seam .6 m thick, black, hard, bright, minor dull, thin carbonaceous band between coal and argillaceous sandstone root, mudstone floor, silty, dark grey, carbonaceous (should be trenched), bloom suggests two smaller seams (10 cm thick) in recessive zones nearby. (elev. 849 m) 324/68° SW
M555		Sandstone, dark grey cherty, medium grained, thick bedded, non-calcareous. (base of traverse). (elev. 818 m)

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 1980-06-30SHEET 1

STATION	UNIT	DESCRIPTION	
J1	KBrV	Here cairn with pick handle. Outcrop of SANDSTONE-very fine to fine-grained, locally silty, ripple-drift cross-laminated, thin-bedded, dark brown, buff-weathering, platy. Moderately cemented. Abundant fine carbonized plant debris. Attitude: 115/71 SW.	
J2	KBrU	SANDSTONE-coarse-grained, clean, brown, grey-weathering, spectacular trough cross-bedding; thickly laminated, platy. Attitude: 177/12W	
J3	KBrU	SANDSTONE-medium to coarse-grained, clean, brown, grey-weathering, platy, thin-bedded, moderately cemented. Attitude: 107/30 NE.	
J4	KBrU	SANDSTONE-very fine to coarse-grained, silty, brown, grey-weathering, one rootlet noted; strongly jointed, forms dip slope. Attitude: 110/32 NE.	
J5	KCdL	CONGLOMERATE-pebble, coarse-grained sand matrix; framework is light and dark grey chert. Unit is tough and hard; est. 5m thick.	

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. L. BICKFORD

DATE 1980-06-30

SHEET 2

STATION	UNIT	DESCRIPTION	
J6	KCdV	CONGLOMERATE-pebbles of light and dark grey chert and quartzite (some is ferruginous-weathering; abundant coarse-grained sand matrix. Large-scale crossbedding. Attitude 124/35 NE. Thickness est. 5M; this unit is separated from the lower cadomin by approx. 7 m of covered interval.	
J7	KGeL	Here just below top of dip slope is SANDSTONE-medium to coarse-grained, clean, brownish-grey, light grey-weathering, thin irregular beds, hummocky cross-stratification (dunes?). Attitude: 123/30 NE.	
J8	KGe1	Here under long overhanging outcrop of sandstone is exposed coal, 0.60 mt. Immediate roof is CONGLOMERATE-medium and large, rounded pebbles with abundant medium-grained sand matrix. 0.45 m. Overlying this conglomerate is approximately 2m of SANDSTONE-fine to coarse-grained, clean, medium-bedded, large-scale low-angle cross- ^{bedding} (laminated), light grey to orange-weathering. ^{to bedding} Attitude: 145/45 NE.	

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 1980-06-30

SHEET 3

STATION	UNIT	DESCRIPTION	
J9	KGeL	SLP along strike to SE. Here is exposed the following section: TOP:	
		SANDSTONE-fine to medium-grained, clean, light brown, grey-weathering,	
		large-scale low-angle cross-laminated (possibly large trough-sets).	3.5m +
		Thinbedded. Attitude: 127/46 NE.	
		COAL BLOOM-perhaps 1m seam; to be trenched	
		SANDSTONE-fine-grained, brown, grey-weathering, very thin to medium-	
		bedded, platy to blocky, rooty.	0.6m +
		Attitude: 125/51 NE.	
		SANDSTONE(subcrop)-very fine-grained, silty, strongly orange-weathering,	
		weathering to chips and plates. Possible marker.	
J10	KGeL	SLP down dip. Here SANDSTONE-fine-grained, light brownish-orange, grey-	
		weathering, very thin-bedded and platy, with platy stacks of cross-beds.	
		Attitude: 138/59 NE.	
		Forms dip slope.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 80-07-01

SHEET 5

STATION	UNIT	DESCRIPTION	
J12	CdU	To here from X6, walked NW on strike. Here CONGLOMERATE- pebble, abundant coarse-grained sand matrix. Clean, tough, well-cemented. Phases of coarse-grained sandstone. Attitude: 110/28 NE?	
J13	CdU	SLP to NW on strike, continuous outcrop of CONGLOMERATE-as before; here maximum pebble size 50 mm. Attitude: 115/24 NE.	
J14	CdU	SLP along strike to NW. Here in forest is CONGLOMERATE-large pebbles to 60 mm. in coarse-grained sand matrix. Tough, well-cemented, planar to very ^{bed} (large-scale low-angle cross-laminated. Attitude: 105/32 NE. LGSC LWAN CRBB LGSC PLCR	}
J15		Here in Creek at elevation 1540 m. SLP attempted to trace upper cadomin, but found no outcrop along supposed surface trace. Cadomin here seems to be outcropping more to E than before.	
J16		SLP up dip, but no outcrop. Here up hill is a large meadow.	}
J17	GeL	SLP up dip, but no outcrop. Here SANDSTONE-fine-grained, clean, tough,	

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STATION	UNIT	DESCRIPTION
		well-cemented, light purplish-grey, rippled thin-bedde, platy, at least 5m thick although not well-exposed. Attitude: 137/26 NE.
J18	GeL	SANDSTONE-medium to coarse-grained, clean, tough, well-cemented, large-scale low-angle cross-laminated.
J19	Ge1	SANDSTONE-medium to coarse-grained, brownish-grey, grey-weathering, tough, well-cemented, thick-bedded, stylolitic, siliceous, non-calcareous. Attitude: 113/48 NE
J20	Ge1	SANDSTONE-fine to medium-grained, clean, siliceous, recrystallized?; tyolitic, brownish-grey, grey-weathering, trough crossbeds, low-angle cross-laminated; well-cemented. Attitude: 136/51 NE.
J21	GeL	Here atop low, bare hill is small exposure, surrounded by talus, of SANDSTONE-medium to coarse-grained, orange-grey-weathering, thin-bedded, low-angle cross-bedded, forming typical platy stacks. Non-calcareous. Attitude: 124/21 NE.

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STATION	UNIT	DESCRIPTION	
J22	GeL	COAL BLOOM-three small hand trenches here, to be deepened and logged.	
J23	GeL	SANDSTONE(floor)-very fine-grained, chocolate brown, bluish-grey- weathering (compare to Chamberlain floor), rooty. Here a dip slope; attitude: 116/40 NE. Some large plant impressions.	
J24	GeL	SANDSTONE(roof)-very fine-grained, silty, grey, orange-weathering, thinly bedded and finely parallel-laminated, locally abundant tiny plant stem impressions (cf. eelgrass). Very strongly calcareous, almost marly.	<i>plant stem</i> →
J25		SLP down dip to SW; here SANDSTONE-fine-grained, clean, tough, well- cemented; grey, grey-weathering, thick-bedded; here and to SE forms NE-facing dip slope; non-calcareous. Attitude: 123/41 NE	
J26	BrU	SANDSTONE-medium to coarse-grained, clean, large bedding-plane exposure showing scattered pebbles and occasional plant impressions. Thin- bedded; moderately cemented, non-calcareous, reddish-brown, grey- weathering. Attitude: 120/37 NE.	

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STATION	UNIT	DESCRIPTION	
J27	BrU	SANDSTONE-coarse-grained, clean, brown, light brown-weathering, strongly calcareous, thin-bedded, trough cross bedded. Attitude: 126/53 NE.	
J28	BrU	SANDSTONE-fine to medium-grained, clean, brownish-grey, buff to brown weathering, some orange-weathering; thin-bedded, trough cross-bedded, platy to blocky, strongly calcareous. Attitude: 117/55 NE. COAL bloom below this unit.	
J29	BrU	SANDSTONE-very fine to medium-grained; thin fining-upward beds; clean, brown-weathering, irregular bedding; forms dip slope. Attitude 125/40 NE.	
J30	BrU	NW and on strike of X28. Here SANDSTONE- coarse-grained, clean, brown-weathering, non-calcareous, trough cross-bedded, crumbly. Attitude: 104/26 NE.	

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STATION	UNIT	DESCRIPTION
J31	BrU	SANDSTONE-coarse-grained, clean, grey-weathering, crumbly, non-calcareous, thin-bedded, trough cross-bedded. Attitude: 105/40 NE.
J32		From X30, along strike to NW. Here in trees, no outcrop. SLP scattered exposures of sandstone as at X30.
J33	BrU	SANDSTONE-coarse to very coarse-grained, clean, well-sorted, moderately cemented, grey-weathering, through cross-bedded, thin to medium-bedded, with phases of granule to small pebble conglomerate.
J34	CdL	Here long exposure of CONGLOMERATE - granule to pebble (max. 50 mm), clean, well-cemented, thick bedded to massive, channeled, occasional lenses of coarse-grained conglomeratic sandstone. 4 to 5 m thick. Attitude: 120/30 NE.
J35	CdL	SLP along strike to NW. Here in forest, isolated exposure of CONGLOMERATE - pebble to granule, very coarse to coarse-grained sand matrix. Massive, well-cemented.

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STATION	UNIT	DESCRIPTION
J36	CdL	CONGLOMERATE- as at X34. Here attitude: 113/29 NE.
J37	CdL	CONGLOMERATE- as at X36. Attitude: 127/30 NE.
J38	BrU	SANDSTONE- very fine-grained, silty (?), rooty, medium grey, bluish-grey-weathering, thin hummacky bedding. Non-calcareous. Attitude: 115/37 NE.
J39	BrU	Section: TOP: SANDSTONE- medium to coarse-grained, clean, brown, grey-weathering, thin to medium-bedded, trough cross-bedded, some large ripples; generally irregularly bedded. Moderately cemented. Abundant carbonised plant fragments and log impressions. Non-calcareous. Attitude: 130/47 NE? MUDSTONE- medium to dark grey; rubbly, listricated. SANDSTONE- fine to medium-grained, clean, brownish-grey, buff-weathering. Ripple-drift cross-laminated, thin, irregular beds with tiny plant fragments. Strongly calcareous.

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SHEET 11

STATION	UNIT	DESCRIPTION
J40	BrU	SANDSTONE- medium to coarse-grained, clean, grey-weathering, platy, thin bedded, trough cross-bedded. Non-calcareous. Attitude: 185/85 W.
J41	BrU	MUDSTONE-dark grey, carbonaceous, with rare bright coal streaks. Ca. 12 m stratigraphically above J40. Compare to mudstones of J39.
J42	BrU	SANDSTONE-medium to coarse-grained, clean, trough cross-bedded, thin to medium-bedded, grey to light orange-weathering. One bed of sandy pebble-conglomerate, 0.25 m thick. Outcrop is on crest of anticline, dipping gently to NE and SW. Moderately cemented.
J43	BrU	SANDSTONE-medium to coarse-grained, brown, grey-weathering, moderately cemented, occasional pebbles, thin-bedded, trough cross-bedded. Compare beds of J42. Attitude: 122/72 SW.
J44	BrU	SANDSTONE-medium to coarse-grained, brownish-grey, grey-weathering, clean, scattered pebbles, thin-bedded, trough cross-bedded, platy. This outcrop forms a NW- trending strike ridge, and shows a very tight anticline,

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SHEET 12

STATION	UNIT	DESCRIPTION	
J44 (cont)		almost a chevron-type, with dip reversal across 1.5 to 2 m.	
		Attitude: SW limb: 120/45 SW.	
		NE limb: 138/45 NE.	
J45	BrU	SANDSTONE-coarse-grained with pebbles, as before. Attitude: 145/69 SW.	
		Since last point, traversed to NW along strike. Here beds all dip to SW.	
		Evidently the anticline at J44 is only a local flexure, and the main crest	
		is still to the northeast.	
J46	BrU	SANDSTONE-medium to coarse-grained, brown; grey-weathering; medium to	
		thick bedded, trough cross-bedded; underlies beds of J45.	
		Attitude: 111/45 SW. Under this sandstone there appears to be subcrop of	
		MUDSTONE-dark grey, carbonaceous.	
J47		SANDSTONE-coarse to very coarse-grained, clean, moderately cemented,	
		brown, grey-weathering, trough cross-bedded, Attitude 125/63 NE.	
		This point is immediately east of the anticlinal crest. Here it is quite	
		tight, the width of the crest being ca. 10 m. Essentially a chevron fold.	

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SHEET 13

STATION	UNIT	DESCRIPTION	
M48		Here is side of dry creek bed is exposed the following section:	
		TOP:	
		SANDSTONE- very fine-grained, silty, delicately laminated, brown, grey-	
		weathering, rooty, tough. Devoid of lamination at top.	
		MUDSTONE-dark grey, carbonaceous, with abundant thin bright coal bands.	
		Here also some MUDSTONE-brown, silty, orange-weathering, with abundant	
		plant fragments. Attitude: 127/85 to 90 SW.	
		SANDSTONE-very fine-grained, silty, brown, rooty.	
J49		SANDSTONE-dark brown, buff-weathering; fine to very fine-grained,	
		argillaceous, thin irregular beds, possible raindrop impressions; very	
		strongly calcareous. Attitude: 131/61 SW. Appears to overlie beds of J48.	
J50	BrU?	SANDSTONE-coarse to very coarse-grained, brown, grey-weathering, moderately	
		cemented, clean, coarsening - downward to pebble conglomerate. Thin to	
		thick-bedded. Attitude: 143/66 SW.	

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STATION	UNIT	DESCRIPTION	
J51		Here atop Hill 1783 is exposed conglomerate of the Cadomin Formation, in	
		two benches as on the east limb of the Jilg Anticline. The following	
		section is exposed:	
		TOP:	
	GeL	SANDSTONE-fine-grained and orange-weathering at top; coarsening down to	
		coarse-grained and grey-weathering. Clean; planar cross-bedded, forming	
		platy stacks at top; towards base, trough cross-bedded and thick-bedded,	
		blocky. Attitude: 128/77 SW. Abrupt.	
	CdU	CONGLOMERATE-pebble, with coarse to very coarse sand matrix. Tough and	
		well-cemented; irregular, ?erosional base.	
		GOVERNED INTERVAL-soil suggests mudstone, medium grey, light-weathering,	
		soft, and sandstone, very fine-grained, silty.	
	CdL	CONGLOMERATE-pebbles, in very coarse-grained sand to granular matrix.	
		Tough well-cemented; irregular, ?erosional base.	

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SHEET 15

STATION	UNIT	DESCRIPTION	
J52	GeL &	Here coarse-grained sandstone of Lower Gething overlies pebble conglomerate	
	Cd	of Upper Cadomin. Attitude: 122/90 SW. Here the Upper Cadomin contains	
		a lens of siltstone, brown, orange-weathering, rubbly, approximately	
		0.80 m thick.	
		Between the two benches of the Cadomin here, is subcrop of mudstone, dark	
		grey, some of which is carbonaceous.	
J53	GeL &	SLP along strike to NW from J52. Here is a good exposure of both benches	
	Cd	of the Cadomin, as well as the Gething-Cadomin contact, which here is	
		abrupt; Gething sandstones overlie the Upper Cadomin conglomerates.	
		Attitude: (in Gething): 140/73 SW. Between the two benches of the	
		Cadomin is subcrop of mudstone, medium grey, slightly silty, light-	
		weathering.	

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SHEET 16

STATION	UNIT	DESCRIPTION	
J54	BrII	The following beds are exposed here below the Cadomin:	
		TOP:	
		CONCEALED INTERVAL- Soil here is composed of chips of siltstone, mudstone	
		and some very fine-grained sandstone.	
		SANDSTONE- coarse-grained, clean, tough, well-cemented, brownish-grey,	
		grey-weathering. Grades to sandy pebble and granule conglomerate at base	
		Possible rootlets at top.	
		MUDSTONE (subcrop)- dark brown and dark grey, rubbly, listricated,	
		carbonaceous in part.	
J55	GeL, CdU	SANDSTONE-medium to coarse-grained, platy, of Lower Gething, overlying	
		at least 7 m of:	
		CONGLOMERATE-pebble, of Upper Cadomin. Attitude: 127/90 SW.	
J56	GeI & Cd	SLP along strike to NW. Here again is exposed contact of Cadomin and	
		Gething. Gething sandstones here are medium-bedded, trough cross-bedded,	
		and grey-weathering. This appears to be typical of immediate basal	
		Gething.	

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STATION	UNIT	DESCRIPTION	
J57	BrU?	SANDSTONE-medium to coarse-grained, clean, hard, thick-bedded, trough cross-bedded, brownish-grey, grey-weathering; rare pebbles. Attitude: 124/65 NE. (overturned); troughs show overturning.	
J58	BrU?	CONGLOMERATE-pebble; iss-sorted; silty, orange-weathering matrix. Not as well cemented as the typical Cadomin. 6 m thick; passes to coarse-grained, gritty sandstone at top. Tops to SW.	
J59	BrU	SANDSTONE-very coarse-grained, pebbly, tough and well-cemented, massive; grading up to coarse-grained sandstone, which in turn fine upward to very fine-grained, thin-bedded, platy sandstone. Unit is brown, grey-weathering trough cross-bedded throughout. This is probably Brenot, although it could be a yet lower bench of the Cadomin. It does not, however, outcrop very consistently. Attitude: 135/70 SW.	

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SHEET 18

STATION	UNIT	DESCRIPTION	
J60		Here is exposed the contact of the Gething and Cadomin:	
		TOP:	
	GeL	SANDSTONE-fine to medium-grained, clean, brown, brownish-grey-weathering,	
		thin-bedded, large-scale low-angle and trough cross-bedded. Scattered	
		pebbles. Abrupt.	
	Cd	CONGLOMERATE- pebble, tough, well-cemented. Attitude: 136/73 SW.	
J61	GeL	SLP walked SE along strike. Here is SANDSTONE- fine-grained, brown,	
		brownish-grey-weathering, planar-bedded, large-scale ripple cross-laminat-	
		ed. These beds immediately overlie the beds of J60, and are in turn	
		overlain by a persistent band of SANDSTONE- fine-grained, bright orange	
		weathering. Total exposed Gething thickness is approximately 7 m.	
		Tops to SW. Attitude: 138/66 SW.	
J62	GeL, Cd	SLP along strike to SE. Here Gething sandstones form a cliff over	
		Cadomin conglomerate. Attitude: (in Gething) 145/62 SW.	

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STATION	UNIT	DESCRIPTION
J63	Cd	SLP descended cliff. Here just below top of upper bench of Cadomin, which is here at least 5 m thick. Just beyond here the scarp ends. Fault? Shearing and slickensides in the Cadomin.
J64	BrU?	Here above meadow is exposure of; SANDSTONE- fine to very fine-grained, finely ripple-laminated, thin irregular platy beds, trough cross-beds, brown, light brown to buff-weathering. Moderately cemented. Attitude: 117/65 NE. Tops to NE.
J65	BrU	Here is opposite side of gully from J64 is MUDSTONE- dark grey, purplish-brown-weathering, rubbly; attitude: 132/56 NE. Underlies J64.
J66		SANDSTONE- fine to medium-grained, clean, brown, grey-weathering, large-scale trough cross-bedded; attitude 125/73 NE. Tops to NE. Underlies J65.
J67	BrU	SANDSTONE- medium to coarse-grained, clean, occasional pebbles. Large-scale low-angle cross-laminated, thick-bedded, platy. Attitude: 133/46 NE. Grey-weathering; compare to beds of J66.

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SHEET 20

STATION	UNIT	DESCRIPTION	
J68	BrU	Here subcrop of SANDSTONE- very fine-grained, silty, rubbly, rooty, plant fragments, grey.	
J69	BrU	SANDSTONE- coarse-grained, clean, brown, grey-weathering, large-scale cross-bedded and cross-laminated, some gritty to pebbly phases. Moderately cemented.	
J70	BrU	SANDSTONE- coarse-grained, clean, brown, grey-weathering, trough cross-bedded, moderately cemented; Attitude: 119/24 NE.	
J71	BrU?	CONGLOMERATE- sandy, pebble, with rusty, silty matrix. Sheared. Grades up to SANDSTONE- medium-grained, gritty, clean. Ca. 0.8 m thick. Attitude: (poor) 096/5 NE. Above this outcrop, on slope, are poor exposures of very fine-grained silty sandstone and dark grey mudstone.	

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SHEET 21

STATION	UNIT	DESCRIPTION
J72	CdL?	The following section is exposed: TOP: CONGLOMERATE- pebble, with very coarse sand matrix; tough and well-cemented, thick-bedded, channeled, with undulating (perhaps somewhat erosional) base.
	BrU?	MUDSTONE- dark grey, rubbly, grading down to SILTSTONE- rippled, dark grey, orange-weathering, grading down to SANDSTONE- very fine-grained, orange-weathering. Attitude: 105/50 NE.
J73	CdU	CONGLOMERATE- pebble, tough, well-cemented. Coarse-grained sand matrix. Attitude: 108/23 NE.
J74	BrU	SANDSTONE- coarse-grained, clean, brown, grey-weathering; platy, moderately cemented; trough cross-bedded. Attitude: 135/41 SW.
J75	CdU	CONGLOMERATE- pebble; sheared, tough, well-cemented. Attitude: 145/75 NE.
J76	GeL	SANDSTONE- fine to very fine-grained, brown, light brown-weathering, well-

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SHEET 22

STATION	UNIT	DESCRIPTION	
		cemented, thin-bedded, platy. Attitude: 110/68 NE. (overturned). May	
		not be in place.	
J77		SANDSTONE- fine-grained, clean, platy to blocky, cross-bedded; thin-bedded and orange-weathering to thick-bedded and grey-weathering.	
		Attitude: 130/70 SW. At least 5 m thick; coal bloom below (to east).	
J78		Here immediately below the lower Cadomin are the following beds:	
		TOP: (see J52 for Cadomin section)	
	BrU	MUDSTONE- mostly brown and rubbly. Some light grey beds towards top.	
		Thin bands of rooty SILTSTONE and very fine-grained, orange-weathering sandstone. Basal 0.10 m is slightly carbonaceous, and from 0.9 to 1.2 m	
		above base is dark grey, carbonaceous mudstone. Abrupt.	
		SILTSTONE- medium grey, tough, rooty, blocky. Dark grey and carbonaceous at top. Erosional? Attitude: 134/80 to 90 SW.	
		SILTSTONE- light brownish-grey, rubbly. Abrupt.	

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SHEET 24

STATION	UNIT	DESCRIPTION	
J1003	GeL?	Here to south of Nose Lake are scattered blocks, probably subcrop, of CONGLOMERATE- granule to mostly small pebbles, of light and dark chert in a rusty-weathering coarse sand matrix. Some coal clasts. Moderately cemented.	
J1004	GeL?	SLP along ridge to NW. Scattered blocks of CONGLOMERATE and SANDSTONE, but no outcrop. Here is a large block of SANDSTONE- medium to coarse-grained, scattered grit and granules; clean, grey-weathering, non-calcareous.	
J1005		SLP still to HW. Here a large block (probably not in place) of CONGLOMERATE- ill sorted, consisting of granules to 40 mm pebbles in a dirty brown, grey-weathering weakly cemented sand matrix.	
J1101		SANDSTONE- very fine to fine-grained, thin irregular beds; brown, tan-weathering, calcareous. Attitude: 048/11 NW.	

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STATION	UNIT	DESCRIPTION	
J1102	GeL	SANDSTONE- very fine-grained, silty, laminated, thin irregular beds;	
		light brownish-grey, white-weathering, non-calcareous. Attitude: 273/4 SE.	
J1103	GeL	SANDSTONE- fine to medium-grained, clean, thick-bedded, large-scale low-	
		angle cross-laminated, non-calcareous, light grey. Appears to be flat-	
		lying.	
J501	GeL	CONGLOMERATE- clean, well-sorted, composed of coarse to very coarse-	
		grained sand, grit, granules, and small pebbles. No matrix. Porous.	
		Finer than typical conglomerate of Cadomin. Here appears to be a	
		westward dip-slope. Attitude: 179/11 W. Medium planar beds.	
J502	GeL	SLP along contour to N, nearly on strike. Here is GRITSTONE- brown, with	
		scattered granules and pebbles. Attitude: 123/12 SW.	
J503	GeL	SLP continued NW along strike. Here is SANDSTONE- coarse-grained, clean,	
		with grit and granules throughout. Light grey, non-calcareous, thick	
		irregular beds, some appear to be channel-fills. Attitude: 003/10 W.	

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SHEET 26

STATION	UNIT	DESCRIPTION	
		25 m to east appears to be crest of broad anticline.	
J504	GeL	SLP to NE across anticline. Here are beds dipping to NE: CONGLOMERATE- small pebbles, fining up to SANDSTONE- fine-grained, brown. At least two thick-bedded fining-upwards sequences; much of this unit here is SANDSTONE- coarse-grained, gritty, grey-weathering, porous.	
J505	GeL	SLP across small swampy valley to N. Here are beds underlying those of J504. SANDSTONE- coarse-grained, conglomeratic, fining-upwards to fine-grained. Clean; thick-bedded at base, becoming thinner-bedded upwards. Attitude: 080/13 N.	
J506	GeL?	SANDSTONE- medium to coarse-grained, clean, some gritty and pebbly, conglomerate phases. Non-calcareous. Large, thick, low-angle trough sets. Attitude (?): 118/14 NE.	

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SHEET 27

STATION	UNIT	DESCRIPTION
J507	GeL	At outlet of swamp. SANDSTONE- fine to medium-grained, clean, non-calcareous, light brown, grey-weathering, a few tiny muddy intraclasts. Irregular thin to medium beds. Attitude: 155/17 NE.
J508	GeL	SANDSTONE- medium to coarse-grained, scattered granules. Clean, light brown, grey-weathering, thick irregular beds. Non-calcareous. Attitude: 106/18 NE.
J509	GeL	SANDSTONE- very coarse-grained, clean, scattered pebbles; probably same unit as at J508. Some conglomeratic phases. Attitude: 158/11 NE (?).
J510	GeL	SANDSTONE- coarse-grained, clean, light brown, grey-weathering, scattered pebbles and granules. Probably overlying beds of J509.
J511	GeL	Subcrop of SANDSTONE- very fine-grained, silty, light brownish-grey, strongly orange-weathering. Rubbly; thin, irregular beds, abundant plant fragments.

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STATION	UNIT	DESCRIPTION
J512	GeL	Here in gully is exposed the following section: TOP:
		SILTSTONE and SANDSTONE, very fine-grained, silty - coarsening-upward, with scattered tiny plant fragments.
		MUDSTONE- silty, dark grey and dark brown; rubbly; listricated in part.
		Attitude: 138/3 NE.
		MUDSTONE- black, carbonaceous, with thin bright coal bands.
J513		Here atop small hill, no outcrop. Possible subcrop of SANDSTONE- medium grained, clean, "welded" appearance; brown-weathering, devoid of lamination, platy, with hackly break.
J514		SLP and here no outcrop, but scattered blocks of SANDSTONE, some of which is conglomeratic, and CONGLOMERATE, sandy; similar to those blocks seen east of Mount Jilg. This may be a subcrop of GeL conglomerate, on the ridge.

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SHEET 29

STATION	UNIT	DESCRIPTION
J515	GeL	Large blocks, may be subcrop, of SANDSTONE- medium to coarse-grained, clean, brownish-grey, grey-weathering, non-calcareous; thin-bedded, platy, large-scale low-angle cross-laminated.
J601		Here by lake, scattered blocks (no outcrop) of SANDSTONE, occasionally some of CONGLOMERATE. Some blocks are quite large.
J602		SANDSTONE- fine to medium-grained, clean, light brown, light orange-weathering. Thin-bedded. Attitude: 163/13 NE. Non-calcareous.
J603		SANDSTONE- medium to coarse-grained, clean, tough, stylolitic, light grey, with coal spars. Thin to medium-bedded, small-scale low-angle planar cross-beds. Non-calcareous. Attitude: 122/7 NE? Many conglomerate blocks here.
J604	GeL?	Subcrop of SANDSTONE- light grey, clean, fine to medium-grained, scattered granules and pebbles; thin to medium-bedded, platy; one stem impression.

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 80-07-08

SHEET 30

STATION	UNIT	DESCRIPTION	
J401	GeL?	<p>Here a long cliff-line, with low dips to E., of: CONGLOMERATE, pebble/SANDSTONE, medium to coarse-grained (50:50)- interbedded, thick-bedded conglomerate with coarse-grained gritty sand matrix, and brown, calcareous, gritty sandstone. Sandstones are largely thickly parallel-laminated, although there is some planar cross-lamination. Overall fining-upward sequences of conglomerate and sandstone 2 to 3 m thick. Total thickness of unit at least 5 m. Outcrop tends to be brown or orange-weathering. Although maximum pebbles are 80 mm, unit is not as well-cemented as typical Cadomin. Attitude: 162/10 E?</p>	
J402	CdU?	<p>CONGLOMERATE- pebbles to 60 mm in a coarse, clean sand matrix. Well-cemented and tough. Grey-weathering except for locally sheared, rusty-weathering phases.</p>	
J403	CdL?	<p>CONGLOMERATE- pebbles to 40 mm in coarse sand matrix. A few thick-bedded lenses of coarse-grained, conglomeratic sandstone. Well-cemented but generally sheared. Attitude: 170/21 E.</p>	

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 80-07-08SHEET 31

STATION	UNIT	DESCRIPTION
J201	CdL?	CONGLOMERATE- thick-bedded to massive; attitude on a sandstone lens: 155/23 NE.
J202	CdL?	Here the following section: TOP: SANDSTONE- coarse-grained, conglomeratic, with possible large ripples. CONGLOMERATE- pebble, abundant clean, coarse sand matrix; well-cemented; massive. Attitude: 180/36 E.
J203	CdL?	CONGLOMERATE- pebbles to 30 mm, abundant coarse-grained to gritty matrix; thick-bedded at top with large-scale low-angle cross-lamination; massive below. Attitude: 115/54 NE?
J204	BrU?	SANDSTONE, coarse to very coarse-grained/ GRITSTONE, conglomeratic (70:30) - thickly interbedded, clean, non-calcareous brown, brownish-grey-weather- ing sandstone and pebbly gritstone. Some possible large-scale trough cross-beds. Not well exposed. Attitude: 136/43 NE.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 80-07-09SHEET 32

STATION	UNIT	DESCRIPTION
J516	CdL	CONGLOMERATE- pebbles to 35 mm, in sparse matrix of coarse sand. Well-cemented; clasts are in places sheared. Attitude: 152/41 NE.
J517	BrU	SANDSTONE- medium to coarse-grained, with scattered grit; brown; grey-weathering. Dip slope exposure. Non-calcareous. Attitude: 135/36 NE.
J518	BrU	SANDSTONE- medium-grained, clean, light brown, non-calcareous, thin to medium-bedded, planar and trough cross-bedded. Attitude: 158/23 NE.
J519	BrU	SANDSTONE- medium to coarse-grained, clean, light brown, moderately cemented, thinly laminated, thin-bedded, trough cross-bedded, non-calcareous; occasional conglomeratic lenses. Attitude: 156/25 NE.
J520	BrU	SANDSTONE- medium to coarse-grained; scattered pebbles. Brown, thin-bedded, platy. Attitude: 125/10 NE.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 80-07-09SHEET 33

STATION	UNIT	DESCRIPTION
J205		SANDSTONE- medium-grained, clean, light orange-weathering, thin to thick-bedded, large-scale low-angle cross-laminated and trough cross-laminated; scattered pebbles; platy. Attitude: 074/6 SE.
J206		SANDSTONE- coarse-grained, clean, brown, scattered small rounded pebbles; non-calcareous, medium-bedded, trough cross-bedded. Attitude: 038/10 SE.
J207	BrU?	SANDSTONE, coarse-grained, conglomeratic/CONGLOMERATE, pebble, sandy (70:30) - thin to medium-bedded, planar and trough cross-laminated. Attitude: 148/16 SW.
J208	BrU	CONGLOMERATE- pebble, mainly 10 mm size, with abundant sandy matrix. Thick-bedded, with minor low-angle cross-laminated, coarse-grained sandstone, which tends to be conglomeratic. On strike of J207. Not well-cemented. Attitude: 146/23 SW.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 80-07-09SHEET 34

STATION	UNIT	DESCRIPTION
J209	BrU?	SLP back to N. along strike. Here is SANDSTONE- fine to coarse-grained, clean, low-angle planar cross-laminated; thin to thick-bedded, brown, grey to light orange-weathering, with up to 50% thick interbeds of CONGLOMERATE- small pebbles, coarse-grained sand matrix, not well-cemented, thick-bedded to massive, in units of up to 1.5 m thickness. Overall appearance is of large-scale, fining-upward sequences. Attitude: 123/16 SW.
J210	BrU	SANDSTONE- fine-grained, clean, light brown, thin-bedded, platy, with large-scale low-angle planar cross-lamination and some trough cross-lamination. Overlies conglomeratic beds of J209. Attitude: 150/14 SW.
J211	BrU	Here SANDSTONE- as before; attitude now 144/16 SW.
J212	BrU	SANDSTONE- fine-grained, clean, light brown, orange-grey-weathering; scattered granules; very thin-bedded, platy, large-scale low-angle cross-bedded, strongly calcareous. Attitude: 128/25 SW.

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 80-07-09

SHEET 35

STATION	UNIT	DESCRIPTION	
J213	CdL	CONGLOMERATE- pebbles to 40 mm in matrix of coarse sand to grit, well-cemented, sheared. Attitude: 150/68 SW.	
J214	CdU	Here is a long spur of CONGLOMERATE- pebbles to 60 mm in a matrix of coarse sand to grit; well-cemented and in places sheared. Numerous scours; centre of unit consists of 2 m of SANDSTONE- fine to medium-grained, clean, strongly calcareous, trough cross-bedded, not well exposed. Attitude: 165/60 SW.	
J215		Here is exposed the following section: TOP:	
	GeL	SANDSTONE- fine-grained, clean, very thinly-bedded to medium-bedded, large-scale low-angle cross-laminated, some trough cross-lamination; light orange-weathering. Attitude: 163/86 SW.	
	CdU	SANDSTONE- coarse-grained, conglomeratic, with abundant lenses of sandy pebble conglomerate; thick erosional beds.	

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 80-07-09

SHEET 36

STATION	UNIT	DESCRIPTION
		CONGLOMERATE- pebble, abundant coarse sand to grit matrix; pebbles have mode of 20 mm, maximum of 70 mm. Well cemented; massive.
		COVERED INTERVAL- to top of section at J216
J216	CdL	CONGLOMERATE- pebbles to 75 mm in a sparse matrix of coarse sand to granules. Well-cemented; slightly sheared appearance.
J217	CdL	CONGLOMERATE- pebbles to 65 mm in a matrix of grit and granules. Well-cemented. Attitude: 128/52 SW.
J218	CdL	CONGLOMERATE as before. Here beds roll around to west into trough of a syncline, while to east appears to be a ridge of Brenot. Attitude: 150/60 SW.
J219	CdL	CONGLOMERATE as before. Attitude: 104/15 N.
J220	CdL	CONGLOMERATE as before. Attitude: 152/58 NE.

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 80-08-09

SHEET 37

STATION	UNIT	DESCRIPTION	
J221		CONGLOMERATE- pebbles to 40 mm in a matrix of coarse sand; slightly	
		sheared. Attitude: 143/57 NE.	
J222	CdU	CONGLOMERATE- pebbles to 35 mm in an abundant matrix of coarse sand.	
		Well-cemented, sheared. Attitude: 133/53 NE.	
J223	CdU	CONGLOMERATE- pebbles to 40 mm in a locally abundant matrix of coarse	
		sand to grit. In places this unit is well-sorted and lacks matrix.	
		Attitude: 152/50 SW.	
J224	CdU	SANDSTONE- medium-grained, clean, conglomeratic, overlying CONGLOMERATE-	
		pebble. Here is the axis of an anticline. Attitude of sandstone on	
		SW limb. 175/50 W.	
		Across the gully to the west are orange-weathering, platy sandstones of	
		the Lower Gething.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 80-07-12

SHEET 38

STATION	UNIT	DESCRIPTION
J404	GeL	From J401 to N along scarp. Here CONGLOMERATE/SANDSTONE; conglomeratic- as at J401; conglomerate here is coarser: maximum pebble is 80 mm.
J405	GeL	SLP continued along scarp to N. Here CONGLOMERATE/SANDSTONE- as at J401. Sandstone here is coarse-grained, with scattered granules; clean, light orange-weathering, thin-bedded, low-angle cross-bedded, platy. Attitude: 111/13 SW?
J605		From J405, ran flag line at 090°. Here on face of cuesta is SANDSTONE- medium to coarse-grained, well-cemented, "welded" appearance (compare to lowermost Gething at Sukunka). Medium-bedded, with large ripples and low angle cross-laminae; grey, grey-weathering; stylolitic. Large bark chips. Attitude: 123/18 NE. Above this sandstone on the hill slope is SILTSTONE- brownish-grey, orange-weathering, platy, with delicately preserved plant fragments (compare to eelgrass) and the occasional rootlet. Strongly calcareous.

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 12 JULY 1980 SHEET 39

STATION	UNIT	DESCRIPTION
J606		SLP continued at 090 ^o . Here is a 1 to 2m scarp of SANDSTONE - medium to coarse-grained with scattered grit and small pebbles. Moderately cemented, light grey, grey-weathering, thick-bedded, block, patchily calcareous.
		Attitude: 154/4 NE
J607		SLP to south along continuous outcrop of sandstone. Here atop hill 1432 is SANDSTONE-coarse-grained, clean, moderately-cemented, scattered grit, light grey, with reddish-weathering patches. Non-calcareous, medium to thick hummocky beds;
		Attitude: 143/12 NE
J608		SLP to SE along continuous outcrop of sandstone. Here SANDSTONE-medium grained, clean, moderately cemented, pale brick-red-weathering, thick-bedded, some trough cross-lamination. Attitude 010/13E. From here, outcrop swings easterly. To south, a rock island in a swamp appears to be made up of this unit; which probably extends to the SE towards J603.

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 12 JULY 1980SHEET 40

STATION	UNIT	DESCRIPTION	
J609		From J606 at 90 ⁰ : SANDSTONE-fine to very fine-grained, brown-weathering, thin irregular platy beds. Small-scale, ripple-drift cross-laminated. Some mica scales on bedding, and tiny plant fragments. Strongly calcareous.	
J610		SLP along line at 090 ⁰ . Here along ridge crest is subcrop of SANDSTONE-medium-grained, clean, grey-weathering.	
J611	Gel	SANDSTONE-very fine-grained, silty, orange-weathering, slightly calcareous rippled, with carbonaceous and micaceous laminae. Platy to rubbly; very thinly-bedded. Just below hill top. Attitude: 015/12 E	
J612	Gel	SLP continued SE along ridge crest, with scattered subcrop of rubbly orange beds. Here is subcrop of SILTSTONE-argillaceous, brownish-orange-weathering, rubbly, rooty, non-calcareous.	

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST BICKFORDDATE 12 JULY 1980 SHEET 41

STATION	UNIT	DESCRIPTION
J613		SANDSTONE-very fine-grained, orange-weathering, very thin-bedded, low-angle cross-bedded, some small troughs. Strongly calcareous.
		Attitude: 059/6 NW
J614		From J610 @ 090 ⁰ : SANDSTONE-fine to very fine-grained, silty, rooty, strongly calcareous, dark grey, orange-grey-weathering, very thin-bedded, platy. Attitude: 002/11 E
J615		From J614 @ 090 ⁰ : Here hill covered with white lichen, underlain by: SANDSTONE-fine-grained, well cemented, with argillaceous or silty laminae. Light grey, tan-weathering, rippled, medium-bedded, very strongly calcareous. Attitude: 093/15 N
J616		From J615 @ 000 ⁰ , ran flag line. Here subcrop of SANDSTONE-very fine-grained, with dark grey silty laminae. Rooty, thin-bedded, grey-weathering non-calcareous, blocky.

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 13 JULY 1980SHEET 43

STATION	UNIT	DESCRIPTION
J620	Gel	SANDSTONE: fine-grained, clean, buff-weathering, very thin irregular platy beds. Trough cross-laminated; a few roots. Strongly calcareous. Attitude: 158/11 NE
J621	Gel	SANDSTONE-coarse-grained, clean, light grey, grey-weathering, thick-bedded, large-scale low-angle cross-laminated; non-calcareous stylolitic. Attitude: 113/14 NE
J622	Gel	SANDSTONE-very fine-grained, silty, very thin-bedded, platy, ripple-drifted, light grey, tan-weathering, very strongly calcareous. Attitude: 118/12 NE
J623		SANDSTONE: fine-grained, clean, medium to thick-bedded, large-scale low angle cross-laminated, light grey, light orange to grey-weathering: Attitude: 038/6 SE
J521		Here in small stream just north of alt. line, is SANDSTONE-fine to very fine-grained, clean, thin-bedded, platy, medium grey, bluish-grey-weathering. Attitude: 105/11 NE

Attitude: 105/11 NE

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 13 JULY 1980 SHEET 44

STATION	UNIT	DESCRIPTION	
J522	Ge1	SANDSTONE:-fine-grained, clean, non-calcareous, light brown-weathering, a few scattered pebbles and granules; thin-bedded, large-scale low-angle cross-bedded. Attitude: 125/25 NE	
J523		CONGLOMERATE-granules to 100 mm pebbles in abundant coarse sand matrix. Well-cemented. Attitude: 140/33 NE	3m+
J524	Bru	SANDSTONE-medium to coarse-grained, clean, large-scale, low-angle, cross-laminated, thick-bedded, moderately cemented. Brown-weathering. Bases of beds are pebbly. Patchily calcareous. Attitude: 155/14 NE	3m+
J525	Bru	SANDSTONE-medium-grained, clean, brown, grey-weathering, non-calcareous, large-scale low-angle cross-laminated, thick bedded. Attitude: 143/22 NE	
J526		Here helipad on seismic line; no outcrop line bears 050° to NE; 227° to SW.	

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 13 JULY 1980 SHEET 46

STATION	UNIT	DESCRIPTION	
J80	Bru	SANDSTONE-medium-grained, thick-bedded, large-scale trough cross-laminated, reddish-grey weathering.	
		Attitude: 030/14 NW	
J81	Bru?	Here at creek, steep dip slope of SANDSTONE, very fine-grained/SILTSTONE-interbedded, argillaceous throughout, thin-bedded, blocky to rubbly; rooty. Some notably-bleached rooty mudstones.	
		Attitude: 146/64 NE	
J82	Bru?	SANDSTONE-medium-grained, clean, brown, light brown weathering, small-scale low-angle cross-laminated, medium-bedded, blocky. Plant stem impressions.	
		Attitude: 168/60 SW	
J101		SLP and here by swamp, no outcrop. Seismic line turns to 233°. Could build helipad here.	

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 13 JULY 1980SHEET 47

STATION	UNIT	DESCRIPTION	
J102		SANDSTONE-medium-grained, brown, thick-bedded, large-scale low-angle cross	
		laminated, non-calcareous.	
		Attitude: 146/72 SW Heliport here.	

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 14 JULY 1980SHEET 48

STATION	UNIT	DESCRIPTION	
J624		SANDSTONE-fine to very fine-grained, thick-bedded, grey-weathering. Attitude: 175/12E	
J625		SLP, here no outcrop.	
J626		SLP, here no outcrop.	
J627	Gel	SANDSTONE-fine to very fine-grained, clean, thick-bedded, large-scale low-angle cross-laminated, blocky, orange-weathering. Attitude: 015/SE	
J628		SLP, here no outcrop.	
J629		SLP, here no outcrop.	
J630	Gel	SANDSTONE-fine-grained, thick-bedded, large-scale low-angle cross- laminated, orange-weathering, moderately calcareous. Attitude: 012/11E	

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 14 JULY 1980SHEET 49

STATION	UNIT	DESCRIPTION
J701		SLP, here no outcrop.
J702		SLP, here no outcrop.
J703	Gel?	SLP no outcrop. Here under roots of a fallen tree are platy fragments of SANDSTONE-fine-grained, grey-weathering, and SANDSTONE-very fine-grained, orange-weathering.
J704		SLP, here no outcrop.
J705		SLP, and here at break in slope, no outcrop.
J706	Gel	Here in bank is SANDSTONE-a very fine-grained, thick-bedded, large-scale low-angle platy cross-lamination; clean, orange-weathering. Dip appears to be low to E.
J707	Gel	SANDSTONE-very fine-grained, thick-bedded, large-scale low-angle cross-laminated, orange-brown-weathering, platy.

Attitude: 040/15 SE

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TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 14 JULY 1980SHEET 50

STATION	UNIT	DESCRIPTION
J708	Gel?	Here above 10m ⁺ scarp of SANDSTONE-medium-bedded to massive, reddish-orange-weathering.
J709		SLP followed top of cliff. Here slope turns around to SE.
J710	Gel?	SANDSTONE-very fine to medium-grained/CONGLOMERATE, small pebbles-well-cemented; sandstones are brown. This unit does not have the typical "sheared" appearance of the Cadamin and is likely a channel-fill in Gething. Attitude: 176/37 E? May not be in place.
J711	Gel?	SANDSTONE-fine-grained, brown-weathering, blocky, well-cemented Attitude: 150/43 NE
J712		SLP and here in dry gully no outcrop.
J801		SLP no outcrop. Here in creek of elev. 938, outcrop of: SANDSTONE, very fine-grained, silty/MUDSTONE (70:30)-interlaminated, burrowed, brown-weathering.

Attitude: 062/10 SE

TRAVERSE NOTES

PROPERTY JILG GEOLOGIST C. BICKFORD DATE 28 JULY, 1980 SHEET 52

STATION	UNIT	DESCRIPTION
J406	BrU	SANDSTONE-coarse-grained, moderately cemented, grey-weathering, trough cross-bedded, non-calcareous, thick-bedded to massive, abundant gritty lenses. Attitude: 172/21E
J407	BrU	SANDSTONE-medium to coarse-grained, moderately cemented brown, grey-weathering, non-calcareous, lenses of small-pebble conglomerate. Trough cross-bedded, medium-bedded. Attitude: 135/30 NE(poor)
J408		SLP and here at beginning of gully, no outcrop.
J409	BrU	SANDSTONE-fine to medium-grained, clean, moderately cemented, brown, orange brown-weathering, moderately calcareous. Thin low-angle cross-laminated beds. Attitude: 173/58W
J410	BrU	SANDSTONE-fine-grained, clean, moderately-cemented, brown, brown-weathering, medium-bedded, large-scale trough or low-angle cross-bedded, moderately calcareous. Attitude: 005/53W

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 28 JULY 1980

SHEET 53

STATION	UNIT	DESCRIPTION	
J411		SANDSTONE-fine to medium-grained, moderately cemented, brown-weathering, thick-bedded to massive; blocky.	
		Attitude: 163/47 W	
J412	BrU	Here in bank is exposed a coal seam and its floor. A trench could be readily dug here. The following section was measured: TOP:	
		COAL-soft, weathered, pulverized, top not seen	0.35+
		SANDSTONE-very fine-grained, silty, brown, blocky, rooty, grading down to MUDSTONE-medium brown, silty, rubbly.	0.8
		MUDSTONE-rooty, listricated, "bleached", grading down to SILSTONE-dark grey, sandy at base.	1.2m
		SANDSTONE-very fine-grained, silty, grey at top, becoming brown at base. Thin irregular platy beds; rooty, particularly at top.	1.3m+

Attitude: ^{115°}768/61 W at top.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C. BICKFORDDATE 28 JULY 1980SHEET 54

STATION	UNIT	DESCRIPTION	
J413	BrU	SANDSTONE-medium to coarse-grained, clean, some grit. Brown, brownweathering, moderately cemented, thick-bedded, large plant stem impressions.	4m+
		Attitude: 153/60 SW	
J414	BrU	SANDSTONE-coarse-grained, gritty, thick irregular beds, brown, grey-weathering, moderately to well-cemented.	
		Attitude: 158/53 SW	
J415	CdL? (could be BrU)	CONGLOMERATE-granule to small pebble; abundant medium to coarse sand matrix. Grey-weathering, moderately to well-cemented, medium to thick-bedded.	
		Attitude: 012/35 W	
J416	BrU?	SLP nearly continuous outcrop of CONGLOMERATE as shown on map. Here is CONGLOMERATE-very sandy, with pebbles to 30 mm. Moderately to well-cemented; lacks shearing that is so evident in the Cadomin. Could be Brenot. Stream flows down what is essentially a dip slope, rising slowly upsection to W.	10 to 15m

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 28 JULY 1980

SHEET 55

STATION	UNIT	DESCRIPTION	
J417		<p>SANDSTONE-light grey, medium to coarse-grained, well-cemented, tough, siliceous, clean, almost a quartzite. Some CONGLOMERATE-small and medium chert pebbles in an abundant coarse sand matrix. Moderately to well-cemented.</p>	6m+
		<p>Outcrop is strongly jointed, obscuring bedding. Here are a number of small wrinkles in the bedding, perhaps indicating proximity to a fault. Some channeling.</p> <p style="text-align: center;">Attitude: 157/62 NE</p>	
J418		<p>MUDSTONE-dark brown, silty, rubbly, spheroidal-weathering, non-calcareous, some ferruginous concretions.</p> <p style="text-align: center;">Attitude: 130/38 NE</p>	
J419		<p>SANDSTONE-fine-grained, brown, thin to thick-bedded, some small scale trough cross-beds, one possible pelecypod. Moderately cemented.</p> <p style="text-align: center;">Attitude: 060/18 SE</p>	

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 28 JULY 1980

SHEET 56

STATION	UNIT	DESCRIPTION	
J420		Here at junction of streams, no outcrop.	
J421		<p>SLP many landslides into stream, but no outcrops. Here on west bank is SANDSTONE-very fine-grained, silty, brown, medium-bedded, moderately cemented.</p> <p>Attitude: 143/78 NE(tops not known)</p>	
J422		<p>Here on east bank of stream is SANDSTONE-fine to very fine-grained, dark brownish-grey, brown-weathering, rooty, blocky, thick to medium-bedded, with interbeds of MUDSTONE-dark grey, rubbly, locally carbonaceous, with minor COAL (not over 0.05 m thick).</p> <p>Attitude: 132/54 NE</p>	
J423		<p>Since J421, continuous outcrop of SANDSTONE-with mudstone interbeds like those of J422.</p> <p>Attitude: 149/88 NE</p>	
J301		<p>SLP no outcrop: abundant log jams and sandstone boulders. Here at junction of creeks still no outcrop.</p>	

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 28 JULY 1980

SHEET 57

STATION	UNIT	DESCRIPTION	
J302		SANDSTONE-fine to coarse-grained, clean brown, brown to grey-weathering	
		medium to thick-bedded, moderately cemented; includes 0.50m COAL seam	
		Attitude: 143/64 NE	
J303		MUDSTONE-dark, brownish-grey, brown-weathering, blocky, spheroidal-	
		weathering, silty. Jointing 006/41W. Bedding 140/50 NE; some bedding	
		planes slickensided.	
J304		SILTSTONE-brown/MUDSTONE-dark grey, silty-interbedded, block, strongly	
		jointed. Attitude: 132/53 NE	
J305		SANDSTONE-very fine-grained light orange-weathering, silty, with thin	2m+
		rubbly interbeds of dark grey siltstone. Thin planar beds with ripples	
		and low-angle cross-lamination.	
		Attitude: 128/53 NE Underlain by SILTSTONE/SANDSTONE, very	
		fine-grained/MUDSTONE, carbonaceous thinly interbedded.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 28 JULY 1980

SHEET 58

STATION	UNIT	DESCRIPTION	
J306		SANDSTONE-fine to very fine-grained, silty, brown-weathering, thick planar beds. Moderately-cemented.	
		Attitude: 130/42 NE	
J307		SANDSTONE-very fine-grained/SILTSTONE/MUDSTONE, silty-interbedded; sandstones are orange-weathering, silty, vaguely rippled but on the whole appear unlaminated and blocky. SILTSTONES are dark grey to black, sandy, with scattered tiny burrows. MUDSTONES are dark grey, grey-weathering rubbly. Attitude: 137/32 NE	
J308		SANDSTONE-fine-grained, moderately cemented, clean, thick-bedded, blocky, light tan-weathering. Attitude: 125/45 NE	
J309		Here SANDSTONE-as before, with 0.15m seam of COAL and MUDSTONE. Attitude: 132/58 NE	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. BICKFORD

DATE 28 JULY 1980

SHEET 59

STATION	UNIT	DESCRIPTION	
J310		SANDSTONE-thickbedded, appears similar to beds of J309.	
J311		SLP and here no outcrop; only sandstone boulders and deadfall.	

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 29 July 1980SHEET 60

STATION	UNIT	DESCRIPTION
J424	CdU	CONGLOMERATE- pebbles to 40 mm in matrix of coarse sand to granules. Tough, well-cemented.
J425	CdL	SANDSTONE- coarse to very coarse-grained, gritty, grading down to CONGLOMERATE- pebble, with abundant very coarse sand matrix. Tough, well- cemented. Maximum pebble size 30 mm. Attitude: (fair) 147/14 NE.
J426	BrU	SANDSTONE- medium to coarse-grained, trough cross-laminated, medium to thick-bedded, moderately cemented, non-calcareous, brown, greyish-brown- weathering. Attitude: 036/12 SE.
J427	BrU	SANDSTONE- fine-grained, thin-bedded, platy, trough cross-bedded, modera- tely cemented, brown-weathering, non-calcareous. Attitude: 062/24 NW.
J428	BrU	SANDSTONE- medium-grained, clean, moderately cemented, light orange- weathering, medium-bedded, trough cross-bedded, tops to SW, platy, non- calcareous. Attitude: 158/68 SW.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 29, July 1980 SHEET 61

STATION	UNIT	DESCRIPTION
J429	BrU	SANDSTONE- fine to medium-grained, clean, moderately cemented, thin irregular beds, platy, brownish-grey-weathering, mildly calcareous. Attitude: 165/85 SW.
J430	BrU	SANDSTONE- medium-grained, clean, orange-grey-weathering; moderately cemented, thin-bedded, trough cross-bedded, platy, non-calcareous. Attitude: 150/72 SW.
J431		Here at stream and SLP, no outcrop. Very little brush here, in black spruce forest.
J432		SLP no outcrop but many landslides. Here 2 m+ of SANDSTONE- fine to very fine-grained, silty, medium-bedded, blocky, planar-bedded, generally devoid of lamination although some trough cross-lamination indicates tops to NE. Non-calcareous, moderately-cemented, grey, grey-weathering. Some thin interbeds of grey, rubbly siltstone. Attitude: 141/79 NE. Below this unit is approximately 5 m of SANDSTONE- fine to medium-grained, thick-bedded, blocky.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 29 July 1980SHEET 62

STATION	UNIT	DESCRIPTION
J433	BrU	Here in creek the following section: TOP:
		SANDSTONE- fine to medium-grained, clean, thick-bedded to massive.
		Blocky; orange-weathering. Very large-scale trough cross-bedded.
		Moderately calcareous; abrupt.
		SANDSTONE- very fine-grained, silty, thin planar beds, platy, light
		orange-brown-weathering, rooty. Attitude: 156/61 NE.
J312		SLP nearly continuous outcrop of SANDSTONE- as before, showing several
		fining-upward cycles, each about 5 m thick, of massive or thick-bedded,
		fine to medium-grained sandstone, passing upwards to thin-bedded, platy,
		silty, very fine-grained, often rippled sandstones. One 0.25 m bed of
		dark grey mudstone, with coaly lenses at top. The basal massive sand-
		stones are generally large-scale low-angle cross-laminated.
		Attitude: 136/57 NE.

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C. L. RICEFORD

DATE 30 July 1980

SHEET 63

STATION	UNIT	DESCRIPTION	
J83		SANDSTONE- fine-grained, clean, thin platy rippled beds, large-scale low-angle crossbedded, moderately to well-cemented, orange-brown-weathering. Non-calcareous. Attitude: 158/68 NE.	
J84		Here in clearing is small exposure showing the following section: MUDSTONE- dark brown, orange-weathering, rubbly. COAL- weathered. MUDSTONE- dark grey, carbonaceous, rubbly; gradational. MUDSTONE- dark grey to brown, brown-weathering, silty, rubbly to platy. Attitude: 145/85 NE.	
J85		SANDSTONE- fine-grained, clean, moderately cemented, non-calcareous, orange-weathering, thin planar platy beds, some small-scale planar cross-beds. Attitude: 143/63 NE.	
J86		SANDSTONE- very fine to fine-grained, silty, platy to rubbly, orange-weathering, strongly calcareous, very thin irregular rippled beds, some large-scale low-angle cross-beds. Not well-exposed, moderately cemented, soft. Attitude: 134/47 NE.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 30 July 1980

SHEET 64

STATION	UNIT	DESCRIPTION
J87		SANDSTONE- medium-grained, moderately cemented, brown, light brown to gold weathering, thin-bedded, trough cross-bedded, non-calcareous. Attitude: 142/64 NE.
J88		SANDSTONE- fine to medium-grained, brown; weathering, moderately cemented, non-calcareous, thin platy beds, large-scale trough crossbeds. Attitude: 138/66 NE.
J89		SANDSTONE- medium to coarse-grained, clean, brown-weathering, moderately cemented, non-calcareous massive at base, thin bedded with trough crossbeds at top. Attitude: 141/71 NE.
J90	GeL	SANDSTONE- fine-grained, clean siliceous, large ripples, thin to medium-bedded, non-calcareous, grey-weathering. Attitude: 119/26 NE.
J1006	GeL	SANDSTONE- medium to coarse-grained, clean siliceous, well-cemented, thick bedded to massive, stylolitic, grey, grey-weathering, large-scale low-angle cross-laminated. Coal spars. Forms prominent scarp. Outcrop

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 30 July 1980

SHEET 65

STATION	UNIT	DESCRIPTION
		describes a shallow syncline; attitude at trough 030/9 SE. Axial trace bears 120°.
J529	GeL	SANDSTONE- coarse to very coarse-grained, clean, siliceous, moderately to well-cemented, grey, grey-weathering, non-calcareous, thick-bedded, large scale planar and some trough cross-lamination. Attitude: 106/20 NE.
J530	GeL	CONGLOMERATE- granules, some small pebbles, in coarse to very coarse sand matrix. Clean, moderately to well-cemented, thick-bedded, large-scale low-angle cross-bedded. Attitude: 11/15 NE. NOTE: many small outcrops, nearly a dip slope, shown on map as one large outcrop.
J531		SANDSTONE, coarse-grained/GRITSTONE- interbedded; lenses of granule conglomerate throughout. Appears to be dip slope; cannot ascertain accurate strike and dip.
J1104		Here on seismic line at shot point is COAL bloom.

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 31 July 1980

SHEET 67

STATION	UNIT	DESCRIPTION
J1007	CdL	CONGLOMERATE- pebbles to 40 mm, in abundant matrix of coarse sand to grit. Massive. Attitude: 154/22 NE.
J1008	CdU	CONGLOMERATE- as at J1007 although here maximum pebbles are 50 mm; thick-bedded with interbeds of sandstone, medium to coarse-grained, clean, conglomeratic, planar cross-bedded. Attitude: 126/22 NE.
J1009	GeL	SANDSTONE- fine to medium-grained, clean, moderately cemented, non-calcareous, orange-weathering. Massive at base, becoming thin to medium-bedded platy and low-angle cross-laminated at top. Attitude: 170/34 E?
J1010	CdL	CONGLOMERATE- pebbles to 40 mm, in abundant coarse sand, to grit matrix. Well-cemented, slightly sheared, thick-bedded. Attitude: 129/43 NE.
J1011	BrU	Here in gully is coal spoil. Seam approximately 50 cm thick, with black, carbonaceous mudstone roof and brown mudstone floor. Location approximate.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 31 July 1980 SHEET 68

STATION	UNIT	DESCRIPTION
J1012	BrU	SANDSTONE- coarse-grained, clean, moderately cemented, brown, grey- weathering, dune cross-bedding; medium-bedded. Non-calcareous. Attitude: 115/30 NE (fair).
J1013	BrU	SANDSTONE- coarse-grained, clean, moderately-cemented, dark grey- weathering, non-calcareous, thin-bedded, platy. Attitude: 100/33 NE (fair)
J901		Here a large dip slope outcrop of SANDSTONE- very fine to fine-grained, silty, dark grey, thin-bedded, platy, non-calcareous, moderately- cemented. Rooty. Attitude: 154/32 NE.
J1014	BrU	SANDSTONE- medium-grained, clean, moderately-cemented, non-calcareous, thin-bedded and large-scale low-angle cross-laminated at top. Thin to medium-bedded towards base. Light orange-brown-weathering. Attitude: 163/15 SW.
J1015		SANDSTONE- as at J1014. Attitude: 035/11 NW.

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TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 31 July 1980

SHEET 69

STATION	UNIT	DESCRIPTION
J1016		SANDSTONE- as at J1014 and J1015. Attitude: 135/19 NE.
J902		SANDSTONE- fine-grained, clean, moderately to well-cemented. Orange- weathering, thin to medium-bedded, non-calcareous, platy to blocky. Attitude: 130/22 NW.
J903	BrU?	SANDSTONE- medium-grained, clean, moderately-cemented, non-calcareous, brown, light brownish-grey-weathering. Medium-bedded, large-scale low- angle cross-bedded. Attitude: 150/60 SW.
J904	BrU?	SANDSTONE- fine-grained, clean, moderately-cemented, non-calcareous, light grey, orange-weathering, thin to medium-bedded. Dip slope: Attitude: 140/13 SW.
J905	BrU?	SANDSTONE- medium-grained, clean, moderately-cemented, non-calcareous, medium-grey, orange-weathering, thin to medium-bedded. Dip slope: Attitude: 105/21 SW.

TRAVERSE NOTES

PROPERTY JILGGEOLOGIST C.L. BICKFORDDATE 20 August 1980 SHEET 71

STATION	UNIT	DESCRIPTION	
J91		SANDSTONE- fine to very fine-grained, dark grey, clean, moderately-	
		cemented, ripple-drift cross-laminated, thick-bedded. Attitude: 143/46 SW.	
J92		SANDSTONE- fine to medium-grained, brown, clean, moderately-cemented,	
		trough cross-bedded. Attitude: 134/60 SW.	
J93		SANDSTONE- fine-grained, clean, moderately-cemented, light grey, thick-	
		bedded, trough cross-bedded. Attitude: 135/39 NE.	

TRAVERSE NOTES

PROPERTY JILG

GEOLOGIST C.L. BICKFORD

DATE 22 August 1980 SHEET 72

STATION	UNIT	DESCRIPTION	
J1107	GeL?	Coal and carbonaceous mudstone zone, visible from air. Sample of coal:	
		J7428X7.	
J1108	GeL?	Coal and carbonaceous mudstone zone, visible from air. Not sampled.	
		Probably same as at J1107.	

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 21/80SHEET 1

STATION	UNIT	DESCRIPTION
T1		Conglomerate, medium grey sandstone matrix, pebbles to cobbles, minor boulders, generally light coloured quartzites, non calcareous, thickness approximately 12 m. $340^{\circ}/7^{\circ}\text{E}$.
T2		Conglomerate, similar to T1, pebbles with some cobbles, abundant light coloured quartz and dark cherts, some sand lenses, non calcareous, large cross bedding. Thickness approximately 6 m. Strike due north/ 24°E .
T3		Sandstone medium grey orange colouration, finely bedded, low angle, cross bedding, abundant pebbles throughout, calcareous. Over lain by conglomerate bed, thickness 1.5 m. $345^{\circ}/4^{\circ}\text{W}$.
T4		Sandstone, medium grey, orange colouration, medium grained, very calcareous, thinly bedded, flaggy, low angle cross bedding, small scale faulting and shearing evident. $351^{\circ}/19^{\circ}\text{E}$.
T5		Sandstone, medium grey, massive, thickly bedded, some orange colouration, 2 m plus thickness. Overlain by thinly bedded flaggy sandstones, very orange

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 21SHEET 2

STATION	UNIT	DESCRIPTION
T5 cont'd		in portions, finer grained, fine to medium grained, cross bedded, calcareous, thickness 7 m, total outcrop thickness 9 m+. 276°/11°N.
T6		Conglomerate, gritty, small pebbles of cherts and light coloured quartz, non-calcareous, medium grey, sandstone matrix, abundant near vertical sheering suggests a fault, possible fault attitude 270°
T7		Sandstone, medium grey, buff weathering, calcareous, fine plant impressions, fine to medium grained, some fine bedding evident in massive, grades down section to very siliceous sandstone, dark grey, slickensides. Flat lying to gentle NE dip.
T8		Sandstone, medium grey, buff weathering, flaggy, thinly bedded, some large scale cross bedding, fine carbonaceous plant fragments along bedding planes. 291°/6°NE.
T9		Sandstone, dark to medium grey, dirty, small bright coal fragments scattered throughout, generally massive with some irregular bedding, medium grained, 2 m section. 273°/37°S.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 21SHEET 3

STATION	UNIT	DESCRIPTION
T10		Sandstone, medium grey, buff weathering, fine to medium grained, abundant carbonaceous debris and plant impressions, block may not be in place.
T11		Sandstone, grey, orange, to buff weathering, flaggy, large scale cross bedding, becoming massive near base, 2 m section, Underlain by thin ripple bedded finer sequence, with muddy laminae in dirty, argillaceous sandstone, 1 m section. This underlain by a massive sandstone sequence, medium grained, 2 m thick. All sandstone is very calcareous with orange coloured protions. 270°/15°N.
T12		Sandstone, medium grey, buff weathering, generally massive with some thin bedding near the base, medium grained. Calcareous, cherty, gritty conglomerate approximately .30 m in thickness, bedding below the conglomerate lense is very contored structurally or may be caused by high energy sedimentation in-filling troughs etc. The beds vary from nearly horizontal to 60° dip in various directions. Outcrop thickness 6 m. 233/11°NW.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 21SHEET 4

STATION	UNIT	DESCRIPTION
T13		Sandstone, medium grey, buff weathering, fine grained to very fine grained, iron staining, small plant impressions along bedding planes, calcareous, thinly bedded. $264^{\circ}/9^{\circ}\text{N}$.
T14		Sandstone, medium grey buff to orange weathering, fine to very fine grained, finely bedded, flaggy, very calcareous. $245^{\circ}/13^{\circ}\text{NW}$.
T15		Conglomerate, gritty, pebbles with some cobbles, siliceous sandstone matrix, abundant sheer planes and slickensides. Approximately 20 m of total outcrop thickness. $340^{\circ}/45^{\circ}\text{W}$.
T16		Conglomerate, cobbles, pebbles and minor boulders, becomes coarser down section, 4 m section. $354^{\circ}/40^{\circ}\text{W}$.
T17		Conglomerate, similar to T16, abundant slickensides and stress evident in pebbles and matrix.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 22SHEET 5

STATION	UNIT	DESCRIPTION
T18		Sandstone, medium-dark grey, buff-orange weathering, calcareous, thick low angle cross bedding, fine to very fine grained, generally massive appearance. 1 m section (strike may be on cross-bed). 196°/9°E.
T19		Sandstone, medium to dark grey, 20 cm resistant beds of fine-grained sandstone, small scale fine bedding. These beds are separated by finer argillaceous sandstone beds, approximately 10 cm thick, finely bedded 1.5 m section, calcareous. 182°/18°W.
T20		Sandstone, medium grey, minor orange colouration, medium grained massive, non-calcareous, resistant.
T21		Sandstone, medium grey, some darker grey, buff-grey weathering, non-calcareous, medium grained, with several pebble conglomerate bands, 6 m section. 344°/44°E.
T22		Sandstone/Conglomerate, (Along trend with T21), medium grey to dark grey, some orange-buff weathering near base, calcareous, large plant impressions,

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 22SHEET 6

STATION	UNIT	DESCRIPTION
T22 cont'd		pebbles and some cobbles scattered throughout; contorted bedding. 336°/22°NE.
T23		Sandstone/conglomerate, medium to dirty grey sandstone with minor orange colouration, medium grained with scattered pebbles, some large scale cross-bedding, finer bedded up section, calcareous underlain by 1 m pebble conglomerate, more conglomerate down section, large cobbles. 315/16 NE.
T24		Sandstone (On trend overlying T23) well-bedded, low angle cross-bedding medium grained calcareous. 302°/35°NE.
T25	Coal	Conglomerate, cobbles, pebbles and some boulders, minor sandy lenses, non calcareous, (forms peak of ridge, large cliff 18 m). 196°/29°E.
T26	Coal	Sandstone/Conglomerate, interbedded medium grey, dirty grey appearance, medium grained, pebbly sandstone banded with fine to coarse pebble conglomerate, (underlies T25) 3 m section. 332°/32°NE.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 22SHEET 7

STATION	UNIT	DESCRIPTION
T27	Minnes	Sandstone, medium grey, light orange to buff weathering, thickly bedded with some flaggy weathering, fine to medium grained. 4 m section.
T28		Conglomerate and coarse sandstone overlying fine sandstone, medium grey, buff weathering, finely bedded, very small scale cross bedded, calcareous 1 m thick. 331°/30°NE.
T29		Top of Conglomerate ridge.
T30		Sandstone band within conglomerate ridge medium grey, non calcareous except on bedding surfaces, large scale cross bedding, medium grained. 335°/33°NE.
T31		Conglomerate/Sandstone, dip decreasing to 11°NE.
T32		Conglomerate ridge, very sheared, slickensides. Ridge attitude 306°.
T33		Sandstone, medium to dark grey, well sorted, minor orange coloration, non

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 22SHEET 8

STATION	UNIT	DESCRIPTION
T33 cont.		calcareous, massive, medium grained.
T34		Sandstone/Conglomerate, interbedded sandstone and conglomerates, 30 cm beds, pebble conglomerate with minor cobbles, sandstone medium to coarse grained with scattered pebbles, non calcareous. $310^{\circ}/25^{\circ}\text{NE}$.
T35		Sandstone, medium grey, buff weathering, some orange colouration, medium grained, large scale cross bedding, thickly bedded in part, calcareous, 4 m thick. $321^{\circ}/20^{\circ}\text{NE}$.
T36		Sandstone, medium grey, buff weathering, fine to very fine grained, fine bedding, small scale ripples, abundant carbonaceous debris and impressions throughout, East side of fault - minor coal bloom on T36. $328^{\circ}/71^{\circ}\text{NE}$.
T37		Sandstone, medium grey, buff and minor orange weathering, fine grained, thickly bedded, abundant shearing, calcareous, overlain by dark grey, silty mudstone. $315^{\circ}/42^{\circ}\text{NE}$.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 22SHEET 9

STATION	UNIT	DESCRIPTION
T38		Nose of syncline with probable fault immediately east, the fault cuts off the eastern limb of the syncline. 20m of conglomerate underlain by grey, buff to orange weathering sandstone, argillaceous, fine grained, faint fine bedding. East limb of syncline $290^{\circ}/40^{\circ}\text{SW}$.
T39		Sandstone, (ridge on trend with T34) medium grey, medium to coarse grained, buff to orange weathering, calcareous, irregular flaggy bedding. $330^{\circ}/20^{\circ}\text{NE}$.
T40		Sandstone, medium grained, calcareous on bedding planes, flaggy appearance. $332^{\circ}/9^{\circ}\text{NE}$.
T41		Sandstone, medium grey, buff and orange weathering, flaggy, medium grained, calcareous, large scale cross bedding, 2 m section. $333^{\circ}/14^{\circ}\text{NE}$.
T42		Sandstone, medium grey, buff weathering, orange colouration, flaggy, medium grained, non calcareous. $290^{\circ}/29^{\circ}\text{SW}$

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 22SHEET 10

STATION	UNIT	DESCRIPTION
T43		Sandstone, grey with orange colouration, grading from medium to coarse grained, large scale cross bedding, thin and thick beds, non calcareous some flagging bedding. $295^{\circ}/18^{\circ}\text{SW}$.
T44		Sandstone, grey, orange colouration, generally medium grained, some coarse grained, large scale, cross bedding, minor elasts, calcareous, slickensides, contorted bedrock. $335/43^{\circ}\text{SW}$.
T45		Sandstone, similar to T44, medium grained, Approximately 9 m of Sst. $325/52^{\circ}\text{SW}$.
T46		Sandstone (13 m outcrop) top 3m flaggy with the bottom 10m varying from massive to irregular bedded to large scale cross bedding, high velocity bedding with bedding varying from near horizontal to angles up to 60° . large plant impressions in portions of the outcrop, pebbles bands, minor slickensides. $315/15^{\circ}\text{NE}$.

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TRAVERSE NOTES

PROPERTY Triangle

GEOLOGIST R. J. Melin

DATE June 24

SHEET 12

STATION	UNIT	DESCRIPTION	
T48		Sandstone, grey, buff to orange weathering. Top 4 m fine grained, argillaceous in part, bedding irregular with thick to thin bedding, massive in part. Middle 2.5 m very coarse Sst, cherty, generally dark to medium grey, minor medium grained sandstone and some conglomerate - pebble lenses, lower 2 m finer sequence, fine grained argillaceous, grey buff to orange weathering, fine bedding, low angle large scale cross bedding, calcareous throughout. 220/6°-10°SE	
T49		Sandstone, grey, buff weathered, medium to coarse grained with pebbly lenses, cherty, calcareous thinly bedded, small and large scale cross bedding.	
T50		Sandstone, grey, some orange colouration, well defined bedding, abundant large scale cross bedding, some cherty pebble bands, sheering is evident displacing large blocks of Sst. Due North /9°E.	
T51		Sandstone, grey, orange to buff weathering, medium with some coarse grained	

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 24SHEET 13

STATION	UNIT	DESCRIPTION
T51 (cont)		sections, large plant impressions pebbly bands, slightly calcareous, large scale cross bedded, flaggy portions, 2 m outcrop. 186/5°E.
T52		Sandstone, medium grey - similar to above, flaggy, large scale cross bedding, non calcareous. 320/17°NE.
T53		Sandstone, medium grey/orange, flaggy, large scale cross bedding, medium grained, minor coarse grained, non calcareous. 295°/29NE°.
T54		Sandstone, medium grained, minor coarse grained, orange colouration, large scale cross bedding, flaggy, non calcareous, relatively flat lying, block may not be in place.
T55		Sandstone, similar to above, 2m section, grey with orange colouration, medium grained, some coarse grains, flaggy, large scale cross bedding. Horizontal bedding to slight NE dip.-

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 24SHEET 14

STATION	UNIT	DESCRIPTION
T56		Sandstone, grey with orange colouration, med and coarse grained beds, large scale cross bedding, some flaggy bedding, non calcareous, underlain by small pebble conglomerate, 1m section. 320/18°NE.
T57		Sandstone, grey to deep orange, medium grained, some finer grained, flaggy, very calcareous. 322/18°NE.
T58		Sandstone, medium grey, orange colouration, medium grained with some coarse grained, flaggy, large scale cross bedding. 225°/23NE (May be X bed) 305°/24°NE.
T59		Sandstone, grey orange weathering, medium grained, some fine grained, thinly bedded ripple bedded, flaggy calcareous. (Note Finer Sequences) 324°/10°NE.
T60		Sandstone, (On trend with T59) medium grained, flaggy, large scale cross bedding

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 24SHEET 15

STATION	UNIT	DESCRIPTION
T61		Sandstone, Top 1.5 m medium to coarse grained, cherty, massive, thickly bedded, resistant. Underlain by 3 m sandstone, flaggy, large scale cross bedding, less resistant, high angle cross beds, slightly calcareous, medium grey with orange colouration, large plant impressions, shearing evident (Top dark grey cherty Sst may be a traceable marker). 350°/9°E.
T62		Sandstone, grey with orange colouration, medium to coarse grained irregular to cross bedded, minor flaggy bedding, large cliff 15m, non calcareous. 325°/52°SW.
T63		Sandstone, grey with orange colouration, flaggy, abundant large scale cross bedding, medium grained, calcareous on bedding planes. 336°/43°SW.
T64		Sandstone, grey to dark grey, cherty, thickly bedded, medium grained, non calcareous, resistant, 1m section. 343°/29°SW.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 24SHEET 16

STATION	UNIT	DESCRIPTION
T65		Coal bloom.
T66		Sandstone, medium grey, buff to orange weathering, flaggy appearance, rubble uprooted by tree.
T67		Sandstone, medium grey, medium grained, relatively clean appearance, non calcareous, massive dip slope. 413°/25°NE.
T68		Sandstone, (On trend with T67) grey with orange colouration, large scale cross bedding, thickly bedded, medium and coarse grained beds. 313°/38°NE.
T69		Sandstone, medium grey, orange colouration, cherty, medium to coarse grained, pebble bands throughout, non calcareous, 1 m section. 310°/28°NE.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 24SHEET 17

STATION	UNIT	DESCRIPTION
T70		Sandstone, on trend with T69, coarse and medium grained, large scale cross bedding, rich orange colouration, flaggy in parts, 2m section. 327°/44°NE.
T71		Sandstone, top 1 m resistant, lower 1.5m flaggy, medium to coarse grained orange and red colouration. 322°/28°NE.
T72		Sandstone, (similar to T71) flaggy, medium grained, red to orange.
T73		Sandstone, grey, orange to red colouration, fine grained argillaceous, calcareous, thinly bedded, fine carbonaceous debris along bedding planes. (A definite change to finer lithology) .5 m outcrop. 323°/50°NE.
T74		Sandstone, medium to dark grey, medium to fine grained, massive, uneven bedding, flaggy in parts, block may not be in place, slightly calcareous.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 25SHEET 19

STATION	UNIT	DESCRIPTION
T77		Sandstone, medium grey, some buff to orange weathering, medium to coarse grained, large scale cross bedding, flaggy, non calcareous, 1 m section. $270^{\circ}/22^{\circ}\text{NE}$.
T78		Sandstone, medium grey with minor orange colouration, large scale cross bedding, medium to coarse grained, non calcareous, flaggy, 1 m section. $328/22^{\circ}\text{SW}$.
T79		Sandstone, medium grey, orange colouration, large scale cross bedding, non calcareous, flaggy. $322^{\circ}/10^{\circ}\text{SW}$.
T80		Sandstone, medium grey, orange colouration, flaggy, medium to coarse grained. Strike Due North $/21^{\circ}\text{W}$.
T81		Sandstone, medium grey, buff weathering, well defined large scale cross bedding, non calcareous, medium and coarse grained, flaggy near top of section. 2.5 m section. $335^{\circ}/15^{\circ}\text{NE}$.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 25SHEET 20

STATION	UNIT	DESCRIPTION
T82		Sandstone, similar to T81. Bedding horizontal.
T83		Sandstone, medium grey, buff to orange weathering, medium grained with minor coarse grained, large scale cross bedding, flaggy. Horizontal to Slight S-SW dip.
T84		Sandstone, medium grey, buff to orange, medium grained, irregular flaggy bedding, non calcareous, 2 m section. $210^{\circ}/10^{\circ}\text{NW}$.
T85		Sandstone, grey, buff to orange, medium to coarse grained, large scale high angle cross bedding, irregular flaggy bedding. 2 m Outcrop. $220-240/2^{\circ}\text{SE}$.
T86		Sandstone (on trend with T85) grey-orange .5 m massive, thickly bedded, calcareous, overlain by cross bedding, non calcareous, some minor pebble sections.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 25SHEET 21

STATION	UNIT	DESCRIPTION
T87		Sandstone, medium grey, orange colouration, medium grained, flaggy to irregular bedding, non calcareous, steep dip slope. 323/48°NE.
T88		Sandstone, medium grey with buff and deep orange weathering, medium grained with some coarse grained, flaggy to irregular bedded, large scale cross bedding, calcareous. 197/16°-23°E.
T89		Sandstone, medium grey, buff to orange weathering, medium to coarse grained, large scale cross bedding, coarser and thicker bedding than T88. 228/16°-30°SE.
T90		Sandstone, medium grey, buff to orange weathering, (on trend with T88 and T89) large scale cross bedding, calcareous in part, 3 m section -cliff. 228/27°SE.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 27SHEET 22

STATION	UNIT	DESCRIPTION
T91		Sandstone, medium-dark grey, orange to red colouration, medium to coarse grained, cherty, non calcareous, flaggy, large scale cross bedding, block probably in place, .5 m outcrop. 310/40 ^o NE.
T92		Sandstone, dirty grey to dark grey, red colouration, non calcareous, medium grained, flaggy, large scale cross bedding. 310 / Vertical bedding.
T93		Sandstone, medium grey, minor orange colouration, medium grained, flaggy slabs, not in place, non calcareous.
T94		Sandstone, dirty grey, orange colouration, thick uneven bedding, medium grained, minor coarse grained, appears to be dip slope. 312/21SW

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 27SHEET 23

STATION	UNIT	DESCRIPTION
T95		Sandstone, dirty grey, orange-red colouration, thickly bedded, medium grained, minor coarse grained, large scale cross bedding, non calcareous. 210/24°W-NW.
T96		Sandstone, medium grey to buff, fine to very fine grained, argillaceous very fine bedding, small scale ripple bedding, calcareous, rubble.
T97	coarser/ finer	Sandstone, grey, deep red weathered, fine to medium grained, non calcareous, sample too poor for bedding definition, rubble.
T98		Sandstone/Siltstone, very fine grained, argillaceous, minor very fine carb debris generally on bedding places, dirty grey-buff rubble, fine irregular bedding.
T99		Sandstone, dirty grey, buff-red weathering, well defined small scale cross-bedded, fine grained, argillaceous, non calcareous, block may not be in place.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 27SHEET 24

STATION	UNIT	DESCRIPTION
T100		Sandstone, fine grained, thin bedded, rubble.
T101		Sandstone, fine grained to medium grained, thickly bedded, grey-buff, block probably in place, 315 / near vertical dip.
T102		Sandstone, medium to dark grey, red-orange colouration, flaggy medium grained, non calcareous, .2 m section 300/72° NE.
T103		Sandstone, medium to coarse grained small cherty pebbles, medium to dark grey, rubble, non calcareous.
T104		Sandstone, dark grey, very cherty, medium grained, rubble.
T105		Sandstone, medium grey, buff to red weathering, medium grained, calcareous, flaggy, rubble.

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TRAVERSE NOTES

PROPERTY Triangle

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DATE June 27

SHEET 25

STATION	UNIT	DESCRIPTION	
T106		Sandstone, medium to dirty grey, minor buff weathering, medium grained	
		with some coarser portions, thickly bedded, massive, calcareous,	
		2.5 m, underlain by 1.5 m sandy conglomerate, pebbles to cobbles, minor	
		boulders (May represent lower conglomerate band in the Lower Gething Fm)	
		Underlain by interbedded Sst and conglomerates.	
		335/14NE.	

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TRAVERSE NOTES

PROPERTY Triangle

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SHEET 26

STATION	UNIT	DESCRIPTION
T107		Coal bloom, between large conglomerate ridge and smaller conglomerate band, to be trenched.
T108		Sandstone, medium grey, minor buff-orange weathering, medium grained, thickly bedded, non calcareous, pebble sections throughout. 335/34°W.
T109		Sandstone, medium grey-dirty grey, buff weathering, grades to pebble conglomerate, pebble bands down section, flaggy up section, 5 m outcrop. 340/41SW
T110		Mudstone/Siltstone, recessive muddy section with carb material, partially covered, may be trenched.
T111		Mudstone recessive interval - 30 m horizontal distance. The roof of this section is made up of Sandstone and pebble conglomerate described in 109. The floor of this section is Sandstone, fine grained, calcareous fine carbonaceous debris throughout, small scale, fine irregular

bedding Due North / 300 w

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 28SHEET 27

STATION	UNIT	DESCRIPTION
T112		Sandstone, grey-buff, medium grained, minor pebble occurrences, calcaceous, underlain by pebble conglomerate which becomes coarser down section, 5 m section. This sandy sequence is underlain by approximately 20 m of coarse pebble to cobble conglomerate, minor boulders. Slickensides evident at base of section.
T113		Coal bloom, overlain by grey, buff weathering sandstone, very fine grained, calcareous, irregular, low angle bedding, flaggy in parts. 325/24° SW.
T114		Sandstone (on trend with T113) grey, buff to rust weathering fine grained, flaggy, calcareous, underlain by coal seam. Another coal bloom is located 2 meters down section, will have to be trenched, may be bloom or slump. 348/45 W-SW.
T115		Coal seam (in drainage cut) No bedding evident, appears to be 10-15 stratigraphically lower than the upper seam in T114. Roof or floor have not been located (may be 2 m thick?)

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 28SHEET 28

STATION	UNIT	DESCRIPTION
T116		Sandstone, buff weathering, grey, fine to medium grained. Note sandstones are not classic Minnes sequence, appear to be more like those found in the Lower Gething. 335/45° SW.
T117		Sandstone, grey, buff to rust weathering, very fine grained, very fine carbonaceous debris and muddy laminae. .2 m section. Due North 46° W.
T118		Sandstones/Siltstones, interbedded sandstones and siltstones, irregular bedding, generally dirty to dark grey, argillaceous, some dark grey and some buff weathering, dark grey bed of hard resistant sandstones, irregular bedded, one small section 10 cm of coaly mudstone. 4 meter section appears to be Lower Gething section. Some calcareous, buff, fine grained Sst. 342/62° SW.
T119		Sandstone, dark grey, dirty, fine to medium grained, non calcareous, low angle cross bedding and uneven bedding, underlain by medium grained, flaggy Sst. orange colouration.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 28SHEET 29

STATION	UNIT	DESCRIPTION
T120		Sandstone, medium to dirty grey, buff weathering with some orange colouration, abundant carbanaceous debris with small bright coaly blebs, non calcareous, large scale, low angle cross bedding, minor flaggy appearance, 3 m section. 295/35°NE.
T121		Conglomerate, pebbles to cobbles, 1 m block, may not be in place.
T122		Conglomerate, large blocks of cobble, minor pebble conglomerate, may have rolled from thick conglomerate ridge.
T123		Sandstone, medium grey, buff weathering, medium to coarse grained with pebbly portions, well defined large scale cross bedding. 4 m section. 355/24°W-SW
T124		Sandstone grey, orange colouration, medium to coarse grained, flaggy, large scale cross bedding, pebbly portions. 2 m section. 330/50°SW

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 28SHEET 30

STATION	UNIT	DESCRIPTION
T125		Sandstone, medium to dark grey, fine grained, calcareous, minor very fine carbonaceous debris, some buff sandstone and dark siliceous, silty argillaceous sandstone nearby irregular bedding (Lower Gething type sequence) 318/70° SW.
T126		Conglomerate, pebbles to cobbles, greater than 10 m in thickness.
T127		Sandstone, medium grey-buff, grading to large conglomerate ridge down section. 320/41° SW.
T128		Mudstone/Siltstone, dark grey, 5 m section with two resistant sandstone beds .5 m in thickness located approximately 2.5 m apart. The sandstone is very fine, argillaceous, buff weathering, ripple bedding. (The recessive sections were not trenched at this time.) 332/22° NE.
T129		Conglomerate, pebbles to cobbles, minor boulders, non calc, minor sandy beds, cliff thickness approximately 20 m.

324/25° NE

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TRAVERSE NOTES

PROPERTY Triangle

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SHEET 31

STATION	UNIT	DESCRIPTION	
T130		Conglomerate, as above, large ridge.	
		326/53° NE.	

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 32

STATION	UNIT	DESCRIPTION
T131		Conglomerate, upper portion of major conglomerate ridge, pebble-cobbles, sandstone lenses with large scale cross bedding, medium to thickly bedded, non calcareous, larger cobbles to boulders down section. 300/36° NE.
T132		Sandstone, medium-dark grey, dirty buff weathering, orange colouration, thick bedding, medium grained, calcareous, cherty. 304/20° NE.
T133		Sandstone, medium to dark grey, orange- buff weathering, some red colouration, non calcareous, medium grained, thick to massive bedding, minor coarser grains, cherty. 329/24° NE.
T134		Sandstone, dark grey, orange colouration, medium grained, thin bedding flaggy, calcareous, cherty, block not in place.
T135		Sandstone, dark grey, fine grained, argillaceous, siliceous texture, fine

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 33

STATION	UNIT	DESCRIPTION
T135 (cont)		uneven bedding, (not typical finer sequence) block not in place.
T136		Sandstone, dark grey, orange to red colouration, medium grained, cherty, calcareous, thick to medium bedded, minor fine carb debris, block not in place.
T137		Sandstone, medium grey, buff, orange colouration, minor carb debris with some carbonaceous rootlets, calcareous, thin bedding, underlain by medium to coarse grained, with scattered pebbles and small cherty conglomerate lenses. (block)
T138		Sandstone, dark grey, orange weathering, medium grained, minor coarser grained, thin to medium bedded, coarser down section, some small pebbles, non calcareous, thick to massive bedding, very cherty in some parts.
T139		Sandstone, medium to dark grey, buff weathering, generally medium grained, some coarser and finer sequence throughout, large scale cross bedding, medium to thickly bedded, coarse near base becoming pebbly, cherty,

Good section of coarser Minnes. 6 m outcrop. 284/9°s

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 34

STATION	UNIT	DESCRIPTION
T140		Sandstone, medium grained to minor coarser grained, dark grey, orange colouration, thin to medium bedding thickness, calcaceous.
T141		Sandstone, grey, orange colouration, cherty, medium grained, large scale cross bedding, thin to medium bedded, calcaceous, large slump block.
T142		Sandstone, very fine grained, dark buff to red weathering, faint-fine bedding block.
T143		Sandstone, dark grey, red weathering, very fine grained, argillaceous, non calcaceous, faint thin to fine bedding, irregular bedding, (large block?) - Dip probably SW.
T144		Sandstone, varies from medium grained to very fine grained, argillaceous, minor fine carb debris, dark grey, quartzite appearance, rubble.
T145		Sandstone, grey, orange colouration, medium grained and classic ripple bedded, fine Sst, rubble.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 35

STATION	UNIT	DESCRIPTION
T146		Conglomerate, generally light coloured quartz, minor darker cherts, pebbles to small cobbles up to 3 cm in diameter, well rounded, block thickness less than 30 cm.
T147		Sandstone, medium - dark grey, buff weathering, fine grained, abundant small fine muddy clasts and minor carbonaceous debris, fine bedding, in creek bed - Approximate attitude. 320/35° SW
T148		Sandstone, fine grained, similar to T147, uneven fine bedding, minor carbonaceous rootlets.
T149		Sandstone, medium grey, orange colouration, medium grained, flaggy, grading to massive - thickly bedded down section, calcareous, cleaner appearance down section, 1.5 m - good section. 311°/39° SW.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 36

STATION	UNIT	DESCRIPTION
T150		Sandstone, dark grey, some orange colouration, cherty, medium grained with some coarser grained, calcaceous, block not in place.
T151		Sandstone, fine to very fine grained, medium-dark grey, fine uneven bedding, non calcaceous, forms 1 m ridge. 332°/78° SW.
T152		Sandstone, dark grey, minor buff weathering, calcaceous, fine grained, well defined small scale bedding to ripple bedded, abundant carbonaceous fragments and very fine muddy laminae. 1 m section. 315°/69° SW.
T153		Sandstone, medium grey, fine to medium grained, generally medium grained, then to medium bedded, calcaceous, similar to T152. 3 m section. 335°/62° SW.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 37

STATION	UNIT	DESCRIPTION
T154		Sandstone, medium to dark grey, some orange colouration, medium grained, minor coarser grained, calcareous, cherty, large scale cross bedding, flaggy. 1 m section. 312°/76° SW.
T155		Sandstone, dark grey, buff weathering, fine grained, well defined low angle bedding, calcareous, underlain by coarser sandstone, generally medium to fine grained. Block
T156		Sandstone, dark to medium grey, minor orange colouration, cherty, non calcareous, thickly bedded, medium grained, minor coarser grained. 335°/62° SW.
T157		Sandstone, dark grey, orange colouration, cherty, medium grained, Block.
T158		Sandstone, medium to dark grey, buff weathering, fine grained, finely bedded, small scale cross bedding to ripple bedding, calcareous. 300°/44° NE.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE June 30SHEET 38

STATION	UNIT	DESCRIPTION
T159		Sandstone, fine to medium grained, thinly bedded, calcareous outcrop in creek bed, - approx. attitude $305^{\circ}/26^{\circ}$ NE.
T160		Sandstone, dark grey, red colouration, cherty, medium grained to thickly bedded, large scale cross bedding, calcareous, 1 m outcrop. $324^{\circ}/39^{\circ}$ NE. * 15 meters down section, similar cherty sandstone, slightly coarser.
T161		Sandstone, dark grey, buff weathering, fine to very fine grained, fine ripple bedded, some small scale cross bedding, calcareous, 1.5 m. $328^{\circ}/41^{\circ}$ NE.
T162		Sandstone, Mudstone, - four beds of sandstone, approx 5 m thick, separated by .75 m of interbedded dark grey mudstone to siltstone with smaller sandy lenses. The sandstone is very fine grained, abundant fine small scale cross bedding, calcareous. The mudstone and siltstone are rubblely with conchoital fractures, calcareous, minor small calcite veins. $331^{\circ}/56^{\circ}$ NE.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1/80SHEET 39

STATION	UNIT	DESCRIPTION
T163		Siltstone/Mudstone, top .6 m sandstone, silty, argillaceous underlain by 2 m mudstone, dark grey to black, minor silty bands throughout, non-calcareous, underlain by 2.4 m siltstone, medium to dark grey muddy, rubbly weathering, non-calcareous. Buff sandstone band at base.
T164		Siltstone, dark grey, muddy, (2 m) overlain by .4 m argillaceous sandstone, buff weathering, dirty grey, carbonaceous rootlets throughout, grades muddy upsection to a small carbonaceous mudstone band .1 m thick. 324°/25° NE.
T165		Sandstone, medium grey, fine grained, small scale, irregular bedding, non-calcareous, .5 m outcrop. 296°/64° SW.
T166		Conglomerate pebbles to cobbles up to .3 centimeters in diameter, generally light coloured quartz, and black cherts, non-calcareous, minor sandstone lenses. 1.5 m section 304° /69° SW.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1/80SHEET 40

STATION	UNIT	DESCRIPTION
T167		Sandstone, dirty grey, buff weathering, fine grained, irregular bedded, calcareous, fine carbonaceous debris, and small carbonaceous rootlets. 2 m section. $315^{\circ}/11^{\circ}$ NE.
T168		Sandstone, as above, small vertical carbonaceous rootlets throughout.
T169		Sandstone, dark grey, buff weathering, fine carbonaceous degree, thick to medium bedding, slightly calcareous, medium grained. 2 m section. $335^{\circ}/19^{\circ}$ NE.
T170		Sandstone, dark grey, buff weathering, medium grained, medium to thick bedded, irregular bedding. $332^{\circ}/9^{\circ}$ NE.
T171		Sandstone, large cliff (10 m) interbedded sandstones, medium grained large scale cross-bedding, flaggy, coarse grained to pebble conglomerate in sections. $280^{\circ}/20^{\circ}$ N.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1/80SHEET 41

STATION	UNIT	DESCRIPTION
T172		Sandstone, dirty grey, buff weathering argillaceous, very fine grained, calcareous, fine carbonaceous debris throughout. Lower .5 meters massive, middle 1 m rubblely, irregular bedding, conchoidal fracturing, upper 1 m is flaggy in appearance. 335°/9° E.
T173		Sandstone (lies immediately under 172) dark grey, some buff to orange colouration, medium grained, cherty, massive to thickly bedded, low angle bedding, calcareous. 5 m. 315°/12° NE.
T174		Sandstone (underlies 173) dirty grey, some buff weathering, fine grained, argillaceous, very fine muddy laminae, fine carbonaceous debris, abundant small rootlets, thin to fine uneven bedding, 1 m section. 310°/24° NE.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1 /80SHEET 42

STATION	UNIT	DESCRIPTION
T175		Sandstone/Mudstone, top 1.5 m sandstone, dark, dirty grey, buff weathering, very fine grained, argillaceous, underlain by .2 m sandstone as above, inter-bedded with dark grey mudstone, underlain by .1 m carbonaceous mudstone, grading to dirty coal, underlain by .3 m dark grey argillaceous sandstone, thickly bedded, non-calcareous, underlain by .4 m mudstone with micaceous silty beds, generally conchoidal fracturing, non-calcareous.
		Base sandstone, .75 m, thin to fine bedding, fine grained, calcareous, grey to buff. $330^{\circ}/40^{\circ}$ NE.
T176		Sandstone, very fine grained, argillaceous, dirty grey buff weathering, fine uneven bedding, calcareous, 1 m section. $322^{\circ}/57^{\circ}$ NE.
T177		Sandstone, dark grey, some orange colouration, cherty, medium grained, calcareous, (dip seems to be flatter lying).
T178		Sandstone, dirty grey, buff weathering, argillaceous, micaceous, calcareous, poorly defined bedding. .6 m section $280^{\circ}/18^{\circ}$ S.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1 /80SHEET 43

STATION	UNIT	DESCRIPTION
T179		Sandstone, dirty grey, buff weathering, thin to fine bedding, irregular bedded calcareous. 315°/14° SW.
T180		Sandstone, dark grey to buff, argillaceous, calcareous, fine grained, resistant, low angle, thin to fine bedding. 2m section. 320°/14° SW.
T181		Sandstone, medium to dark grey, buff to orange colouration, medium to coarse grained, minor fine grained, medium to thickly bedded, calcareous. Block.
T182		Sandstone, dirty grey, minor buff weathering, fine grained, argillaceous, vertical carbonaceous rootlets, slightly calcareous, fine low angle bedding. 290°/8° SW.
T183		Sandstone, medium to dark grey, very cherty in part, medium grained, large scale cross-bedding. Base of outcrop is coarse sand to pebbly

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1 /80SHEET 44

STATION	UNIT	DESCRIPTION
T183 (cont)		conglomerate, predominantly cherts, 3 m section 280°/11° S.
T184		Sandstone, dark grey, minor orange colouration, cherty, coarse grained, lighter up section, cherty conglomerate at base small lens of pebble to cobble conglomerate near base, well rounded pebbles up to 2 cm in diameter. These lenses are small and localized, large plant impressions abundant. 320°/14° SW.
T185		Sandstone, dark grey, minor buff weathering, calcareous, very fine grained, argillaceous, thinly bedded, some fine small scale cross bedding becoming muddier down-section, siltstone base, 2.3 m section, underlain by .2 m coal, dull & bright, dirty sadly weathered, underlain by .5 m silty mudstone, medium grey non-calcareous, grading to siltstone in part, abundance of large vertical carbonaceous rootlets, grading back into grey buff weathering, fine grained, sandstone, 1 m 302°/5° SW.

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TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1 /80SHEET 45

STATION	UNIT	DESCRIPTION
T186		Sandstone, medium grey, minor dirty grey, buff weathering, fine to medium grained, calcareous, medium to thickly bedded, some thin bedding near base, abundance of carbonaceous debris along bedding. .4 m section 315°/20° SW.
T187		Sandstone, 23m cliff top sandstone, dark grey, thickly bedded, medium to coarse grained, cherty, 3m thick. Middle 10m similar to above except bedding is massive, weathers orange, large conchoital, fracturing. Lower 10m medium to thickly bedded sandstone, medium grey, dirtier appearance, bedding low angle to irregular, some carbonaceous debris. 310°/20° SW/
T188		Coal seam .4 m, relatively clean but badly weathered, roof dirty grey, argillaceous sandstone, buff weathering, fine grained, thin bedded calcareous. Floor medium to dark grey, silty mudstone, non calcareous, slightly micaceous, minor carbonaceous debris, no bedding evident. 295°/11° SW.

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TRAVERSE NOTES

PROPERTY Triangle

GEOLOGIST R. J. Melin

DATE July 1 /80

SHEET 46

STATION	UNIT	DESCRIPTION
T189		Sandstone, top 2 m flaggy, well defined, large scale cross-bedding, medium to dark grey, medium grained, Lower 1.5 m sandstone, dark grey, cherty, massive, light orange weathering, conchoital fracturing, calcareous, throughout, some block shearing evident.
		313°/23° NE.
T190		Strata becoming steeper dipping, stress evident, no faulting suggested.
		Sandstone, medium to dark grey, medium grained, large scale cross-bedding, calcareous. 2 m section.
		302°/56° NE.
T191		Sandstone, medium grey, buff to orange weathering, medium grained, then to medium bedding, calcareous, flaggy in part.
T192		Sandstone, dirty grey, weathers buff, very fine grained to silty, minor fine carbonaceous debris, micaceous in part, bedding ill defined, shearing has rubbled the outcrop.

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Triangle

GEOLOGIST R. J. Melin

DATE July 1 /80

SHEET 47

STATION	UNIT	DESCRIPTION	
T193		Coal bloom, underlain by sandstone, medium to dark grey, buff to orange colouration. Block.	
T194		Siltstone, medium to dark grey, bedding indistinct, abundant carbonized plant impressions, small worm burrows, becoming muddier downsection, argillaceous sandstone bands, calcareous, overlain by very fine grained silty sandstone argillaceous, calcareous, micaceous faint thin bedding. 3.5m section. 326°/20°NE.	
T195		Mudstone/sandstone, .6m sandstone base, dark grey, very fine grained, argillaceous, micaceous, non-calcareous, 1.2m mudstone, dark grey, crumbly, contains .1m carbonaceous stringer, 1m sandstone as below, .18m mudstone, very carbonaceous to poor coal in top 5cm., overlain by 3m sandstone, silty, very argillaceous, thin to fine bedding, calcareous, very micaceous, minor carbonaceous debris. 348°/47° NE.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY TriangleGEOLOGIST R. J. MelinDATE July 1/80SHEET 48

STATION	UNIT	DESCRIPTION
T196		Coal outcrop, 1.9m total thickness, top 1m has muddy sections, lower 1m weathered but cleaner, maybe tectonically thickened. Detailed section required. Roof siltstone, muddy in part carbonaceous debris throughout, .4m, overlain by argillaceous sandstone, very fine grained, thinly bedded, calcareous. Floor, clean contact with argillaceous sandstone, 1m+ in thickness, calcareous, dirty grey, silty, very fine grained, micaceous.
		321°/60° NE.
T197		Sandstone section generally argillaceous, 5m section with muddy and minor carbonaceous beds, generally less than .5m in thickness throughout. Bedding near vertical to SW.
		330°/
T198		Sandstone interbedded, fine grained, massive, with thinly bedded, fine argillaceous sandstone, 0.6m coal in creek bed, no detailed section made.
		334°/72° SW.

I.L.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Triangle

GEOLOGIST R. J. Melin

DATE July 1 /80

SHEET 49

STATION	UNIT	DESCRIPTION	
T199		Sandstone, fine grained, argillaceous,	
		329°/64° NE.	
T200		Mudstone, dark grey, rust weathering, abundant ironstone nodules,	
		Conchoidal fracturing to splintery, calcareous, clean appearance, (unique	
		feature), overlain by fine grained, silty sandstone, micaceous, calcareous.	
		296°/64° NE.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.L. Melin DATE July 19, 1980 SHEET 1

STATION	UNIT	DESCRIPTION	
T201		Sandstone/conglomerate, medium to dark grey, some buff weathering.	
		Sandstone coarse and medium grained, grading to very coarse pebble	
		conglomerate, up to 1 cm diameter cobbles, generally cherts, non-cal-	
		careous, generally flat lying to slight SW dip.	
T202		Conglomerate, pebbles and some cobbles, coarse sandstone matrix, non-	
		calcareous, low dip angle.	
T203		Conglomerate, two conglomerate beds approximately one metre thick with	
		a 75 cm sandstone bed between them. The conglomerate is generally coarse	
		pebbles to minor cobbles, dark cherts and light quartz pebbles, generally	
		less than 2 cm. Sandstone, coarse grained, pebbly, calcareous, thickly	
		bedded.	
		270/3° S	
T204		Conglomerate, cliff - 16 m, gritty pebble conglomerates to coarse cobble	
		conglomerates, calcareous, minor sandy lenses, some listricated surfaces,	
		scattered boulders near base, stress plains appear to be nearly horizontal,	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 19, 1980 SHEET 2

STATION	UNIT	DESCRIPTION
		parallel to bedding.
		220/4° NW
T205		Conglomerate block, may be in place or stumped.
T206		Sandstone, dark grey, some orange colouration, cherty, medium to minor coarse grains, medium to thickly bedded.
T207		Sandstone, dark to medium grey, cherty, orange colouration, flaggy large scale cross-bedding, medium grained. Lower portion of outcrop buff weathering, medium to coarse grained, to small pebbles, thickly bedded, large block shearing, some large plant impressions; 4 m outcrop.
		274/14° NW
T208		Sandstone/siltstone, medium grey buff weathering, very fine grained, thin to finely bedded, some very small scale cross-beds, carbonaceous rootlets and plant impressions, grades to mudstone in portions, very calcareous, 2 m section.
		301/9° NE

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 19, 1980 SHEET 3

STATION	UNIT	DESCRIPTION	
T209		Sandstone, dark grey to medium grey, deep orange colouration to buff in finer sequences. Top section coarse, cherty, medium to thickly bedded with plant impressions. Down section, argillaceous, calcareous sandstone, fine light coloured crystals evident. Carbonaceous shale - Coaly bloom between 208 and 209.	
T210		Sandstone, dark grey, fine grained to argillaceous, buff weathering, thin to fine bedded, classic ripple bedding, calcareous, carbonaceous shale bloom above the outcrop. 295/9° NE	
T211		Carbonaceous mudstone float in the creek.	
T212		Sandstone, medium grey, buff weathering, very fine grained to argillaceous, abundant vertical rootlets, very calcareous. Underlain by 10 m of recessive zone, carbonaceous - coaly bloom at base of the covered section. Underlain by 2 m of interbedded fine to argillaceous sandstones and siltstone, very calcareous, abundant plant impressions, and carbonaceous	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 19, 1980 SHEET 4

STATION	UNIT	DESCRIPTION	
		debris, crumbly sheared appearance.	
		298/17° NE	
T213		Sandstone, medium to dark grey, buff weathering to orange, fine grained, abundant rootlets and coaly plant debris, more resistant than previous outcrops, very calcareous, bedding indistinct.	
T214		Sandstone, dark grey to medium grey, dirty appearance, medium grained, minor fine grained, thin low parallel bedding, platey, calcareous, some carbonaceous plant debris, 1 m thick. Underlain by thickly bedded clean sandstone, medium grey, calcareous, orange to sulfur colouration, some sulfide stain present, 6 m thick. Underlain by sandstone as above.	
		372/17° NE	
T215		Sandstone, large block, medium to dark grey, cherty, medium to very coarse grained, thickly bedded, orange colouration, calcareous.	
T216		Conglomerate, block, gritty pebbles, grading to cobbles, dark grey cherts	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 19, 1980 SHEET 5

STATION	UNIT	DESCRIPTION
		and light quartz, block may not be in place, underlain by sandstone, in place, dark to medium grey, fine grained, argillaceous, carbonaceous rootlets and debris throughout.
		320/16° NE
T217		Sandstone, medium to dark grey, dirty grey, fine grained to argillaceous, vertical carbonaceous rootlets, thin irregular bedding, calcareous, 2 more conglomerate blocks not in place below section.
		301/10° NE
T218		Sandstone, medium to dark grey, orange colouration, cherty, medium grained, minor coarser grained, calcareous, thickly bedded, 1.5 m section.
		Due North/16° W
T219		Sandstone, medium to dark grey, some buff to orange weathering, relatively clean appearance, non-calcareous to slightly calcareous in parts, thickly bedded, very contorted bedding with a series of sheared very small scale synclines and anticlines, large scale cross-bedding.

200/7° E - SE

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 19, 1980 SHEET 6

STATION	UNIT	DESCRIPTION	
T220		Sandstone, dirty grey, minor buff weathering, argillaceous to siltstone,	
		very fine light coloured crystals throughout. Low angle dip E/SE	
T221		Sandstone block, medium to dark grey, fine to medium grained.	
T222		Sandstone, medium to dark grey, cherty, generally medium grained, some	
		fine and coarse grains, thickly bedded, minor buff to orange colouration,	
		slightly calcareous.	
		275/9° SE	
T223		Sandstone, dark grey, some orange colouration, cherty, coarse to medium	
		grained, slightly calcareous, grades to dark grey small cherty pebbles	
		conglomerate. Dip appears South.	
T224		Sandstone dark grey, red to orange colouration, very coarse grained, cherty	
		large scale cross-bedding, medium bedded, some medium grained, non-cal-	
		careous, block may be in place.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 19, 1980 SHEET 7

STATION	UNIT	DESCRIPTION	
T225		Sandstone, 4 m outcrop, top meter - medium grey, buff, medium grained, very calcareous, thin to medium bedding. Middle 1.2 m, dark grey, very cherty, medium to coarse grained massive, calcareous, base 8 m, thinly bedded sandstone, fine grained to argillaceous, calcareous, flaggy, dark grey to buff weathering, outcrop contorted.	
		265/39 ⁰ N	
T226		Sandstone, medium to dark grey, orange weathering, medium grained, flaggy, medium bedding, finer sequence down section, silty and muddy, abundant light coloured crystals, irregular bedding to undefined. 2 m outcrop.	
		314/38 ⁰ NE	
T227		Sandstone, dark dirty grey, carbonaceous rootlets and debris, very fine grained, argillaceous, undefined bedding, sheared calcite veins, minor fine bedding.	
		303/16 ⁰ NE	
T228		Sandstone, dark grey to dirty grey, fine grained to very fine grained,	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 20, 1980 SHEET 9

STATION	UNIT	DESCRIPTION	
T231		Sandstone, dark grey to medium grey, orange colouration, cherty, medium to coarse grained, non-calcareous, poor outcrop, probably thickly bedded, appears to be at a low dip angle.	
T232		Sandstone, dark to medium grey, orange colouration, cherty, non-calcareous, medium to coarse grained, minor cherty, small pebble sections. 247/11° S	
T233		Sandstone, dark grey, orange colouration, calcareous, abundant vertical carbonaceous rootlets, carbonaceous debris, thinly bedded .3 m section, overlain by dark grey to carbonaceous mudstone. 328/42° NE	
T234		Sandstone, dark to medium grey, cherty, medium grained, medium to thickly bedded, orange colouration, minor carbonaceous plant debris, calcareous, large block, .5 m outcrop. Dip in this area appears to be quite reduced.	
T235		Sandstone, medium to dirty grey, buff to orange weathering, fine grained	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area

GEOLOGIST R.J. Melin

DATE July 20, 1980 SHEET 10

STATION	UNIT	DESCRIPTION	
		minor argillaceous, non-calcareous, abundant carbonaceous rootlets and debris, abundant fine white crystals, underlain by a 4 m recessive zone and then back into a similar fine sandstone.	
		315/16° NE	
T236		Sandstone, medium to dirty grey, orange to buff weathering, fine grained to argillaceous, bedding ill defined, fine light crystals - micaceous in appearance, large worm burrows (Upper Gething Type).	
T237		Sandstone, medium grained, some finer grained, medium to thickly bedded, calcareous, slightly micaceous, minor carbonaceous debris, medium to dark grey, minor buff to orange weathering.	
		345/10° NE	
T238		Sandstone, block, medium to dark grey, orange to buff weathering, medium grained, calcareous, some coarse grains.	
T239		Sandstone, medium to dark grey, orange colouration, medium grained with	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 20, 1980 SHEET 11

STATION	UNIT	DESCRIPTION
		some coarser grains, medium to thickly bedded.
		300/11 ⁰ SW
T240		Sandstone, dark to medium grey, orange colouration, coarse and medium grained, thickly bedded, large scale cross-bedding, cherty sections, some minor block shearing, attitude difficult to determine because of large scale cross-bedding. 5 m cliff underlain by carbonaceous shale bloom in rubble.
		290/5 ⁰ to 10 ⁰ NE
T241		Sandstone, medium grey, orange colouration, medium grained with some coarser beds, calcareous, large plant impressions, thick to medium bedding, large slump blocks.
T242		Conglomerate, block, very sandy, large plant impressions in sandy portions. High energy to beach environment.
T243		Sandstone - Mudstone sequence. Top 1 m + sandstone, medium to dirty grey,

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area

GEOLOGIST R.J. Melin

DATE July 20, 1980

SHEET 12

STATION	UNIT	DESCRIPTION	
		argillaceous, abundant rootlets and carbonaceous debris, 25 cm	
		carbonaceous mudstone, underlain by 4.5 mudstone, dark grey, iron stained	
		bands and some nodules throughout, conchoidal rubbly, some silty bands,	
		non-calcareous, minor carbonaceous debris	
		302/14° NE	
T244		Sandstone - Mudstone sequence continuation at T243, interbedded argillaceous	
		sandstones, siltstones and mudstones, minor carbonaceous stringers,	
		total 5 m section, becoming sandier with less argillaceous strata.	
T245		Sandstone, medium to dirty grey, fine grained to argillaceous, vertical	
		carbonaceous rootlets, classic rippled surfaces, minor faint parallel	
		bedding to irregular bedding, calcareous fine white crystals, slumped	
		block.	
T246		Sandstone/Siltstone, medium to dirty grey, buff weathering, interbedded	
		siltstone and argillaceous sandstone, fine bedding, rippled to uneven	
		bedding. Appears to be low angle dip but may be slumped. Minor coal float	
		in creek.	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 20, 1980 SHEET 13

STATION	UNIT	DESCRIPTION	
T247		Sandstone, medium grey, minor orange colouration, medium grained,	
		calcareous, medium bedded, 4 m outcrop (more like coarse Minnes).	
		370/30° NE	
		270°?	
T248		Sandstone, dirty grey, very fine grained to argillaceous, large worm	
		burrows, calcareous, indistinct bedding, NE dip, note sandy conglomerate	
		blocks, .8 m thick.	
T249		Sandstone, dark to dirty grey, argillaceous, micaceous, indistinct bed-	
		ding, calcareous, minor fine parallel laminations, similar to T248.	
		230/17° N	
T250		Sandstone, medium grey, orange colouration, .6 m medium grained sandstone	
		overlain and underlain by finer sequence, carbonaceous rootlets and fine	
		debris throughout, calcareous.	
		332/8° NE	
T251		Sandstone, dark to dirty grey, very fine grained to argillaceous, cal-	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R. J. Melin DATE July 20, 1980 SHEET 14

STATION	UNIT	DESCRIPTION	
		careous, bedding indistinct to irregular bedding, micaceous, coal float	
		in creek.	
		Strike 10°/17° E	
T252		Carbonaceous shale - coaly bloom.	
T253		Sandstone, medium to dark grey, orange weathering, medium grained with	
		minor coarse grains, thickly bedded, calcareous, minor carbonaceous debris,	
		NE dip appears low angle.	
T254		Sandstone block, fine to medium grained, medium grey, orange colouration,	
		thin to medium bedded, block	
T255		Sandstone, medium to dark grey, medium to coarse grained, thickly bedded,	
		carbonaceous debris throughout, non-calcareous, large carbonaceous plant	
		impressions, low angle rolling dip, 2 m outcrop.	
T256		Sandstone, medium grey, orange colouration, medium grained, some finer	

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TRAVERSE NOTES

PROPERTY Mt Triangle Area

GEOLOGIST R.J. Melin

DATE July 20, 1980

SHEET 15

STATION	UNIT	DESCRIPTION	
		grained, thinly bedded, becoming thicker bedded down section.	
		342/6° NE	
T257		Carbonaceous shale bloom, coal fragment.	
T258		Sandstone, 4.5 m cliff, medium to dark grey, buff weathering, fine to medium grained, predominantly medium grained, bedding varies from thin to thick, abundant large plant impressions, 23 cm coal seam at base.	
		290/6° NE	
T259		Siltstone - argillaceous sandstone, parallel fine laminations, generally dark grey, some buff weathering, calcareous, bedding becomes less defined near base, 3 m outcrop, dip nearly horizontal.	
		272/2° E	
T260		Siltstone - argillaceous sandstone, medium to dark grey, clean appearance.	
T261		Sandstone medium to dark grey, micaceous, fine carbonaceous debris, minor	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 20, 1980 SHEET 16

STATION	UNIT	DESCRIPTION	
		carbonaceous mudstone laminae, plant impressions, calcareous thin to thickly bedded, sudden increase in dip.	
		343 /33 ⁰ NE	
T262		Sandstone, argillaceous, interbedded with thin beds of siltstone and mudstone, abundant plant debris, calcareous.	
		318/57 ⁰ SW	
T264A		Sandstone medium to dark grey, orange colouration, cherty, medium to coarse grained, minor small pebbles, flaggy appearance, non-calcareous.	
		270/11 ⁰ N	
T264B		Sandstone, medium grey, orange colouration, medium grained, some coarser grained, thin flaggy bedding, non-calcareous, large scale cross-bedding; .8 m outcrop.	
		332/6 ⁰ NE	
T265		Sandstone, medium grey, orange to red weathering, thin uneven bedding, calcareous, flaggy, medium grained, some fine grained portions, .5 m out-	
		251/9 ⁰ N - NW	crop

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 20, 1980 SHEET 17

STATION	UNIT	DESCRIPTION	
T266		Sandstone, medium to dark grey, medium grained, cherty, orange colour- ation, some red weathering, thin bedding, irregular bedding, calcareous .3 m outcrop. 275/12° N	
T267		Sandstone, medium grey, orange colouration to minor red, medium grained, minor coarser grains and finer grains throughout, some cherty portions, thin irregular bedding to large scale cross-beds, non-calcareous, .3 m outcrop. 315/23° NE	
T268		Sandstone, medium to dark grey, grades to fine cherty conglomerate. Some carbonaceous laminae throughout, non-calcareous, medium bedded, orange colouration. 290/6° N	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 21, 1980 SHEET 18

STATION	UNIT	DESCRIPTION	
T269		Sandstone, medium to dark grey, orange to red colouration, coarse grained with pebbles up to 1 cm scattered throughout, pebble conglomerate bands, thin to medium beds, large scale cross-bedding, calcareous 1 m outcrop. 327/13° NE	
T270		Sandstone/Conglomerate, small pebble conglomerate grading to coarse sandstone down section, dark grey with orange colouration, thin to medium bedded, large scale cross-bedding. 285/17° NE	
T271		Sandstone, medium to dark grey, orange colouration, medium grained, minor dirty fine carbonaceous laminae, calcareous .4 m outcrop.	
T272		Sandstone, medium to dark grey, red to orange weathering, cherty portions, very contorted bedrock on a small scale, tight folding, medium to coarse grained, dip varies from 345/19° NE to 230/9° NW	
T273		Sandstone, medium to dark grey, orange weathering, medium to fine grained	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 21, 1980 SHEET 19

STATION	UNIT	DESCRIPTION	
		carbonaceous debris and rootlets, calcareous .3 m section.	
		291/6° NE	
T274		Sandstone, medium to dark grey, orange and minor red weathering, medium grained, medium thick bedded, calcareous .2 m outcrop.	
		332/14° NE	
		Large scale cross-beds and small outcrops make proper orientation and attitude difficult.	
T275		Sandstone, medium grey, orange colouration, thin to medium bedding, flaggy, distinct large scale cross-beddings, medium grained, calcareous.	
		330/15° NE	
T276		Sandstone, medium grey, orange to red weathering, fine grained, minor medium grained, calcareous, thin to medium bedded, abundant fine white crystals.	
		316/46° NE	
T277		Sandstone, medium and dark grey interbedded, buff to orange weathering, very	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 21, 1980 SHEET 20

STATION	UNIT	DESCRIPTION	
		fine to fine grained, calcareous, well defined ripple and small scale	
		cross-bedding, blocks and rubble.	
T278		Sandstone, very fine grained to argillaceous, medium to dark grey, buff weathering, carbonaceous debris and rootlets, faint uneven to indistinct	
		bedding.	
T279		Sandstone, dirty grey, buff to orange weathering, micaceous, well defined, fine uneven bedding, small scale cross-bedding, fine grained to argillaceous, finer sequence down section to siltstone with poorly defined bedding, calcareous, minor carbonaceous debris.	
		298/58° SW	
T280		Sandstone, medium to dark grey, medium grained, micaceous, carbonaceous debris, minor muddy to silty laminae, bedding fine and uneven, large plant impressions, buff to orange weathering.	
T281		Sandstone, dirty grey, minor buff weathering, very fine grained, argillaceous,	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 21, 1980 SHEET 21

STATION	UNIT	DESCRIPTION
		bedding fine and uneven to indistinct, some carbonaceous debris and small plant impressions, calcareous, 1.5 m outcrop.
		258/17° N
T282		Sandstone, medium to dark grey, buff to orange weathering, abundant carbonaceous rootlets and carbonaceous mudstone laminae, fine bedding, calcareous, fine grained, 2 m outcrop.
		287/25° NE-N
T283		Sandstone, Top 1.5 m medium to dark grey, fine to very fine grained, fine parallel bedding, underlain by .8 m argillaceous sandstone, dirty grey undefined to faint irregular bedding, calcareous, classic ripple bedded sandstone in rubble. 277/19° N NE
T284		Carbonaceous Mudstone, Coaly, Float.
T285		Sandstone, dark grey, fine grained, fine low angle bedding, calcareous bedrock, gently rolling low dip angle.

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 21, 1980 SHEET 22

STATION	UNIT	DESCRIPTION
T286		Sandstone dark grey, cherty, medium to coarse grained, slightly calcareous, massive bedding, block.
T287		Sandstone, dark grey, orange to red colouration, cherty, coarse to medium grained, abundant large scale cross-bedding, slightly calcareous, 2.3 m outcrop. 345/12° NE
T289		Sandstone, coarse, same ridge as above. 330/38° NE
T290		Sandstone, medium to dark grey, buff to orange weathering, medium grained, minor fine grained, fine carbonaceous laminae, calcareous, uneven to ripple bedding, 1.5 m outcrop. 295/42° NE
T291		Sandstone, medium to dark grey, buff to orange weathering, low angle bedding, well defined bedding, fine grained and calcareous.

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 21, 1980 SHEET 23

STATION	UNIT	DESCRIPTION	
T292		Sandstone, dark grey, very fine grained to fine grained, fine parallel	
		bedding, underlain by 5 m of cover and into coarser sandstone, medium	
		to fine grained, orange to red colouration, minor very fine carbonaceous	
		laminae, faint uneven fine bedding, non-calcareous.	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 22, 1980 SHEET 24

STATION	UNIT	DESCRIPTION	
T293		Sandstone, 19 meter Cliff, Top 7 m medium grey, orange colouration, medium to coarse grained, flaggy large scale bedding; lower 12 m. Sandstone, medium grey, minor orange colouration, thickly bedded to massive, some scattered pebbles throughout with two cherty conglomerate bands near the top, abundant near vertical shearing.	
		Major differences between the two units, orientation top unit 335/21 NE, bottom unit 296/37 NE; top unit has more cross-bedding - not as massive.	
T294		Sandstone, ridge on trend with T293 - upsection, sandstone contains abundant large plant impressions, coaly blebs and lenses of pebble conglomerate, calcareous, medium to coarse grained. 305/5° - 25° NE	
T295		Sandstone, on trend with 294, sandstone medium grey, medium to coarse grained, large scale cross-bedding. 343/15° NE	
T296		Sandstone, on trend with 295, medium to coarse grained, medium to thickly	

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 22, 1980 SHEET 25

STATION	UNIT	DESCRIPTION
		bedded, very distinct large scale cross-bedding.
		350/9° NE to 359/21° E
T297		Sandstone, ridge as above, large scale cross-bedding.
		301/9° NE
T298		Sandstone, ridge broken up at this point, not continuous.
T299		Sandstone, ridge medium to dark grey, orange colouration, medium to coarse grained, some cherty fine conglomerate bands, large scale cross-bedding,
		4 m Cliff. 310/20° NE
T300		Sandstone, grey - orange as above, same texture bedding as T299 on trend.
T301		Sandstone, ridge on trend, stratigraphically lower, sandstone as above, minor pebble conglomerate portions rolling and sheared.
		285/38° NE

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TRAVERSE NOTES

PROPERTY Mt. Triangle Area GEOLOGIST R.J. Melin DATE July 22, 1980 SHEET 26

STATION	UNIT	DESCRIPTION	
T302		Sandstone, medium grey, medium grained, minor coarse grained, some pebble	
		lenses, stratigraphically higher than T301 and not as contorted, large scale	
		cross-bedding. 268/24° N	
T303		Sandstone, similar to T302	
		297/8° NE	
T304		Sandstone, as above, on trend with T303.	
		245/12° NW	
T305		Sandstone, medium grey, orange weathering, large scale cross-bedding,	
		similar to above, medium to coarse grained.	
		270/12° N	
T306		Sandstone, medium to dark grey, medium to coarse grained, large scale	
		cross-bedding, orange colouration.	
		320/21° NE	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE June 25/80SHEET 1

STATION	UNIT	DESCRIPTION
T401		Sandstone, grey to dark grey, grey flaggy weathering, medium to coarse grained, non-calcareous, orange grains throughout, low angle cross bedding, large exposure, 10m. Strike: 350 / DIP 15° E.
T402		Sandstone, grey to dark grey, grey weathering, medium to coarse grained, thin bedded to massive, non-calcareous, minor orange grains throughout. Strike: 341 / DIP 76° W.
T403		Sandstone, grey, grey weathering, medium to coarse grained, thin bedded to massive, associated with (underlain by) 0.5m thick bed of fine pebble conglomerate, pebbles of cherts up to 0.3cm in diameter, both rocks are non-calcareous. Strike: 308 / DIP 30° NE.
T404		Sandstone, grey, grey weathering, medium grained, thin bedded to massive, flaggy, cross bedding (low angle) is evident.

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Triangle Block

GEOLOGIST David J. Standring

DATE June 25/80
June 27/80

SHEET 2

STATION	UNIT	DESCRIPTION
T405		Sandstone, tan, tan to buff weathering, fine grained, thin bedded, rubbly, very calcareous. Strike: 197 / 19° SE.
		overlain by;
		Sandstone, grey, grey weathering, medium to coarse grained, medium bedded to massive, orange coloured staining, very calcareous, minor localized folding throughout the 10m exposure, some minor shearing evident, areas of rock are broken into cemented blocks. Strike: 200 / DIP 7° SE.
T406		Sandstone, grey, grey weathering, medium to coarse grained, thin bedded, flaggy, very calcareous. Strike; 330 / DIP 7° NE.
T407		Sandstone, grey, grey to rusty orange weathering, medium to coarse grained, thin to medium bedded, sporadic high calcareous, low angle cross bedding evident. Strike: 320 / 36° SW.

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TRAVERSE NOTES

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SHEET 3

June 27/80

STATION	UNIT	DESCRIPTION
T408		Sandstone, grey, grey weathering, medium grained, thin to medium bedded, very calcareous, low angle cross bedding. Strike: 217 / DIP 4° NW.
T409		Sandstone, grey, grey to rusty orange weathering, medium grained, thin to medium bedded, flaggy, 3m exposure, orange weathering is calcareous, grey weathering is non-calcareous. Strike: 251 / DIP 16° N.
T410		Sandstone, grey, buff to dark grey weathering, fine grained, thin bedded, very calcareous, orange coloured staining. Strike: 298 / DIP 78° SW.
T411		Sandstone, grey, grey weathering, medium to coarse grained, thin bedded, non-calcareous, abundant orange grains throughout. Strike: 315 / DIP 88° SW.

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TRAVERSE NOTES

PROPERTY Triangle Block

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SHEET 4

STATION	UNIT	DESCRIPTION
T412		Sandstone, as in 11D, under uprooted tree, may not be in place, only rubble.
T413		Sandstone, orange to grey, buff to grey weathering, fine grained, very calcareous.
T414		Sandstone, grey to brown, dark grey to buff weathering, medium grained, thin bedded to massive, calcareous, abundant carbonaceous rootlets, plant impressions, shearing and disturbance of outcrop evident. Strike: 302 / DIP 78 ⁰ SW.
T415		Sandstone, grey, rust to light brown weathering, fine to medium grained, thin to medium bedded, calcareous.
T416		Sandstone, grey, grey to buff weathering, medium to coarse grained, thin to medium bedded, very calcareous, abundant orange grains throughout. Strike: 319 / DIP 66 ⁰ SW.

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE June 27/80SHEET 5

STATION	UNIT	DESCRIPTION
T417		Sandstone, light brown, light brown to buff weathering, medium grained, medium bedded, calcareous. Strike: 275 / DIP 17° S.
T418		Sandstone, medium grey to dirty grey, rust to buff weathering, fine grained, argillaceous, thin irregular bedding, very calcareous, carbonaceous rootlets, not in place.
T419		Sandstone, grey, rust to dark grey weathering, fine grained to medium grained, thin irregular bedded, non-calcareous, *rubble.
T420		Sandstone/Siltstone, grey, grey to buff weathering, fine grained, argillaceous, thin bedded, non-calcareous, *rubble.
T421		Sandstone, grey, dark grey weathering, medium to coarse grained, orange grains throughout, *rubble.
T422		Siltstone, dark grey to black, muddy, finely bedded, non-calcareous, *rubble.

TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE June 28/80SHEET 7

STATION	UNIT	DESCRIPTION
T425		Sandstone, grey, grey to orange weathering, medium to coarse grained, cherty, thin to medium bedded, flaggy, sporadic calcareous. Strike: 357 / 7° E.
T426		Sandstone, same as above, low angle cross bedding, irregular medium bedding.
T427		Sandstone, light orange, orange to red weathering, medium grained, cherty, thin bedded, calcareous. Strike: 297/DIP 11° SW.
T428		Sandstone, grey, grey weathering, medium to coarse grained, cherty, thin to medium bedded, calcareous orange grains throughout. Strike: 292/ DIP 4° SW.
T429		Sandstone, as above. Strike: 331/DIP 23° NE.
T430		Sandstone, grey, grey weathering, medium to coarse grained, cherty, thin bedded, non-calcareous, low angle cross bedding evident.

TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StrandingDATE June 28/80SHEET 8

STATION	UNIT	DESCRIPTION
T431		Sandstone, buff to tan, buff weathering, thin to medium bedded, irregular bedding, scattered orange grains, non-calcareous. Strike: 325/DIP 27° NE.
		*taken by waterfall on the N.W. face of Mt. Triangle.
T432		Sandstone, buff to grey, grey weathering, medium to coarse grained, thin to medium irregular bedded, non-calcareous, abundant orange grains. Strike: 324/13° NE.
T433		Sandstone, light grey to orange, grey weathering, medium grained, minor coarse grains, medium bedded, non-calcareous. *rocks in the vicinity exhibit localized small scale folding.
T434		Sandstone, as above, folding at this point is severe.
T435		Sandstone, as before, rocks here are severely disturbed, bedding is broken into blocks, severe local folding is evident, the beds dip in all directions.

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TRAVERSE NOTES

PROPERTY Triangle Block

GEOLOGIST David J. Standring

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SHEET 9

STATION	UNIT	DESCRIPTION	
T436		Sandstone, orangish color, orange to dark grey, medium and coarse grained interbeds, non-calcareous, minor disturbance evident. Strike: 304/ DIP 29° NE.	
T437		Sandstone, buff, buff to dark grey weathering, medium grained, thin bedded to massive, minor low angle cross bedding, non-calcareous conglomerate lens at the base of the 4m exposure. Strike: 334/ DIP 8° NE.	
T438		Sandstone, buff, buff to dark grey weathering, medium grained, thin bedded to massive, very calcareous. *rock in the vicinity is severely shattered and folded, some scattered shearing on a small scale.	
T439		Sandstone, buff, buff to rust weathering, medium grained, thin bedded, flaggy, low angle crossbedding evident, a fine conglomerate band 1m thick is associated with the sandstone, a matrix of sand fine pebbles of cherts up to 0.5cm. Strike: 290/DIP 17° N.	

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TRAVERSE NOTES

PROPERTY Triangle Block

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DATE June 28/80

SHEET 10

STATION	UNIT	DESCRIPTION	
T440		Sandstone, buff, grey weathering, medium grained, appears to be massive,	
		non-calcareous, may not be in place.	
T441		Sandstone, buff, grey weathering, medium to coarse grained, thin bedded,	
		flaggy, large blocks, not in place.	

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StrandingDATE June 30/80SHEET 11

STATION	UNIT	DESCRIPTION	
T442		Sandstone, buff, buff to dark grey weathering, fine grained, calcareous, rubble in creek bed and creek banks.	
T443		Sandstone, buff, buff to brown weathering, fine grained, argillaceous, thin to medium bedded, calcareous, minor carbonaceous rootlets present. Strike: 320 / DIP 76° NE.	
T444		Sandstone, buff, buff to brown weathering, fine grained, thin to medium bedded, non-calcareous. Strike: 315/ near vertical	
T445		Sandstone, buff, buff to brown weathering, fine grained, argillaceous, thin to medium bedded, very calcareous, mudstone stringers present. Strike: 311/68° NE.	

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TRAVERSE NOTES

PROPERTY Triangle Block

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July 1/80

SHEET 12

STATION	UNIT	DESCRIPTION	
T4 46		Sandstone, grey to dark grey, brown weathering, medium grained, thin to medium bedded, very calcareous, orange colored grains throughout, low angle cross-bedding. Strike: 330/ DIP 44° SW.	
T4 47		Blocks of Conglomerate, grey, grey to green grey weathering, very coarse sand matrix, well rounded, cherts up to 5cm in diameter, thin sandstone beds throughout.	
T4 48		Sandstone, buff, buff to brown weathering, fine grained, appears to be thin to medium bedded, very calcareous, rubble under an up-rooted tree.	
T4 49		Sandstone, as above, again only rubble.	
T4 50		Sandstone, grey, buff to brown weathering, fine-grained, rubble.	
T4 51		Sandstone, as above, again rubble.	

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TRAVERSE NOTES

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SHEET 13

STATION	UNIT	DESCRIPTION
T4 52		Sandstone, grey to buff, grey weathering, medium to coarse grained, thin to medium bedded, non-calcareous, minor orange grains throughout. Strike and Dip: horizontal
T4 53		Sandstone, grey to buff, grey weathering, medium grained, thin to medium bedded, non-calcareous, minor orange grains throughout. Strike: 314/DIP 17° NE.
T4 54		Sandstone, as above, with a siltstone lense, Siltstone, grey, grey to dark grey weathering, at least 30 cm thick, in the stream bed.
T4 55		Sandstone, buff to grey, buff weathering, medium grained, appears to be thin bedded, rubble under uprooted tree.
T4 56		Sandstone, buff to red brown, red brown weathering, medium to coarse grained, thin to medium bedded, small scale low angle cross bedding evident. Strike: 295/DIP 20° NE.

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE July 1 /80SHEET 14

STATION	UNIT	DESCRIPTION
T457		Sandstone, brown to rust brown, rust brown weathering, fine to medium grained, thin to medium bedded, low angle cross-bedding, calcareous. Strike: 273 /DIP 7° N.
T458		Mudstone, dark grey to black, black to dark brown weathering, rubbly, minor carbonaceous debris, rubble under an uprooted tree.
T459		Sandstone, red brown to dark grey, grey weathering, fine to medium grained, medium bedded. Strike: 360 / DIP 10° E.
T460		Sandstone, buff to grey, buff weathering, medium grained, irregular thin to massive bedding, cross-bedding, outcrop forms a waterfall. Strike: 324 / DIP 35° NE.
T461		Sandstone, as above, medium to thick bedded.

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE July 1 /80SHEET 15

STATION	UNIT	DESCRIPTION
T462		Sandstone, buff to grey, buff weathering, medium grained, medium to thick bedded, cross bedding evident.
T463		Sandstone, buff to grey, buff weathering, thin bedded, (flaggy) to massive (blocky) slightly calcareous, minor orange grains throughout. Strike: 182 / DIP 35° W.
T464		Sandstone, buff to light brow, light brown weathering, fine grained, thin bedded, rubbly, slightly calcareous; overlain by: Sandstone, grey, brown weathering, medium to thick bedded, calcareous. Strike: 335/53° SW. *outcrop sheared and jointed, exhibits severe disturbance, forms a waterfall.

TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandingDATE July 1/80SHEET 16

STATION	UNIT	DESCRIPTION
T465		Series of Sandstone outcrops, all form waterfalls.
		Sandstone, grey to light brown, light brown weathering, medium to coarse grained, medium to thick bedded, minor orange grains throughout slightly calcareous.
		Strike: 333/63° SW
		342/60° SW
		308/82° SW
		*outcrops exhibit severe disturbance shearing and jointing, slickensides, bedding broken into blocks.
T466		Sandstone, grey to brown, light brown weathering, medium to coarse grained thin to thick bedded, evidence of low angle small scale cross bedding in the thin beds, calcareous.
		Strike: 336 / DIP 88° NE.
		*outcrop again shows severe disturbance

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TRAVERSE NOTES

PROPERTY Triangle Block

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DATE July 1 /80

SHEET 17

STATION	UNIT	DESCRIPTION	
T467		Sandstone, buff to brown, buff weathering, fine grained, thin to medium bedded, 2m outcrop shows signs of disturbance, small scale jointing and shearing. Strike: 295 / DIP 24° NE.	
T468		Sandstone, buff to brown, brown weathering, fine grained, argillaceous, thin to medium bedded, mudstone stringers throughout. Strike: 314 / DIP 36° NE.	
T469		Sandstone, grey to brown, buff weathering, fine to medium grained, medium bedded to massive, non-calcareous, large scale low angle cross bedding. Strike: 330 / DIP 25° NE.	
T470		Sandstone, buff to brown, brown weathering, fine grained, thin to medium bedded, non-calcareous, in association with dark grey Mudstone rubble,	

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TRAVERSE NOTES

PROPERTY Triangle Block

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DATE July 1 /80

SHEET 18

STATION	UNIT	DESCRIPTION	
T4 71		Sandstone, buff, buff weatehring, fine grained, thin bedded, flaggy, very calcareous, small mudstone stringers throughout.	
T4 72		Sandstone, as above, -- underlain by: Siltstone, dark grey to dark brown, dark brown weathering, finely bedded, rubbly, calcareous. Strike: and Dip: horizontal.	
T4 73		Sandstone, buff, buff weathering, fine grained, thin bedded, very calcareous, small mudstone stringers throughout. Strike: 347 / DIP 12° NE.	
T4 74		Sandstone, light brown, light brown weathering, fine grained, argillaceous, medium irregular bedded, slightly calcareous, minor carbonaceous rootlets throughout. overlain by; Sandstone, grey, light brown weathering, medium grained, medium to thick' irregular bedded, calcareous, scattered orange grains throughout. Strike: 269 / DIP 5° S.	

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE July 1 /80SHEET 19

STATION	UNIT	DESCRIPTION
T4 75		Sandstone, brown, brown weathering, fine grained, medium bedded, slightly calcareous, mudstone stringers throughout. Strike: 335 / DIP 24° NE.
T4 76		Sandstone, buff to brown, buff weathering, medium grained, thin to medium bedded, slightly calcareous. Strike: 323 / DIP 35° - 40° NE.
T4 77		Siltstone, light brown, buff weathering, thin to fine bedding, abundant carbonaceous debris, calcareous, 1.5 m exposure. overlain by; Sandstone, buff to brown, buff weathering, medium grained, thin to medium bedded, slightly calcareous, 2m exposure.
T4 78		Sandstone, brown, brown to black weathering, fine grained, appears to be medium bedded, in the stream bed. Strike: 330 / DIP 18° NE.

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TRAVERSE NOTES

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July 2 /80

SHEET 20

STATION	UNIT	DESCRIPTION
T4 79		Siltstone, dark grey to black, black weathering, appears to be medium bedded, rubbly, slightly calcareous, 1m exposure.
		overlain by;
		Sandstone, brown, brown to chocolate brown weathering, fine grained, medium to thick irregular bedded, some low angle cross bedding. 3m. exposure.
		Strike: 315 / DIP 2° NE.
		*taken off the Sst outcrop.
T4 80		Sandstone, buff to grey, buff weathering, medium to coarse grained, appears to be medium bedded.
T4 81		Sandstone, grey, grey weathering, medium to coarse grained, appears to be medium bedded, non-calcareous, outcrop in the form of blocks along creek.

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TRAVERSE NOTES

PROPERTY Triangle Block

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July 2 /80

SHEET 21

STATION	UNIT	DESCRIPTION	
T4 82		Sandstone, brown, brown weathering, fine grained, thin bedded, small scale	
		low angle cross bedding evident.	
		Strike: 190 / DIP 8° W.	
T4 83		Sandstone, grey to light brown, brown weathering, medium to coarse	
		grained, thin to medium bedded, orange grains throughout.	
		Strike: 203 / DIP 11° NW.	

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE July 2 /80SHEET 22

STATION	UNIT	DESCRIPTION
T4 84		Sandstone, grey to dark grey, grey weathering, medium to coarse grained, thin to medium bedded, non-calcareous, abundant orange grains throughout. Strike: 285 / DIP 5° S.
T4 85		Sandstone, grey to light brown, grey weathering, medium grained, thin to medium bedded, non-calcareous, stringers of orange colored grains throughout. Strike: 300 / DIP 9° NE.
T4 86		Sandstone, as above.
T4 87		Sandstone, grey to light brown, grey weathering, medium grained, medium to thick bedded, non-calcareous, cross bedding. Strike: 185 / DIP 8° E.

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TRAVERSE NOTES

PROPERTY Triangle Block

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DATE July 2 /80

SHEET 23

STATION	UNIT	DESCRIPTION
T4 88		Carbonaceous Bloom, Mudstone, black, black weathering, medium bedded,
		blocky.
		Thin zone (30 - 40cm) of bright coal.
		underlain by;
		Sandstone, silty, grey, grey to tan weathering, thin to medium
		bedded.
		Strike: 318 / DIP 7° NE.
T4 89		Sandstone, grey to buff grey, dark grey weathering, medium grained, thin
		to medium bedded, irregular, non-calcareous.
		Strike: 345 / DIP 9° NE.
		underlain by;
		Sandstone, brown, orange brown weathering, fine to medium grained, massive
		irregular bedded.
T4 90		Sandstone, buff to light brown, buff weathering, medium grained, thin to
		medium irregular bedded, slightly calcareous.
		Strike: 196 / DIP 23° E.

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TRAVERSE NOTES

PROPERTY Triangle BlockGEOLOGIST David J. StandringDATE July 2 /80SHEET 24

STATION	UNIT	DESCRIPTION
T491		Sandstone, dark grey, buff weathering, medium grained, thin to medium irregular bedded, slightly calcareous. *outcrop is fluvial eroded and forms an 8m cliff face.
T492		Sandstone, grey to buff, tan to brown weathering, medium grained, medium bedded, irregular, very calcareous. Strike: 270 / DIP 4° N.
T493		Sandstone, grey, brown weathering, coarse grained, thin to thick bedded, non-calcareous.
T494		Sandstone, grey, brown to buff weathering, medium grained, thick bedded to massive irregular bedded, non-calcareous. Strike: 243 / DIP 7° NW.
T495		Sandstone, as above, with thin bright coal bands.

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TRAVERSE NOTES

PROPERTY Triangle Block

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DATE July 2 /80

SHEET 25

STATION	UNIT	DESCRIPTION
T4 96		Sandstone, grey, buff to brown weathering, medium grained, appears to be thick bedded to massive, non-calcareous, outcrop is severely disturbed, shows extreme jointing and shearing, slickensides present. Strike: 321 / DIP 88° NE. 326 56° NE.
T4 97		Conglomerate, cherty sand matrix, ill sorted, pebbles of chert and quartzite up to 2.5 cm in diameter, non-calcareous, 4m exposure. Strike: 203 / DIP 8° E.
T4 98		Zone of Interbedded Sandstone and Carbonaceous Mudstone. Sandstone, tan to rust, tan to grey weathering, fine grained, thick bedded to massive, non-calcareous, some chert conglomerate lenses and beds. Mudstone, black, tan to black weathering, rubbly, finely bedded, carbonaceous rich. Strike: 325 / DIP 79° NE.

** Area is severely disturbed

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 25, 1980

SHEET 1

STATION	UNIT	DESCRIPTION
T307		Coal seam, see TT2 trench description.
T308		Sandstone, medium to dark grey, cherty portions, medium to coarse grained, some very coarse sections, scattered pebbles, calcareous, thickly bedded. 2.5 m outcrop. 265/17° N
T309		Large outcrop section 45 m, up section from T308
		T309A base, sandstone, medium grey, fine to medium grained, uneven to ripple bedded. Sandstone beds vary from 1 to 4 meters, thick interbedded with mudstone and siltstone beds up to 30 cm thick, some carbonaceous to coaly beds up to 10 cm thick, bedding very contorted wrapping from 30 to 90° dip, 330/55° NE. T309B up section, sandstone fine grained to argillaceous with minor coarser beds, fine parallel bedding with minor ripple bedded, calcareous. 295/36° NE
		T309C Finer sequence of sandstones with larger interbeds of siltstone/mudstone beds, beds of argillaceous sandstones and siltstone/mudstone beds, 2 to 4 m thick. The finer beds are dark grey conchoidal fracturing, crumbly. 282/24° N, NE

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TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 25, 1980 SHEET 2

STATION	UNIT	DESCRIPTION
T310		Sandstone, medium grey, medium grained, thickly bedded, overlain by finer silty to mudstone and argillaceous sandstones, forms small anticline 35° NE dip 40° SW dip
T311		Sandstone, medium to dirty grey, fine grained, grading to argillaceous, slightly micaceous, calcareous, muddy and silty bands, tight anticline, Strike 305/dip 62 NE, 35 SW
T312		Sandstone, dark grey, cherty, orange colouration, medium grained, abundant shearing, thickly bedded, calcareous, 1.3 m thick, overlain by .5 m finer sandstone, coal bloom above the sandstones. 270/24° S
T313		Sandstone, medium to dirty grey, fine grained to argillaceous, down section ripple bedding, calcareous, 3 m section, underlain by 2.5 m siltstone to mudstone, conchoidal fracturing, crumbly, dark grey, calcareous. This sequence is repeated in overlying strata as well. 300/17° SW

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TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 25, 1980 SHEET 3

STATION	UNIT	DESCRIPTION	
T314		Sandstone, medium grey, medium grained, minor coarse grained, calcareous, overlain by finer sandstone, argillaceous, thinly bedded, calcareous, ripple bedded.	
		285/35° NE	
T315		Sandstone, similar to T314, very fine grained, thinly bedded.	
		314/27° SW	
T316		Sandstone, medium grey, medium grained, calcareous, underlain by interbedded mudstones and siltstones, minor carbonaceous stringers, 3.5 m section.	
		313/30° NE	
T317		Sandstone, fine grained, argillaceous with thick mudstone interbeds, beds vary from 1 m to 2 m thick, 15 cm coal seam.	
		324/70° NE	
T318		Coal seam, located in axis on a small fold, overlain by fine grained to argillaceous sandstone, bedding varies from thin uneven to ripple bedding	

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TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 25, 1980 SHEET 4

STATION	UNIT	DESCRIPTION	
		with some fine parallel laminations. East limb horizontal slight NE dip.	
		South limb 312/24° SW	
T319		Sandstone/siltstone, large interval, 25 meters of sandstone and siltstone interbeds, sandstones generally fine grained to argillaceous, bedding thin and uneven, bed thickness 3 m to 4 m thick. Interbeds of finer siltstones and silty mudstones, carbonaceous stringers throughout, minor medium grained sandstone interbeds.	
		359/20° W	
T320		Sandstone, large outcrop, 50 meters of interbedded sandstone and siltstone, dirty grey to dark grey, uneven and rippled bedding, calcareous, minor carbonaceous zones and carbonaceous plant fragments in the sandstone.	
		331/34° SW	
T321		Sandstone, argillaceous, silty and fine grained interbeds, tight anticline.	
T322		Sandstone, argillaceous, tight syncline.	

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TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 25, 1980 SHEET 5

STATION	UNIT	DESCRIPTION	
T323		Sandstone, argillaceous to fine grained, large plant impressions and debris, generally dirty grey colour, poorly defined bedding, small carbonaceous stringer.	
		315/37° SW and 40° NE	
T324		Sandstone, argillaceous, to mudstone, minor carbonaceous stringers, steep anticline.	
		324/60° NE, NE limb	
T325		Sandstone, dark grey, medium grey, cherty, medium to coarse grained, orange colouration, large scale cross-bedding, 4 m outcrop.	
		328/42° SW	
T326		Sandstone, medium grey, medium grained.	
		304/58° NE	

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TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 26, 1980 SHEET 6

STATION	UNIT	DESCRIPTION	
T327		Sandstone, medium to dirty grey, medium grained, 4 m outcrop.	
		325/57° NE	
T328		Conglomerate block, 6 m in thickness, probably slump block, pebbles to	
		cobbles up to 4 cm in diameter, sandy and gritty in part.	
T329		Conglomerate, large slump block, generally gritty with pebbles and cobbles	
		and larger boulders scattered throughout, definitely Cadomin in appearance.	
T330		Large conglomerate outcrop as above, 3 m thick.	
		220/35° SE	
T331		Conglomerate/coarse sandstone. Top 8 m coarse to gritty sandstone, grading	
		to pebbles, basal 4 m conglomerate pebbles and boulders up to 7 cm.	
		334/20° SW	
T332		Conglomerate, finer sequence of cherty pebble conglomerate with interbedded	
		sandstones, becoming coarser down section, 7 m section, dip of approximately	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 26, 1980 SHEET 7

STATION	UNIT	DESCRIPTION	
		15° from South to West in direction.	
T333		Sandstone/Conglomerate dark grey, medium to coarse grained, siliceous sandstone, grading to gritty pebble conglomerate down section, abundant block shearing, 3 m outcrop.	
		317/11° SW	
T334		Conglomerate, 5 m pebble to cobble conglomerate, minor boulders up to 6 m in diameter, generally flat lying, slight S/SW dip.	
T335		Conglomerate pebble conglomerate with cobbles and cobble sections throughout, dark grey, very resistant, rolling bedrock, gritty appearance.	
		Strike 300/10° SW	
T336		Sandstone, medium grey, minor buff to orange colouration, calcareous, fine grained faint bedding, underlying thick conglomerate beds.	
T337		Sandstone/Conglomerate, dark grey, interbedded medium grained sandstone	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

DATE July 26, 1980 SHEET 8

STATION	UNIT	DESCRIPTION	
		and conglomerate bed, pebbles to cobbles.	
		220/19° SE	
T338		Sandstone/Conglomerate, interbedded sandstone with pebble to cobble conglomerate. 7 m outcrop, blocks below outcrop contain large boulders, abundant small slickensides and large scale cross-bedding in the sandstone.	
T339		Sandstone/Conglomerate, sandstone grading to conglomerate cherty, gritty, abundant large carbonaceous plant impressions, calcareous, gently rolling bedrock.	
T340		Sandstone, grading to fine pebble conglomerate, quartzitic, light coloured sandstone, grading coarser down section, base gritty sub-rounded conglomerate.	
T341		Sandstone to fine conglomerate, dark grey, made up of cherts, non-calcareous, some chert pebble bands, slight East dip.	

N.E. B.C. 1980 FIELD MAPPING PROGRAM

TRAVERSE NOTES

PROPERTY Rocky Creek

GEOLOGIST R.J. Melin

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STATION	UNIT	DESCRIPTION	
T342		Sandstone, dark grey, cherty, thin uneven bedding, some small to medium	
		scale coarse bedding, minor orange colouration, very resistant.	
T343		Sandstone, block, may not be in place, medium grey, minor buff weathering,	
		medium grained, massive, very resistant.	
T344		Sandstone, dark grey, argillaceous, calcareous, fine well defined ripple	
		bedding, scattered carbonaceous debris, 1.4 m, underlain by 10 cm mudstone,	
		, silty, ironstone nodules underlain by 25 cm carbonaceous mudstone, minor	
		coal stringers, underlain by 2 m + fine grained to argillaceous sandstone,	
		similar to above. 230/19 ^o NW	
T345		Sandstone argillaceous to very fine grained, undefined bedding, vertical,	
		carbonaceous rootlets and small plant debris. Mudstone bed in midsection	
		with minor carbonaceous stringers and laminae. 6 m section.	
		252/14 ^o NW	

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BP CANADA
COAL DIVISION

BOREHOLE No. 80-1

LOGGED BY C. Bickford

DATE July 5, 1980

SHEET No. 1

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	12.19	(12.19)		CASING - NO CORE
	12.85	(0.66)		CORE LOSS - ROCK
	13.34	0.49		MUDSTONE - Dark grey, ferruginous phases, slightly carbonaceous downwards. Occasional thin bright coal bands. Basal 0.10 m darker grey and very carbonaceous, with abundant bright coal bands. Gradational.
0°	14.05	0.71		MUDSTONE - dark grey, ferruginous, abundant tiny carbonised plant fragments, one thick (0.10 m+) bright coal lease near base, ca. a large root. Alternating carbonaceous and ferruginous phases in basal 0.23 m. Abrupt.
	14.15	0.10		MUDSTONE - dark grey, ferruginous, with silty lenticles; some small slumps. Rooty, with a few large plant fragments. Abrupt.
0 to 3°	16.73	2.58		MUDSTONE - dark grey, carbonaceous, with occasional ferruginous phases, particularly in top 1.0 m - Local concentrations of bright coal bands, notably from 1.38 m to 1.92 m below top. Abrupt.

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BOREHOLE PAGE

BP CANADA
COAL DIVISION

BOREHOLE No. 80-1 LOGGED BY C. Bickford DATE July 5, 1980 SHEET No. 2

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	16.82	0.09		MUDSTONE/COAL (50:50) - interbedded black canneloid mudstone and bright banded coal. Broken, possible core loss. Abrupt.
	16.98	0.16		MUDSTONE - black, carbonaceous, slightly ferruginous, abundant thin bright coal bands. Stick, ground at base.
	17.01	0.03		MUDSTONE - dark grey to black, carbonaceous. Ground and broken.
	17.50	(0.49)		CORE LOSS - ROCK
	17.53	0.03		MUDSTONE - black, carbonaceous, abundant thick bright coal bands. Broken stick.
	17.57	0.04		MUDSTONE - black, carbonaceous, abundant thick bright coal bands. Stick.
	17.62	0.05		MUDSTONE/COAL (50:50) - interlaminated black, carbonaceous mudstone and bright coal. Lustricated at top (80° ca.). Stick.

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COAL DIVISION

BOREHOLE No. 80-1

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SHEET No. 3

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	17.63	0.01		MUDSTONE - black, carbonaceous, with abundant bright coal bands. Stick.
	17.65	0.02		COAL - bright.
	17.68	0.03		COAL - bright banded
	17.70	0.02		MUDSTONE/COAL (50:50) - interlaminated dark grey, carbonaceous, ferruginous mudstone and bright coal.
	17.76	0.06		MUDSTONE - dark grey, ferruginous, carbonaceous, scattered bright coal bands. Stick.
	17.78	0.02		MUDSTONE - dark grey, carbonaceous, ferruginous, thick bright coal bands. Stick.
	17.81	0.03		MUDSTONE - dark grey, carbonaceous, ferruginous, thin bright coal bands. Stick.
	17.84	0.03		MUDSTONE - dark grey, carbonaceous, ferruginous, thin bright coal bands. Stick.
	17.87	0.03		MUDSTONE - dark grey to black, carbonaceous, thick bright coal lenses. Broken.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	18.10	(0.23)		CORE LOSS - ROCK
	18.12	0.02		MUDSTONE - dark grey, ferruginous, carbonaceous, abundant thin bright coal bands.
	18.15	0.03		MUDSTONE/COAL (50:50) - interlaminated black, very carbonaceous mudstone and bright coal.
	18.20	0.05		MUDSTONE - ferruginous, carbonaceous, dark grey, rooty, listricated. Stick.
	18.37	(0.17)		CORE LOSS - COAL
	18.39	0.02		MUDSTONE - dark grey, ferruginous, carbonaceous, listricated, with abundant thin bright coal bands in middle.
	18.41	0.02		COAL - bright banded.
	18.42	0.01		MUDSTONE - ferruginous, carbonaceous, black lenticular, thin bright coal bands.
	18.44	0.02		COAL - bright banded.
	18.46	0.02		COAL - dull, lustrous.
	18.47	0.01		COAL - bright banded, stick.
	18.53	0.06		MUDSTONE - black, very carbonaceous, abundant thin and thick (to 0.015 m) bright coal bands. Stick.

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SHEET No. 5

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	18.59	0.06		MUDSTONE - dark grey, ferruginous, slightly carbonaceous, rooty, somewhat listricated, with scattered thick bright coal bands. Stick.
	18.87	0.28		MUDSTONE - dark grey, ferruginous at top. Slightly silty, calcareous. Gradational.
	19.03	0.16		SILTSTONE, grading down to SANDSTONE, very fine-grained - medium grey, tiny ripples. Strongly calcareous. Gradational.
	22.29	3.26		SILTSTONE - dark grey, argillaceous, with local phases of silty, very fine-grained sandstone and silty mudstone. Some small slumps. Rare plant fragments. Dark grey to black, carbonaceous mudstone from 2.42 m to 2.53 m below top. Strongly calcareous; gradational.
0°	22.88	0.59		SANDSTONE - very fine-grained, silty, medium grey, Ripple driff cross-laminated; occasional plant laminae. Three fining-upward cycles. Strongly calcareous; abrupt.

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SHEET No. 6

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	24.33	1.45		SILTSTONE, argillaceous, grading down to MUDSTONE, silty; slightly carbonaceous at base - dark grey, some ferruginous phases, massive. Strongly calcareous at top, decreasing to non-calcareous at base. Gradational.
	32.23	7.90		SILTSTONE - argillaceous, dark grey, occasional sandy phases; locally carbonaceous with thin bright coal bands. Rooty from 0.70 m to 1.30 m below top, and locally below this level. Vague fining-upward sequences and slumps. Strongly calcareous from 5.70 m to 7.50 m below top. Sphaerosiderite horizon from 0.18 m to 0.25 m below top.
	32.80	0.57		SANDSTONE - fine-grained, light grey, silty, with argillaceous and carbonaceous laminae. Chaotic appearance with abundant plant fragments. Strongly calcareous; erosional.
0° to 5°	35.63	2.83		SANDSTONE, very fine-grained/SILTSTONE/MUDSTONE, silty, (50:30:20) - interbedded light grey, silty, ripple-drifted sandstone and dark grey, slumped siltstone and mudstone, with occasional tiny rootlets and plant fragments.

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SHEET No. 7

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				Strongly calcareous throughout. Gradational.
	36.10	0.47		SANDSTONE - very fine to fine-grained, light grey, large-scale ripple-drift cross laminated. Silty, with dark grey siltstone laminae, and scattered plant debris. Strongly calcareous. Abrupt.
	36.13	0.03		COAL - bright banded.
	36.21	0.08		COAL - dull and bright.
	36.29	0.08		COAL - dull, lustrous, hard. Stick.
	36.69	(0.40)		CORE LOSS - COAL AND ROCK.
	36.75	0.06		MUDSTONE - dark brownish grey, carbonaceous, ferruginous, bright coal bands, broken.
	36.79	0.04		MUDSTONE - dark brownish grey, carbonaceous, ferruginous, silty at base. Some thin bright coal bands and small plant fragments. Gradational.
	37.41	0.62		SILTSTONE - sandy, medium grey, rooty, non-calcareous. Erosional.

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SHEET No. 8

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
12 ⁰	38.56	1.15		SILTSTONE, argillaceous/SANDSTONE, very fine-grained/ MUDSTONE, silty (40:30:30) - interbedded medium grey, rippled sandstone and dark grey laminated siltstone and mudstone. Rooty and listricated at top. Sand and silt fractions are strongly calcareous. Gradational.	
	44.36	5.80		SILTSTONE, argillaceous, grading down to MUDSTONE, silty, - dark grey, with occasional low-angle cross-laminated silty phases, and some possible burrows. Dominantly mudstone below 0.82 m below top. Silty/sandy, ripple- drifted phase from 4.20 to 4.45 m below top. Scattered roots.	
	46.76	2.40		MUDSTONE - dark grey to black, carbonaceous, abundant plant fragments, some bright coal lenses in top 0.50 m.	Basal .15 m SN 80 1/1/R
	47.25	(0.49)		CORE LOSS - COAL	=====
	47.34	0.09		COAL - dull, lustrous, and bright banded, mixed in box. Broken and ground.	SN 80 1/1/1

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	47.44	0.10		COAL - dull, lustrous, stick. 50% mudstone, black, carbonaceous, as bands in top 0.03 m.	
	47.53	0.09		MUDSTONE - dark grey, carbonaceous, abundant plant fragments. Stick.	
	47.57	0.04		COAL - dull and bright. Broken stick.	
	47.60	0.03		COAL - bright banded. Broken.	SN80 1/1/2
	47.62	0.02		COAL/MUDSTONE (50:50) - fragments of COAL, bright banded, and MUDSTONE, black, carbonaceous, mixed in core box.	
	47.64	(0.02)		CORE LOSS - COAL AND ROCK	
	47.67	0.03		MUDSTONE - black, very carbonaceous, a few thin bright coal bands.	
	47.70	0.03		COAL - dull, lustrous, abundant laminae of black, carbonaceous mudstone.	=====
	47.73	0.03		COAL - dull, lustrous. A few thin bright coal bands. Stick.	SN80 1/1/3
	47.87	(0.14)		CORE LOSS - COAL	
	47.96	0.09		COAL - dull banded. Stick.	

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SHEET No. 10

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	48.00	0.04		COAL - dull lustrous, stick.	
					SN80 1/1/3
	48.07	0.07		COAL - dull, lustrous, broken stick.	
	48.10	0.03		COAL - dull, lustrous, broken and ground.	
	48.16	(0.06)		CORE LOSS - COAL	=====
	48.25	0.09		COAL - dull banded, lustrous.	
	48.34	0.09		COAL - dull, lustrous.	
	48.36	0.02		COAL - dull and bright. Stick.	
					SN80 1/1/4
	48.40	0.04		COAL - dull and bright. Broken.	
	48.55	0.15		COAL - dull and bright, and bright banded, fragments mixed in core box.	
	49.00	(0.45)		CORE LOSS - COAL	=====
	49.01	0.01		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Broken.	SN80 1/1/5
	49.05	0.04		MUDSTONE - black, carbonaceous, with abundant thin and thick bright coal bands. One large root. Stick.	

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SHEET No. 11

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	49.20	(0.15)		CORE LOSS - ROCK	SN80 1/1/5
	49.41	(0.21)		CORE LOSS - COAL	
	49.58	0.17		MUDSTONE - dark brownish - grey to black, carbonaceous, some bright coal bands. Broken.	SN80 1/1/F
	49.70	0.12		MUDSTONE - dark brownish-grey, carbonaceous, rooty, scattered carbonized plant fragments, locally listricated; broken and ground.	
	49.91	(0.21)		CORE LOSS - ROCK	
	50.03	0.12		MUDSTONE - dark brownish grey, rooty, slightly carbonaceous, abundant plant fragments. Gradational.	
	50.24	0.21		MUDSTONE, silty, grading down to SANDSTONE, very fine- grained, argillaceous - rooty, non-calcareous.	
	51.05	0.81		MUDSTONE - dark grey, slightly carbonaceous, scattered plant fragments. Abrupt.	
	51.11	0.06		MUDSTONE - medium grey, bentonitic, appears reworked.	

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SHEET No. 12

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	52.68	1.57		MUDSTONE - dark grey, carbonaceous phases, rooty, silty towards base. Listricated in top 0.47 m. Gradational.
	53.00	0.32		SILTSTONE - dark grey, argillaceous. Basal half contains abundant (50%) convoluted laminae of light grey, very fine-grained sandstone.
	53.46	0.46		MUDSTONE - dark grey to black, carbonaceous, a few thin bright coal bands towards base. Broken stick.
	53.48	0.02		MUDSTONE - black, carbonaceous to canneloid, abundant thin bright coal bands. Gradational.
	53.51	0.03		COAL - dull banded, lustrous. Broken Stick.
	53.55	0.04		MUDSTONE - black, canneloid, abundant thin bright coal bands. Broken.
	53.58	0.03		MUDSTONE - black, canneloid, abundant thin and thick bright coal bands.
	53.60	0.02		MUDSTONE - black, carbonaceous, a few very thin bright coal bands. Stick.

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SHEET No. 13

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	54.00	0.40		MUDSTONE - dark grey, silty. Some plant fragments and a few bright coal lenses. Broken Stick.
	54.24	(0.24)		CORE LOSS - COAL
	54.31	0.07		COAL - bright banded. Broken stick.
	54.38	0.07		MUDSTONE - dark grey to black, carbonaceous, thin bright coal bands. Ground and broken stick.
	54.82	0.44		MUDSTONE - dark grey, carbonaceous, scattered carbonized plant fragments. Broken stick. Lenses of dull, lustrous coal in basal 0.02 m.
	54.87	0.05		COAL - dull, lustrous. A few thin bright coal bands. Broken.
	55.00	(0.13)		CORE LOSS - COAL
	55.10	0.10		MUDSTONE - black, carbonaceous, becoming canneloid at top. Abundant thin bright coal bands. Broken stick.
	56.57	1.47		MUDSTONE - dark grey, carbonaceous, rooty, listricated phases, scattered plant fragments. Broken stick. Basal 0.34 m badly broken and ground: probable core loss.
	57.72	(1.15)		CORE LOSS - ROCK

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	58.94	1.22		MUDSTONE - dark grey; carbonaceous phases in top 0.64 m. Listricated at top; gradational.
	59.70	0.76		SILTSTONE - dark grey, argillaceous, calcareous, rooty, abrupt.
	61.62	1.92		MUDSTONE - dark grey to black, carbonaceous; more so towards base. In places listricated; some concentrations of thin bright coal bands, particularly towards base.
	61.74	0.12		COAL - bright. Stick.
	61.76	0.02		MUDSTONE - black, carbonaceous, listricated. Stick.
	61.83	0.07		MUDSTONE - dark grey, carbonaceous, thin bright coal bands, listricated, broken.
	62.19	0.36		MUDSTONE - black, carbonaceous, generally listricated, locally with abundant thin bright coal bands. Broken stick.
	62.76	(0.57)		CORE LOSS - ROCK

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SHEET No. 15

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	62.79	0.03		MUDSTONE - black, carbonaceous, with abundant thin and thick bright coal bands. Listericated. Stick; ground at top.
8°	63.59	0.80		MUDSTONE - black, carbonaceous, with abundant thin bright coal bands in top 0.47 m; becoming dark grey, carbonaceous, silty below. Pyrite on cleat from 0.57 to 0.59 m below top. Locally listericated; some plant fragments and rootlets. Gradational.
	65.66	2.07		SILTSTONE - medium grey, argillaceous, scattered plant fragments. Strongly calcareous; gradational.
	68.35	2.69		SILTSTONE, argillaceous/SANDSTONE, very fine-grained, silty (80:20 grading down to 50:50) - interbedded and interlaminated medium grey siltstone and light grey, ripple-drifted sandstone, in places slumped. Overall fining-upward sequence. Strongly calcareous at top; more so towards base. Abrupt.

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SHEET No. 16

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	69.65	1.30		SILTSTONE, argillaceous, grading down to SANDSTONE, fine-grained - fining-upward sequence of light grey, rippled-drifted silty sandstone and dark grey, seemingly homogeneous siltstone. Possible large burrows at 0.35 m below top. Siltstone is strongly calcareous; sandstones very strongly calcareous. Ground at base.
	71.37	1.72		SILTSTONE, argillaceous/SANDSTONE, very fine-grained, silty (80:20) - interbedded and interlaminated light grey sandstone and medium to dark grey siltstone, slumped throughout. A few calcite-rimmed coal spars. Strongly calcareous throughout. Abrupt base, with slickensides & calcite @ 65° CA.
	72.50	1.13		SANDSTONE - light grey, very fine-grained, rusty fracture surfaces (0 to 20° CA); slumped, with abundant contorted mudstone laminae, and intraclasts. Rooty? at top. Contains 0.05 m phase rich in laminae of black, carbonaceous mudstone. Abundant carbonized bark chips. Strongly calcareous; erosional.

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SHEET No. 17

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
14° @ 3.28 below top	76.20	3.70		SILTSTONE/MUDSTONE/SANDSTONE, very fine-grained (50:45:5 grading down to 40:60:0) overall fining-downward, interbedded sequence of dark grey mudstones and siltstones with ripples and laminae of light grey, very fine-grained sandstone. Common slumps. Locally rusty stain is evident, both along fractures and as pervasive coloration. Scattered thin calcite-rimmed laminae of bright coal, particularly near base. Badly broken from 1.39 to 1.52 m below top. Abrupt - Strongly calcareous.	
	79.43	3.23		MUDSTONE - black, carbonaceous, occasionally with concentrations of thin bright coal bands. Lustrated and rooty phases, common throughout. Broken stick, some ground zones; basal contact ground out. Core loss in this unit 1.52 m.	===== SN80 1/2//R (15 cm of roof)
	79.45	0.02		COAL - dull lustrous, broken and ground.	SN80 1/2/1
	79.56	0.11		COAL - dull lustrous, broken stick.	
	80.15	0.59		COAL - dull lustrous, stick.	=====

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	80.46	(0.31)		CORE LOSS - ROCK	=====
	80.53	0.07		MUDSTONE - black, carbonaceous, with thin and thick bright coal bands. Broken and ground.	SN80 1/2/2 =====
	80.98	(0.45)		CORE LOSS - COAL	
	81.04	0.06		COAL - dull lustrous, broken	
	81.10	0.06		COAL - dull banded, lustrous, broken	SN80 1/2/3
	81.13	0.03		COAL - dull and bright, broken	
	81.21	0.08		COAL - dull lustrous, broken stick	
	81.26	0.05		COAL - dull lustrous, broken	=====
	81.29	0.03		MUDSTONE - black, carbonaceous, a few thin bright coal bands, broken stick.	SN80 1/2/4
	81.39	0.10		MUDSTONE - black, canneloid, abundant thin bright coal bands, broken stick.	=====

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COAL DIVISION

BOREHOLE No. 80-1

LOGGED BY C. Bickford

DATE July 5, 1980

SHEET No. 19

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	81.43	0.04		COAL - bright banded, with thin lenses of fusain.	=====
	81.46	0.03		COAL - dull, lustrous. Broken stick.	
	81.50	0.04		COAL - dull, lustrous, broken stick.	
	81.53	0.03		MUDSTONE - black, carbonaceous, abundant thin bright coal bands, ground stick.	
	81.54	0.01		MUDSTONE - dark grey, carbonaceous, ground & broken stick.	SN80 1/2/5
	81.55	0.01		COAL - bright banded. Fragments in box.	
	81.56	0.01		MUDSTONE - dark grey, carbonaceous, broken and ground.	
	81.69	(0.13)		CORE LOSS - COAL	
	81.76	0.07		COAL - dull banded, some lustrous. Broken stick, ground at top.	
	81.82	0.06		COAL - dull, lustrous	
	81.85	0.03		COAL - dull and bright, lustrous, broken stick.	=====

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	81.98	(0.13)		CORE LOSS - ROCK
	82.04	0.06		MUDSTONE - dark grey, ferruginous, rooty. Stick.
	82.07	0.03		MUDSTONE - dark grey, carbonaceous, listricated, stick.
	82.10	0.03		MUDSTONE - dark grey, carbonaceous, listricated, stick, ground at top and base.
	82.21	0.11		MUDSTONE - dark grey to black, carbonaceous. listricated at top.
	82.24	0.03		MUDSTONE - black carbonaceous, abundant thin bright coal bands. Stick.
	82.30	0.06		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Stick.
	82.33	0.03		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Broken stick.
	82.35	0.02		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Stick.

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BOREHOLE No. 80-1 LOGGED BY C. Bickford DATE July 5, 1980 SHEET No. 21

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	82.43	0.08		MUDSTONE - Black , carbonaceous, rooty, listricated, a few thin bright coal bands at base. Stick.
	82.54	0.11		MUDSTONE - black, carbonaceous, rooty, listricated, scattered thin bright coal bands. Stick.
	82.72	0.18		MUDSTONE - black, carbonaceous, listricated, a few thin bright coal bands. Stick.
	82.91	(0.19		CORE LOSS - ROCK
	82.96	0.05		MUDSTONE - black, carbonaceous, abundant thin bright coal bands.
	82.98	0.02		COAL - bright. Stick.
	83.00	0.02		MUDSTONE - dark grey, to black, carbonaceous, thin bright coal bands. Broken stick.
	83.10	0.10		MUDSTONE - dark grey to black, a few thin bright coal bands. Stick.

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COM BCA ^a	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	83.17	0.07		MUDSTONE - dark grey to black, sheared and listricated, "cornflakes".	
	83.18	0.01		COAL - dull, lustrous, sheared and broken.	
	83.28	0.10		MUDSTONE - black, carbonaceous, sheared and pulverized.	
	83.39	0.11		MUDSTONE - black, carbonaceous, listricated, slightly sheared at top. Stick.	
	83.41	0.02		MUDSTONE - black, carbonaceous, thin bright coal bands. Stick.	
	83.53	0.12		MUDSTONE - black, carbonaceous, thin bright coal bands.	
	83.55	0.02		COAL - dull and bright.	
	83.58	0.03		MUDSTONE - black, canneloid. Stick.	
	83.66	0.08		MUDSTONE - black, canneloid, thin bright coal bands. Broken stick.	===== SN80 1/3/R

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
✓	83.75	0.09		MUDSTONE - black, canneloid, thin bright coal bands. Broken stick.	SN80 1/3/R =====
	83.84	0.09		COAL - dull banded, lustrous.	
	83.85	0.01		COAL - bright. Broken stick.	
	83.90	0.05		COAL - dull lustrous. Broken.	SN80 1/3/1
	83.95	0.05		COAL - dull and bright. Broken.	
✓	84.08	0.13		COAL - dull banded, lustrous, broken. Pyrite flecks near base.	=====
	84.22	0.14		MUDSTONE - dark grey, slightly carbonaceous, rooty, ferruginous. Broken stick.	
	84.27	0.05		MUDSTONE - dark grey, carbonaceous, a few thin bright coal bands. Broken.	SN80 1/3/2
	84.44	(0.17)		CORE LOSS - ROCK	=====
✓	84.72	(0.28)		CORE LOSS - COAL	

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SHEET No. 24

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	84.76	0.04		COAL - dull banded, lustrous.	
	84.80	0.04		COAL - dull lustrous. Broken stick.	
	84.88	0.08		COAL - dull, lustrous. Broken stick.	
					SN80 1/3/3
	84.96	0.08		COAL - dull banded, lustrous. Broken stick.	
	84.97	0.01		MUDSTONE - black, carbonaceous, a few thin bright coal bands. Stick.	
	85.00	0.03		COAL - dull and bright.	=====
	85.02	0.02		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Stick.	
	85.04	0.02		MUDSTONE - black, carbonaceous, a few thin bright coal bands. Broken and ground.	SN80 1/3/F
	85.34	(0.30)		CORE LOSS - ROCK	
	85.35	0.01		MUDSTONE - black, carbonaceous, a few thin bright coal bands. Ground at top.	
	85.40	0.05		COAL - bright banded, a few thin black carbonaceous mudstone laminae. Stick.	

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SHEET No. 25

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	85.51	(0.11)		CORE LOSS - ROCK	
					SN80 1/3/F
	85.56	0.05		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Stick.	=====
	85.68	0.12		MUDSTONE - black, carbonaceous, thin bright coal bands, listricated. Stick.	
	85.73	0.05		MUDSTONE - black, carbonaceous, thin bright coal bands. Stick.	
				TOP OF BOX 24.	
	85.75	0.02		MUDSTONE/COAL (50:50) - interlaminated black carbonaceous mudstone and bright coal. Broken stick.	
	85.80	0.05		MUDSTONE - black, carbonaceous, thin bright coal bands. Stick.	
	85.82	0.02		MUDSTONE - black, carbonaceous, abundant thin bright coal bands. Stick.	

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SHEET No. 26

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	85.83	0.01		MUDSTONE - black, carbonaceous, a few thin bright coal bands. Stick. Lustrated.
	85.85	0.02		MUDSTONE - black, carbonaceous, a few thin bright coal coal bands. Stick.
	85.90	0.05		MUDSTONE - black, carbonaceous, thin bright coal bands, abundant at top and base. Stick.
	86.01	0.11		MUDSTONE - dark grey, carbonaceous, somewhat ferruginous, scattered plant fragments, broken stick.
	86.40	0.39		MUDSTONE - medium to dark grey, slightly carbonaceous, crumbly, "bleached" appearance, ferruginous, rooty, intensely lustrated, broken stick.
	86.52	0.12		MUDSTONE - dark grey, rooty, lustrated, carbonaceous, a few thick bright coal lenses. Stick.
	86.56	0.04		MUDSTONE - dark grey, scattered plant fragments, carbonaceous. Stick.

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SHEET No. 27

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	86.66	0.10		MUDSTONE - black, carbonaceous, abundant bright coal bands
				Broken and ground.
	86.90	(0.24)		CORE LOSS - ROCK
	87.20	(0.30)		CORE LOSS - COAL
	87.47	(0.27)		CORE LOSS - ROCK
	87.53	0.06		MUDSTONE - black, canneloid, abundant bright coal bands.
				Stick.
	87.56	0.03		MUDSTONE - black, carbonaceous, abundant thin and thick
				bright coal bands. Stick.
	87.65	0.09		MUDSTONE - dark grey, carbonaceous, some thin bright
				coal bands; occasional listric surfaces. Broken stick.
	87.70	0.05		MUDSTONE - dark grey, carbonaceous, listricated, stick.
	89.03	1.33		MUDSTONE - dark grey, carbonaceous at top, decreasing to
				slightly carbonaceous at base. Listricated throughout;
				in places intensely so. Scattered thin bright coal bands;
				ferruginous phases. Gradational.

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SHEET No. 28

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	93.60	4.57		MUDSTONE - dark grey, silty, particularly towards base. 20% very fine sand as slumped, ill-defined bands in the internal 1.00 to 1.29 m below top. Locally intensely listricated; probable root-disturbance. Scattered rootlets. Non-calcareous. Abrupt.
0° to 5°	95.21	1.61		SANDSTONE, very fine-grained/SILTSTONE (70:30 at top, grading down to 20:80) - interlaminated, rippled, slumped and locally rooty dark grey siltstone and light grey silty sandstone. A very few thin bright coal bands. Patchily calcareous. Gradational.
	96.44	1.23		MUDSTONE - dark grey; carbonaceous and listricated at top. Silty at base. Gradational. Core loss in this unit 0.68 m.
	98.10	1.66		SILTSTONE/SANDSTONE, very fine-grained to fine-grained (50:50) - interlaminated and interbedded, fining-upward, locally rippled or slumped light grey sandstone and medium grey siltstone. Some thin argillaceous, carbonaceous laminae. Intraclasts, scours and some rootlets. Locally pyritic. Slickensides and calcite (60° CA) at 1.22 m

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SHEET No. 29

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				below top. Sandstones patchily moderately calcareous, slumped and abrupt base.
10° @ 0.75	101.17	3.07		MUDSTONE - dark grey, locally silty. Occasional medium grey, listricated phases. Sandstone, light to medium grey fine grained fining down to very fine-grained, argillaceous throughout, with muddy intraclasts, from 1.91 to 2.05 m below top. Non-calcareous. Gradational.
	103.68	2.51		SILTSTONE/SANDSTONE, very fine-grained (70:30) interbedded rooty, medium to dark grey, argillaceous siltstone and light grey silty sandstone. Generally devoid of lamination except towards base which is locally vaguely laminated. Overall fining-upward sequence. Sandstones patchily calcareous, locally strongly so. Slickensides and calcity (75° CA) at 2.16 m below top. Gradational.

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BOREHOLE No. 80-1

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SHEET No. 30

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
0° to 5°	108.28	4.60		SANDSTONE, fine to very fine-grained/SILTSTONE (60:40) - thinly interbedded and interlaminated, ripple-drifted, slumped and locally burrowed(?) medium grey siltstone and light grey sandstone, some of which is quite silty. Rare thin beds of dark grey mudstone. Overall, a fining- upwards sequence: ripple drifted sands predominate at base, while above are vaguely laminated, and in places churned, silts and sands. Thin calcite films (some slickensided) locally present on bedding-planes. Moderately calcareous at top, strongly at base. Gradational.
	110.59	2.31		SILTSTONE/SANDSTONE, very fine-grained (80:20) - interlaminated dark grey argillaceous siltstone and light grey, silty, rippled sandstones (occasional lenses of fine-grained, clean sandstone. Common small-scale slumps. Minor plant debris. Strongly calcareous. Gradational.
	113.18	2.59		MUDSTONE - dark grey, silty at top, locally listricated with occasional bright coal bands. Basal 0.32 m is carbonaceous with locally abundant bright coal bands. Non-calcareous; abrupt.

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BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

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SHEET No. 1

COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
		0.57		OVERBURN: mostly weathered silty mudstone fragments, strongly calcareous.
	3.45	0.53		As above, but considerably siltier and fresher.
				UPPER GETHING
20°	4.84	1.39		SANDSTONE: Top 15 cm very fine-grained and highly argill- aceous and contains sporadic but tiny well-rounded dark grey mudstone clasts. Rest of the sequence comprises fine- to medium-grained clean and well-sorted, cross-bedded sand- stone, strongly calcareous. A few vertical clean fractures.
	6.29	1.45		SANDSTONE: As above. Clean sandstone.
15°	7.72	1.43		SANDSTONE: As above, broken core, locally weathered.
	8.20	0.48		SANDSTONE: As above, contact with silty/muddy lithology, decayed.
				UPPER GETHING
				MIDDLE GETHING

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BOREHOLE No. BP-2-80

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SHEET No. 2

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	9.37	1.17		MUDSTONE/SANDSTONE: Dominance of mudstone interlayered with clean fine/medium-grained sandstone - and the mud/stone/sandstone contacts mostly erosional; strongly calcareous - core broken. Core Loss 0.35 m in this unit.
	9.49	0.12		SANDSTONE: Clean, fine - medium-grained, calcareous.
	9.98	0.49		SANDSTONE: As above, lower contact decayed.
	10.32	0.34		SILTSTONE/SANDSTONE: interlayered, very argillaceous and muddy bands, laminated, strongly calcareous.
15°	11.32	1.00		As above, some significant sandstone layers. Sporadic burrows (some of these, resembling Pelecypods)
	12.05	0.73		SANDSTONE: Clean, fine-grained, strongly calcareous. Basal 0.08 m mudstone.
22°	12.53	0.50		SANDSTONE: Medium grey, fine-grained, generally clean. A few thin muddy bands, with erosional contacts with sands,

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SHEET No. 3

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				small-scale cross-lamination, one Pelecypod shell, strongly calcareous.
	12.91	0.36		SANDSTONE: As above, interbedded below. MUDSTONE/SANDSTONE: Interlayered with erosional mutual contacts; sand very fine-grained, lenticular and laminated. Strongly calcareous throughout; erosional below.
20°	14.05	0.56		SANDSTONE: fine-grained, strongly calcareous, basal 0.19 m, very muddy.
	15.45	1.39		SANDSTONE: As above, locally elongated mud intraclasts.
	16.30	0.85		SANDSTONE: Medium grey, fine-to medium-grained, cross- bedded, 0.22 m muddy zone with muddy intraclasts, core slightly weathered in middle, strongly calcareous.
	16.40	0.10		SANDSTONE: As above.
	17.81	1.41		SANDSTONE/MUDSTONE: Interbedded sequence of medium grey, fine-grained, cross-laminated sandstone and silty

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BOREHOLE No. BP-2-80 LOGGED BY Ali Chowdry DATE July 1980 SHEET No. 4

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				grey mudstone with some gradations. Most microlitho-contacts are erosional. Few sandstone infilled (within mudstone lithology) pelecypod burrows, strongly calcareous throughout; slight overall dominance of sandstone.
	19.34	1.53		SANDSTONE/MUDSTONE: As above.
	20.91	1.57		SANDSTONE: Medium grey, fine-to medium-grained, cross-bedded, 15% mudstone bands with erosional tops and bases; core locally weathered (along a vertical fracture), erosional base.
20°	22.60	1.69		SANDSTONE/MUDSTONE: Interbedded and interlaminated sand, very fine-grained, finely laminated and cross-laminated; mudstone silty with erosional tops. Much burrowing (funneling of dense mudstone into sandy lithology), strongly calcareous, broken core.
				Core Loss in this unit - 0.26 m
	24.44	1.43		MUDSTONE/SILTSTONE: Medium to dark grey, sequence predominantly of mudstones, with some fining-upward intervals burrows, intraclasts, strongly calcareous. Some fragmented

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BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

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SHEET No. 5

COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				and locally slightly weathered.
				Core Loss in this unit - 0.41 m
	25.99	1.55		MUDSTONE/SILTSTONE/SANDSTONE: Light to medium grey, dominantly muddy, stringers and layers of sandstone, much contemporaneous erosion, strongly calcareous throughout.
	27.42	1.43		SANDSTONE/MUDSTONE: Dominantly fine-grained to very fine-grained, laminated and cross-laminated sands, interlayered with silty mudstones with erosional tops and bottoms, much soft-bodied burrowing, few pelecypod burrowing, some vertical burrows with crescentic structures, locally with large mudstone intraclasts, core slightly weathered locally.
	28.88	1.46		MUDSTONE/SILTSTONE/SANDSTONE: Mudstone predominant, bedding is lenticular and disturbed by erosion, much burrowing including tubes and pin-pricked sand fill, some bioturbation, strongly calcareous throughout, core stick.
15°	30.73	1.85		SANDSTONE, MUDSTONE: Interbedded about equal, very fine-grained laminated, scoured mudstone tops, tiny burrows.

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SHEET No. 6

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	31.89	1.16		As above.
	33.39	1.50		SANDSTONE/MUDSTONE: Broadly interbedded, very fine-grained sandstones, silty mudstones, somewhat graded, sharp micro-contacts, much burrowing, pinpricks, core locally weathered, very calcareous.
15 ⁰	34.93	1.54		As above, core stick.
	36.02	1.09		MUDSTONE/SANDSTONE: Dominance of sands, otherwise as above. Core slightly weathered.
	32.60	1.58		As above, core weathered throughout.
	38.10	0.50		MUDSTONE: Dark grey, lenticles of very fine sands < 10% with mildly erosional contacts, strongly calcareous, core weathered along vertical fracture in middle, basal few centimetres heavily encrusted with calcite, (appears to represent very local fracturing along bedding plane).
10 ⁰	39.10	1.00		As above, core stick.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	40.61	1.51		MUDSTONE: Dark grey, generally devoid of lamination, upper 0.52 cm with numerous silty intercalations, rest seemingly homogenous, remains of pelecypods, sporadic carbonized plant debris (also pyritized), strongly calcareous, core stick.
	42.13	1.52		MUDSTONE - As above: one 11 cm band of very fine-grained laminated sandstone, numerous dark flat burrows barely perceptible, as above, core stick.
	43.70	1.57		As above, sporadic discontinuous silty patches presumably resulting from obliteration of primary laminae, core stick.
	44.99	1.29		As above, but no discrete silty patches, core stick.
	46.24	1.25		MUDSTONE: Structureless, strongly calcareous, broken stick.
	47.76	1.52		MUDSTONE: Dark grey, totally lacking lamination, but silty content homogenized, some tiny fragments of pyritized plant matter; pectinid, strongly calcareous, broken stick. Much disseminated pyrite.

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COM BCA*	DEPTH .m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	48.90	1.14		MUDSTONE: As above, broken stick.
	50.95	2.05		MUDSTONE: As above, broken stick.
15°	52.54	1.59		MUDSTONE: Dark grey, silty layers and lenses, dark flat burrows, some clean fracturing of core, strongly calcareous.
10°	54.06	1.52		MUDSTONE: Dark grey, silty laminae and lenses (less than 5%) but appears abundantly (homogenized), pyrite disseminated, sporadic dark flat tubes (burrows), strongly calcareous, broken stick.
10°	56.26	2.20		MUDSTONE: Dark grey, highly silty, some discrete sandstone layers (very fine grained and laminated, argillaceous), dark flat worm tubes evident throughout, strongly calcareous, broken stick.
10°	56.96	0.70		MUDSTONE: Dark grey, riddled with dark burrows (elongate a few mm thick tubes); two silty laminated bands, each 1 cm thick with erosional bases, calcareous stick.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	58.16	1.20		MUDSTONE: As above but devoid of silty lamination.
	61.01	2.85		MUDSTONE: As above, sporadic dark tubular burrows, vertical fracture, broken stick.
	61.79	0.78		MUDSTONE: Slightly weathered and silty at base.
5°	64.37	2.58		MUDSTONE/SANDSTONE: Medium to dark grey interbedded sequence of very fine-grained laminated and cross-laminated sandstone with erosional bases, with dark grey silty mudstone. Much bioturbation evident, also isolated tubular dark burrows; strongly calcareous; core rusted (sporadically) along vertical fracture. Core broken stick; overall sandy content under 30%. Core Loss - 0.19 m
5°	66.50	2.13		MUDSTONE/SANDSTONE: As above, one 0.32 m thick very fine-grained, laminated sandstone, discrete bed. 0.32 m core weathered (rusty) along a vertical fracture.
	67.54	1.04		MUDSTONE: Dark grey, with erosional thin silty laminae, broken stick.

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SHEET No. 10

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
5°	70.58	3.04		MUDSTONE: As above, with slightly thicker silty laminae, broken stick.
	71.07	0.49		As above, broken stick.
	73.44	2.37		MUDSTONE: Dark grey, very homogenous with no apparent silty lamination, strongly calcareous, broken stick. A pelecypod at 74.16 (drilling depth)
	75.50	2.06		MUDSTONE: Dark grey, no evidence of lamination, calcareous, specks and blobs of pyrite, some of these 1 mm or more across, and appear to be circular, pyritized tubes, also increasingly pyritized plant debris.
	76.62	1.12		MUDSTONE: Dark grey, very dense, devoid of silty content in matrix, non-calcareous in some parts, broken stick.
	79.07	2.45		MUDSTONE: Dark grey, homogeneously silty, pyrite-filled tubes, patchily calcareous; some vertical fractures, clean and smooth surfaces; broken stick, 0.12 m band, heavy dense

BOREHOLE

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B.P. CANADA LTD. COAL GROUP

TRENCH NUMBER: SNTR 13 PUMP SEAM SCALE: 1:20
PROJECT: SUKUNKA NORTH 1980 DATE: 12 August 1980
LOCATION: _____ ELEVATION: _____
GEOLOGIST: C. BICKFORD

Her dug out, same seam as found at SNTR 12. Not logged due to proximity to SNTR 12. Attitude here: 167/27 SW.

The seam outcrops along the side of the hill and appears to underlie the hill.

BP CANADA
COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 12

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	88.10	(0.30)		CORE LOSS - ROCK
	88.52	0.42		MUDSTONE: Medium grey with thin rind of Bentonite at base.
	90.69	2.17		MUDSTONE: Medium grey, homogenously silty, weakly calcareous, broken stick, clean vertical fractures. Large impression of what appears to be wooden fragment. Ribbed, carbonaceous. A pelecypod at 90.33 m (drilling depth).
	91.07	0.38		MUDSTONE: Dark grey to very dark, fragments of plants, partially carbonized, also few tubules pyritized, fragments of Pelecypods, mildly calcareous throughout; slightly ferruginous at base.
	91.20	0.13		GLAUCONITE/SANDSTONE: Medium grey, with specks and clusters of glauconite. Top of the unit has a rind of Bentonite.
5°	91.92	0.72		SANDSTONE/MUDSTONE: Dominance of sandstone, very fine-grained, laminated and rippled, erosional fractures, tiny intervals, few burrows, locally slight grading, strongly calcareous throughout, a fracture (along bedding)

BOREHOLE

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 13

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				calcite encrusted in basal part; broken stick.
	92.91	0.99		SANDSTONE: Light grey, fine-grained, generally clean, strongly calcareous, cross-bedded throughout, appearing slightly banded (1.5 cm thick slightly disturbed laminae) a thin calcite encrustation along bedding.
	92.96	0.05		SANDSTONE: As above, but with a concentration of Bivalve Pelecypods, some disarticulated and one gastropod.
	94.22	1.26		SANDSTONE: Medium grey, very fine-grained, laminated, some intervals with mudstone (dark grey), large and pin-pricked burrows, microerosional features, some grading, strongly calcareous; erosional below.
	94.78	0.56		SILTSTONE/MUDSTONE: Dark grey, frequently intercalated, (broken stick), but mutual boundaries blurred by bioturbation which originally appeared erosional, abundant burrowing and obliteration of laminae, strongly calcareous, erosional below.

BOREHOLE

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 14

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	95.01	0.23		SANDSTONE: Light grey, very fine-grained, bedded, strongly calcareous, erosional below.
	96.13	1.12		MUDSTONE/SANDSTONE: Upper half dark grey, silty mudstone with abundant bioturbation; lower half dominantly very fine-grained laminated sandstone with locally intensely burrowed, strongly calcareous: Erosional features, broken stick.
	97.55	1.42		MUDSTONE/SANDSTONE: Frequently interlayered, overall dominance of silty mudstone, bioturbation, microerosional burrowing and much blurring, strongly calcareous. End of Box 34.
2 ⁰	99.16	1.61		MUDSTONE/SANDSTONE: Predominance of dense grey silty mudstone, very fine-grained intervals and burrowing, burrows and bioturbation, broken stick.
3 ⁰	102.11	2.95		MUDSTONE/SANDSTONE: Dark grey, 15% very fine-grained sandstone, upper mudstones bioturbated, strongly calcareous, broken stick.

BOREHOLE

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-2-80 LOGGED BY Ali Chowdry DATE July 1980 SHEET No. 15

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	104.37	2.26		MUDSTONE: Dark grey, homogenously silty but no lamination, strongly calcareous, some clean near-vertical fractures (no encrustation), strongly calcareous, broken stick.
	104.42	0.05		CLAYSTONE: Greasy texture, Bentonitic, erosional base and abrupt top. Tiny intraclasts of dark grey mudstone floating in matrix suggest reworking.
	105.09	0.67		MUDSTONE: Dark grey, no lamination, as above, broken stick.
	108.05	2.96		MUDSTONE: As above, broken stick, Pelecypod at 106.33 (drilling depth).
2 ^o	111.03	2.98		MUDSTONE: Dark grey, (but marginally lighter than the above interval), suggesting more silty content that is homogenously dispersed throughout. Also a few thin discrete silty laminae, strongly calcareous, broken stick.
	111.08	(0.05)		CORE LOSS - ROCK
	111.78	0.70		MUDSTONE: As above, broken stick, no silty lamination,

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COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 16

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				strongly calcareous, very gradational.
	112.00	0.22		SANDSTONE: Black, abundant black mudstone matrix. Sandstone grains very dark and admixed with carbonaceous matter. Tiny black chert pebbles thinly dispersed in matrix. Broken stick. End of Box 39.
	112.24	0.24		MUDSTONE/SANDSTONE: Fine-grained (80:20) grading down to 10:90 at base) - interlaminated, churned and burrowed, scattered pebbles. Abrupt.
				MIDDLE GETHING
				LOWER GETHING
	122.00	9.76		SANDSTONE: Fine to medium -grained, clean, in places with large-scale ripple-drift cross-lamination; also massive and low-angle cross-laminated phases. Locally abundant dark grey argillaceous, carbonaceous laminae. Abundant large muddy intraclasts from 8.71 to 8.74 m below top. From 8.74 to base, medium to coarse-grained sandstone with abundant coal spars. Moderately to strongly calcareous; abrupt. Core loss in this unit - 0.13 m

BOREHOLE

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-2-80 LOGGED BY Ali Chowdry DATE July 1980 SHEET No. 17

COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
5°	126.56	4.56		SANDSTONE: Very fine-grained/SILTSTONE/MUDSTONE: (20:40:40) at top, grading down to 10:45:45) at base) - thinly interbedded, fining-upward beds of light grey, rippled sandstone, medium grey siltstone and dark grey silty mudstone. Locally abundant burrows. Some pyrite blebs. Strongly calcareous. Gradational.
	130.42	3.86		MUDSTONE: Dark grey, silty. Abundant disseminated sand grains in basal 0.11 m. Gradational. Calcareous at top; non-calcareous at base. SANDSTONE: Fine to medium-grained, very abundant laminae and disseminations of dark grey, carbonaceous mudstone. Becomes cleaner at base with discernible rootlets. Non- calcareous. Abrupt.
	133.72	3.30		MUDSTONE: Dark grey, silty at top, occasional bright coal lenses from 0.7 m below top to 0.42 m above base. Large and small plant fragments throughout. Calcareous. Gradational. Core Loss in this unit - 0.75 m
5°	135.74	2.02		SANDSTONE: Very fine to fine-grained/SILTSTONE (50:50)

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COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 18

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				interbedded, fining-upward sequences of light grey, ripple-drifted sandstone and medium to dark grey, locally argillaceous siltstone. Some burrows and load structures. Abrupt. Strongly to very strongly calcareous.
	136.67	0.93		SILTSTONE: Medium grey, sandy, a few large burrows; scattered plant fragments, strongly calcareous, abrupt.
	139.90	3.23		MUDSTONE: Dark grey, carbonaceous in basal 0.48 m. Lustricated phases in basal 1.73 m. Top 1.50 m calcareous; remainder non-calcareous. Gradational.
	141.54	1.64		SILTSTONE: Dark grey, rooty at top, argillaceous and sandy phases. Non-calcareous at top, becoming calcareous towards base. Gradational.
15° to 20°	145.40	3.86		SANDSTONE: Very fine to fine-grained, abundant silty laminae. Ripple-drift cross-laminated. Light grey. Scattered coal spars in basal 0.44 m. A few large plant fragments. Strongly calcareous. Abrupt.

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-2-80 LOGGED BY Ali Chowdry DATE July 1980 SHEET No. 19

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	145.48			MUDSTONE: Dark brown, carbonaceous, ground and pulverized.
	146.08			MUDSTONE/SILTSTONE (50:50) - Vaguely laminated, dark grey siltstone and mudstone. Scattered plant fragments. Gradational. Strongly calcareous.
	152.70			SANDSTONE: Very fine to fine-grained/SILTSTONE/MUDSTONE: (30:60:10 grading down to 0:20:80 at base) - thinly interbedded, overall fining-downward sequence of dark grey, silty mudstone, medium grey siltstone, and light grey sandstone, some ripple-drifted. Large and small burrows. Some load structures. Strongly calcareous. Gradational.
	153.17	0.47		MUDSTONE: Dark grey to black, carbonaceous, with abundant thin bright coal bands at base. Broken and ground stick. Core Loss in this unit - 0.13 m.
	153.19	0.02		COAL - Bright, broken.
	153.56	0.37		MUDSTONE: Black, carbonaceous. Broken stick.

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 20

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	153.66	0.10		MUDSTONE: Dark grey, silty. Slightly calcareous.
	153.83	0.17		MUDSTONE: Dark grey to black, carbonaceous. Gradational.
	153.93	0.10		MUDSTONE: Black, carbonaceous, stick.
	154.10	0.17		MUDSTONE: Black, carbonaceous, stick
	154.11	0.01		COAL - Dull, lustrous, with a whitish, powdering mineral on joints. Broken stick.
	154.33	0.22		MUDSTONE: Dark grey to black, carbonaceous, broken stick.
	154.39	0.06		COAL - Dull banded, lustrous, broken stick.
	154.44	0.05		MUDSTONE: Black, canneloid, abundant thin and very thin bright coal bands. Stick.
	154.45	0.01		COAL - Dull and bright, lustrous.
	154.68	0.23		MUDSTONE: Black, canneloid, abundant thin and very thin

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 21

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				bright coal bands. Stick.
	154.69	0.01		COAL - Dull lustrous.
	154.85	0.14		MUDSTONE - Black, canneloid, abundant thin and very thin bright coal bands. Stick.
	154.89	0.06		MUDSTONE - Black, Carbonaceous, grading up to canneloid with abundant very thin bright coal bands. Stick.
	154.93	0.04		MUDSTONE - Black, carbonaceous, with thin bright coal bands. Listricated. Stick.
	154.94	0.01		MUDSTONE - Black, carbonaceous. Stick. Ground at top.
	154.98	0.04		MUDSTONE - Black, carbonaceous, with thin bright coal bands and some listric surfaces. Broken.
	155.07	0.09		COAL - Dull, lustrous, sheared, broken stick.
	155.10	0.03		COAL - Bright. Broken and pulverized.

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 22

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	155.17	0.07		MUDSTONE - Black, carbonaceous, listricated at top, gradational.
	155.22	0.05		MUDSTONE - Black, cannelloid, abundant very thin bright coal bands. Stick.
	155.23	0.01		MUDSTONE - Black, carbonaceous, slightly sheared. Thin laminae of a whitish, powdery mineral. Stick.
	155.40	0.17		MUDSTONE - Black, carbonaceous; crumbly and slightly ferruginous at top; thick bright coal bands at base.
	156.20	0.80		MUDSTONE - Dark grey, silty, scattered plant fragments. Top 0.12 m and from 0.43 to 0.56 m below top, carbonaceous. Except for carbonaceous phases, unit is moderately calcareous. Gradational.
	156.75	0.55		SILTSTONE - Grading down to SANDSTONE, very fine-grained/ SILTSTONE (50:50) - Medium grey, slumped and churned appearance. Some roots. Abrupt, slumped base. Strongly calcareous.

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 23

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	157.13	0.38		SILTSTONE - Dark grey, argillaceous. Scattered plant fragments and (?) siderite grains. Moderately calcareous.
	159.18	2.05		MUDSTONE - Dark grey to black, carbonaceous. Scattered thin bands and lenses of bright coal towards base. From 0.43 to 0.47 m below top, a sphaeroiderite band, abrupt at top, gradational at base. (Paleosol?). Non-calcareous. Abrupt.
0° to 5°	161.51	2.33		SANDSTONE, very fine to fine-grained/SILTSTONE/MUDSTONE: (5:45:50), grading down to 60:40:0) - thinly interbedded, light grey, rippled sandstone, medium grey siltstone and dark grey silty mudstone. Common large burrows, small rootlets, load structures and scours. Overall fining - upward sequence. Strongly calcareous except in top 0.42 m.
	166.52	5.01		SANDSTONE - Very fine-grained/SILTSTONE/MUDSTONE(10:70:20): Thinly interbedded, locally intensely bioturbated, light grey sandstone, medium grey siltstone and dark grey silty mudstone. Abundant large worm and pelecypod burrows. Common load structures and scours. Unit is composed of many

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SHEET No. 24

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				fining - upward sequences. Scattered carbonized plant frag-
				ments. From 1.38 to 1.40 m below top, coarsely crystalline
				calcite stringers at 60° to 85° CA. Unit locally is pyritic;
				this appears to be coincident with zones of concentrated
				burrowing. Strongly calcareous. Abrupt. Core Loss in this
				unit - 0.16 m.
	167.16	0.64		SILTSTONE - Medium grey, with argillaceous and sandy
				phases. A few large worm burrows. Strongly calcareous.
				Abrupt.
10°	167.81	0.65		BENTONITE - Light to medium grey, with 20% dark grey mud-
				stone as thin planar laminae. Probably reworked. Less pure
				at top. Abundant tiny plant fragments. Abrupt.
	167.87	0.06		BENTONITE - Light grey, with typical greasy feel. Very thin
				mudstone laminae towards top. Abrupt.
	168.44	0.57		SANDSTONE - Very fine grained/SILTSTONE (70:30) - inter-
				laminated, rippled light grey sandstone and medium grey
				siltstone. Generally slumped and burrowed. Scattered plant

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SHEET No. 25

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				fragments. Strongly calcareous. Abrupt.	
	170.48	2.04		MUDSTONE/SILTSTONE (50:50 grading down to 100:0) - thinly interbedded, bioturbated medium grey sandy siltstone and dark grey silty mudstone. Scattered plant fragments towards top. Some carbonaceous phases. Strongly calcareous. Abrupt.	===== 0.15 m Roof Sample SN80 2/1/R
	170.60	0.12		MUDSTONE - Dark grey to black, carbonaceous. Spherosideritic, with bright coal lenses, in basal 0.04 m. Stick.	
	170.69	0.09		COAL - Dull, lustrous. Stick.	=====
	170.77	0.08		COAL - Dull, lustrous, slightly sheared. Broken stick.	
	170.81	0.04		COAL - Dull and bright, slightly sheared, broken stick.	SN80 2/1/1
	170.82	0.01		COAL - Dull and bright, sheared and broken.	
	170.88	0.06		COAL - Bright, slightly sheared, broken stick.	

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COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

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SHEET No. 26

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	170.94	0.06		COAL - Dull lustrous, stick.	SN80 2/1/1 =====
	171.07	0.13		COAL - Dull and bright, lustrous, broken and pulverized.	
	171.19	0.12		COAL - Bright, broken and pulverized.	
					SN80 2/1/2
	171.36	0.17		COAL - Dull banded, lustrous. Some fusain bands. Broken and pulverized.	
	(171.48)	(0.12)		CORE LOSS - COAL	=====
	171.61	0.13		MUDSTONE - Black, carbonaceous with abundant very thin bright coal bands. Broken and ground.	SN80 2/1/F
	171.67	0.06		MUDSTONE - Black, carbonaceous, with abundant very thin bright coal bands. Stick.	0.19 Floor Sample =====
	171.70	0.03		MUDSTONE - Black, carbonaceous, some thin bright coal bands. Rooty, listricated. Ground and broken.	
	(171.87)	(0.17)		CORE LOSS - ROCK	

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BOREHOLE No. BP-2-80

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SHEET No. 28

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	172.25	0.02		MUDSTONE - Black, carbonaceous, thin bright coal bands. Ground and broken.
	(172.63)	(0.38)		CORE LOSS - ROCK
	172.76	0.13		MUDSTONE - Dark grey, slightly carbonaceous. Lustricated, with abundant thin and thick bright coal bands. Broken and ground.
	172.78	0.02		COAL - Dull lustrous, sheared.
	172.81	0.03		MUDSTONE - Black, carbonaceous, with lens of bright coal to 0.02 m thick.
	172.82	0.01		COAL - Dull and bright, lustrous, with very thin (0.001 m) laminae of black, carbonaceous mudstone. Stick.
	172.83	0.01		MUDSTONE - Black, canneloid, with thin bright coal bands. Broken stick.
	172.91	0.08		MUDSTONE - Black, carbonaceous, lustricated with abundant

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SHEET No. 29

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				thin and very thin bright coal bands. Stick. Ground at top.
	172.96	0.05		MUDSTONE - Dark grey to black, canneloid, with abundant thin and very thin bright coal bands. Includes 0.01 m band of black, carbonaceous mudstone. Broken and ground.
	173.18	0.22		MUDSTONE - Dark grey, carbonaceous at top, becoming slightly carbonaceous and ferruginous at base. Silty towards base. Listericated at top, bright coal lenses throughout. Non-calcareous, gradational.
13 ⁰	174.20	1.02		SILTSTONE - Medium to dark grey, argillaceous to sandy, grading down to very fine silty sandstone, some of which is rippled. Two fining - upward cycles. Moderately to strongly calcareous.
	176.05	1.85		MUDSTONE - Dark grey, silty at top, becoming carbonaceous in basal 0.75 m. Locally listericated with plant fragments and thick bright coal lenses. Top 1.80 m is calcareous, non-calcareous below.

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SHEET No. 30

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	176.11	0.06		MUDSTONE - Dark grey to black, carbonaceous to canneloid. Broken.
	176.35	0.24		MUDSTONE - Dark grey; slightly carbonaceous at top. A few thin bright coal bands. Non-calcareous. Abrupt.
	176.43	0.08		MUDSTONE - Dark brownish-grey, spherosideritic, rooty (?). Ground at base.
	176.99	0.56		MUDSTONE - Dark grey. Ferruginous at top; slightly carbon- aceous in basal 0.25 m. Some large plant fragments. Rooty. Listricated, particularly towards base. Gradational.
	180.35	3.36		MUDSTONE - Dark grey, carbonaceous. In places black, with abundant thin bright coal bands, and verging on canneloid. Locally intensely listricated. In places core badly broken. Core Loss - 0.49 m. Abrupt.
	180.58	0.23		MUDSTONE - Dark grey, slightly carbonaceous. Listricated. Gradational.

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SHEET No. 33

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	180.72	0.14		MUDSTONE - Carbonaceous, Dark grey at top, black at base. Gradational.	=====
					SN80 2/2/R
	180.80	0.08		MUDSTONE - Black, canneloid.	=====
	(181.00)	(0.20)		CORE LOSS - COAL AND ROCK	
					SN80 2/2/1
	(181.27)	(0.27)		CORE LOSS - COAL	
	181.34	0.07		COAL - Dull, lustrous	=====
	181.41	0.07		MUDSTONE - Black, canneloid	SN80 2/2/2 =====
10° to 18°	182.34	0.93		SANDSTONE - very fine to fine-grained/SILTSTONE (90:10) - Interlaminated, low-angle and ripple-drift cross-laminated, light grey silty sandstone and medium grey siltstone. Scattered thin laminae of mudstone, dark grey, carbonaceous. Grades up to mudstone, dark grey, silty, carbonaceous in top 0.06 m. From 0.49 m to 0.55 m below top, mudstone, dark grey, carbonaceous, with thin bright coal bands. Throughout unit occasional sheared and slickensided bedding planes.	NOT SAMPLED

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 34

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				Rooty at top. Non-calcareous. Abrupt.	
	(182.41)	(0.07)		CORE LOSS - COAL	=====
	182.50	0.09		COAL - Dull banded. Includes 0.005 m of fusain in two laminae. Stick.	
	182.52	0.02		COAL - Dull and bright.	
	182.57	0.05		COAL - Dull banded, lustrous. Stick.	SN80 2/2/3
	182.61	0.04		COAL - Dull lustrous, broken.	
	182.66	0.05		COAL - Dull lustrous, broken stick.	
	182.68	0.02		COAL - Dull banded, lustrous.	
	182.75	0.07		COAL - Dull, lustrous.	
	182.76	0.01		COAL - Dull banded, lustrous.	

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SHEET No. 35

COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	182.80	0.04		COAL - Dull lustrous.	
	182.81	0.01		COAL - Bright, stick	SN80 2/2/3
	182.82	0.01		COAL - Dull, lustrous, broken.	
---	182.92	0.10		COAL - Dull banded, lustrous, badly broken.	=====
---	182.93	0.01		MUDSTONE - Black, carbonaceous. Broken stick.	
	183.05	0.12		MUDSTONE - Dark grey to black, carbonaceous, with abundant thin bright coal bands. Stick. Ground at base.	
					SN80 2/2/4
	(183.40)	(0.35)		CORE LOSS - ROCK	
	183.44	0.04		MUDSTONE - Black, carbonaceous, abundant thin and very thin bright coal bands. Stick.	
---	183.68	0.24		MUDSTONE - Dark grey to black, carbonaceous, scattered thin bright coal bands. Lustrous.	=====

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COAL DIVISION

BOREHOLE No. BP-2-80

LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 36

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	183.72	0.04		COAL - Dull, lustrous. Broken stick.	=====
	183.78	0.06		COAL - Dull banded. Lustrous. Broken stick.	
	183.99	0.21		COAL - Dull banded, lustrous. Broken and broken stick.	
	184.10	0.11		COAL - Dull, lustrous. Broken, and broken stick.	SN80 2/2/5
	184.15	0.05		COAL - Dull, lustrous.	
	184.19	0.04		COAL - Type indistinguishable. Sheared and pulverized.	
	184.22	0.03		COAL - Dull banded, lustrous, sheared. Broken stick.	
	184.25	0.03		COAL/MUDSTONE - Mixed fragments of coal, dull lustrous, and mudstone, carbonaceous, dark grey.	=====
	184.31	0.06		MUDSTONE - Dark grey, slightly ferruginous, a few thin bright coal bands. Stick.	
	184.36	0.05		MUDSTONE - Dark grey, ferruginous, minor listrication. Broken stick.	SN80 2/2/6

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LOGGED BY R. J. Melin

DATE July 31, 1980

SHEET No. 7

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	25.14	1.20		Sandstone, similar to above, medium to coarse-grained, medium grey, small dark grey clasts, carbonized plant debris badly fractured with mineral replacement in fractures (gypsum replacement?), slightly calcareous to calcareous in parts, large scale cross-bedding, becoming slightly cleaner down section, broken core.
	25.82	.68		Sandstone, medium-dark grey, coarse-grained, minor medium-grained, grades to a very fine conglomerate gritstone, carbonaceous debris and large plant impressions, siliceous, minor calcareous portion at the top. Core badly broken and worn.
	27.24	1.42		Sandstone, gritstone, medium grey, generally very coarse sandstone to fine, gritty conglomerate, minor muddy clasts dispersed throughout with fine, carbonaceous debris, large scale cross-bedding present, siliceous, last 25 cm medium-grained to coarse-grained beds, core broken stick to badly broken at the top. Dip 16°.

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BOREHOLE No. BP-2-80

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DATE July 1980

SHEET No. 38

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	185.14	0.01		COAL - Dull and bright, lustrous.	
	185.18	0.04		COAL - Dull banded, lustrous.	
	185.22	0.04		COAL - Bright banded, lustrous. Broken stick.	
	185.26	0.04		COAL - Bright, broken stick.	
	185.29	0.03		COAL - Dull and bright, broken stick.	SN80 2/2/7
	185.39	0.10		COAL - Bright. Stick	
	185.43	0.04		COAL - Bright. Stick	
	(185.49)	(0.06)		CORE LOSS - COAL	=====
	185.51	0.02		MUDSTONE/COAL (50:50) - Black, carbonaceous mudstone interlaminated with bright coal. Stick.	SN80 2/2/F
	185.55	0.04		MUDSTONE - Black, carbonaceous, with abundant thin and very thin bright coal bands.	

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SHEET No. 39

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	185.57	0.02		MUDSTONE/COAL (50:50) - Interlaminated black carbonaceous mudstone and bright coal. Stick.	
					SN80 2/2/F
	185.62	0.05		MUDSTONE - Black, carbonaceous, with abundant thin and very thin bright coal bands, particularly at top. Stick.	
	185.69	0.07		MUDSTONE - Black, carbonaceous, scattered very thin bright coal bands. Stick.	=====
	185.79	0.10		MUDSTONE - Black, carbonaceous, abundant thick bright coal bands. Stick.	
	(186.04)	(0.25)		CORE LOSS - ROCK	
	186.06	0.02		MUDSTONE - Dark grey, a few thin bright coal bands. Broken and ground.	
	186.18	0.06		MUDSTONE - Dark grey, carbonaceous. A few thin bright coal bands.	
	186.16	0.04		MUDSTONE - Medium greyish-brown, ferruginous, soft.	

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SHEET No. 40

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	186.25	0.09		MUDSTONE - Black, carbonaceous, with cannelloid lenses in basal 0.05 m.
	186.26	0.01		COAL/MUDSTONE (50:50) - Interlaminated, bright coal and black, carbonaceous mudstone.
	187.89	1.63		MUDSTONE - Dark grey to black, slightly carbonaceous. Abundant plant fragments. Rooty, listricated at top.
	188.52	0.63		MUDSTONE - Dark grey, silty, a few large plant fragments. Non-calcareous except for basal 0.13 m which are calcareous.
	190.09	1.57		SILTSTONE/SANDSTONE, very fine-grained/MUDSTONE (50:30:20) - Interbedded, medium grey siltstone, light grey, rippled sandstone and dark grey silty mudstone. Locally abundant plant fragments. Some large worm burrows. Strongly to very strongly calcareous. Abrupt.
	194.29	4.20		MUDSTONE/SANDSTONE, very fine-grained (95:5) - Dark grey silty mudstone with thin rippled interbeds of light grey sandstone. A few thin plant fragments. Strongly calcareous,

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SHEET No. 41

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				except for basal 0.25 m. Abrupt.
	194.36	0.07		MUDSTONE - Dark brownish-grey; sphaerosideritic.
	197.68	3.32		MUDSTONE - Dark grey. Some carbonaceous phases. Scattered plant fragments and thin bright coal bands. Basal contact ground out.
	198.36	(0.68)		CORE LOSS - ROCK
	198.52	0.16		MUDSTONE - Black, carbonaceous with abundant thin and thick bright coal bands at top, grading down to dark grey, slightly carbonaceous at base. Gradational.
	198.80	0.28		MUDSTONE - Dark grey, with scattered sheared and listricated bright coal bands. Friable at base. Abrupt.
	198.92	0.12		MUDSTONE - Black, canneloid, ground at base.
	198.89	0.07		COAL - Dull, lustrous.

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SHEET No. 41A

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	199.14	0.15		MUDSTONE - Black, carbonaceous to canneloid with abundant thin and thick bright coal bands. Core broken and ground. Core Loss in this unit - 0.04 m
	199.40	0.26		MUDSTONE - Black, carbonaceous with scattered thick bright coal bands at top; grading down to dark grey, silty, slightly carbonaceous at base. Gradational.
	200.29	0.89		MUDSTONE - Dark grey, very silty, rooty, non-calcareous, except for basal 0.32 m which is moderately calcareous. Devoid of lamination. Abrupt.
	200.49	0.20		SANDSTONE - Very fine to fine-grained/SILTSTONE(50:50) - Interlaminated light grey rippled sandstone and medium to dark grey siltstone, which is in places argillaceous. Overall a series of thin fining - upward beds. Slickensides and calcite (45° CA) near top. Abrupt. Strongly calcareous.
13°	200.72	0.23		SILTSTONE/SANDSTONE, very fine-grained/MUDSTONE(60:25:15) - Interlaminated, fining - upward sequences of light grey, locally rippled sandstone, medium grey siltstone and dark

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SHEET No. 41B

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				grey silty mudstone. Finely comminuted plant debris on lamination. Some coal spars near top; one rootlet in middle. Strongly calcareous.
	200.91	0.19		MUDSTONE - Dark grey, very silty, strongly calcareous.
	201.08	(0.17)		CORE LOSS - ROCK
	201.28	0.20		MUDSTONE - Dark grey, very silty (discrete layers). Calcareous. Fragments and some listric surfaces, erosional below
	201.70	0.42		SANDSTONE - Light/Medium grey, fine to very fine-grained, cross-laminated, a few cm thick dark grey mudstone layers with indented top; strongly calcareous, basal 6 cm with hairline calcite veins. Abrupt basal contact.
	202.65	0.95		MUDSTONE/SILTSTONE - Medium/dark grey, predominance of mudstone, siltstone 10% and lenticals of very fine-grained sandstone; abundance of large burrows (one cm across and 8 cm deep with distinct grazing matters) in upper 0.30 m sequence. Strongly calcareous throughout, gradational

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SHEET No. 42

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				below. Broken stick.
	202.89	0.24		MUDSTONE: Black, hard, dense, abundance of lenses with im- pressions and some carbonaceous plant debris, basal mudstone extremely dense and ferruginous; fragmented.
	203.68	0.79		MUDSTONE: Black, carbonaceous, basal part dense and cancelloid, non-calcareous, broken stick.
	203.76	0.08		MUDSTONE: Black, thin layers of coal, all badly fragmented.
	203.85	0.09		COAL - Mostly dull, heavy but with abundant (broken stick) bright thin bands (which appear to pinch and swell).
	204.46	0.61		MUDSTONE: Dark grey/black; numerous thin coaly bands, slight- ly silty intervals, broken stick.
	205.40	0.94		SILTSTONE: Medium grey, very argillaceous, vague discon- tinuous lamination; strongly calcareous, broken core, very gradational below.

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SHEET No. 43

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	205.75	0.35		MUDSTONE: Medium grey, richly silty, calcareous except
	206.16	0.41		MUDSTONE: Black, carbonaceous (highly). (Some with conchoidal fracturing), broken stick.
	207.48	1.32		MUDSTONE: Medium to dark grey, locally extremely silty and somewhat carbonaceous, clean vertical fractures, non-calcareous, broken stick.
5°	209.19	1.71		SILTSTONE/MUDSTONE: Medium grey, slight dominance of mudstone, occasional very thin laminae of very fine-grained sandstone with erosional tops at bottom; strongly calcareous, broken stick.
	209.83	0.64		MUDSTONE: Medium grey, top half strongly silty, structural, strongly calcareous throughout, broken stick.
	210.15	0.32		MUDSTONE/COAL: Mudstone abundant and sheared, coals mostly bony and some chunks of bright banded coal. Badly fragmented.

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SHEET No. 44

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	212.40	2.25		MUDSTONE/SILTSTONE: Dark grey, dominance of mudstone and a band of very fine-grained sandstone with tiny muddy intraclasts, strongly calcareous, broken stick.
				Core Loss - 0.12 m.
	212.51	0.11		IRONSTONE/ferruginous band, dense with intertwining of calcite veining; stick.
	212.81	0.30		MUDSTONE: Black with abundance of finely broken and carbonized plant debris; broken stick.
	215.08	(2.27)		CORE LOSS - ROCK
	216.00	0.92		MUDSTONE: Dark grey, middle 20 cm very silty and thin laminae of very fine-grained sandstone. Strongly calcareous. Broken stick.
	217.74	1.74		MUDSTONE: Black, locally carbonaceous, and much fragmented carbonized plant debris, broken stick. Core Loss - 0.45 m
	218.00	0.26		MUDSTONE: As above, fragmented rock.

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SHEET No. 45

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	219.88	1.88		MUDSTONE: Dark grey, slightly silty, fragmented. Core Loss - 0.68 m.
	220.54	0.66		MUDSTONE: Black, carbonaceous, broken stick.
	221.43	0.89		MUDSTONE: Black, locally canneloid (especially middle 0.27 m), gradational below; top 10 cm bony coal.
	222.95	1.52		MUDSTONE: Medium grey, locally very silty, calcareous lower half, lacking lamination, some rootlets. Gradational below, broken stick.
	224.18	1.23		SILTSTONE/MUDSTONE: Top 0.28 m very fine-grained sandstone, strongly calcareous with chaotic lamination, passing below to very argillaceous siltstones. Basal 0.38 m hard ferruginous mudstone with abundant calcite intertwining, some of these thick ones. Calcareous, gradational.
	224.95	0.77		SILTSTONE: Medium grey, very argillaceous, splintery, strongly calcareous, gradational.

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SHEET No. 46

COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	226.56	1.61		SANDSTONE: Light grey, fine grained, cross-bedded, strongly calcareous, some oblique fractures (brittle but no mineralization). Appears to coarsen bottomwards.
	229.41	2.85		SANDSTONE: Top 1.56 m fine grained, light/medium grey, with bands of very fine grained argillaceous sandstone. Erosional bottoms. The rest fine/medium grained with occasional coal spars zones (along which core yields). Basal 0.25 m dark grey and dominantly chert. Whole Unit cross-bedded; Basal 0.60 m weakly calcareous but the rest strongly calcareous. Core much fragmented.
	230.10	0.69		SANDSTONE: Top 0.12 m and bottom 0.10 m very coarse grained to finely gritty, rest fine/medium grained, laminated, cherty, locally weakly calcareous, fragmented core. Erosional basal contact.
	230.87	0.77		MUDSTONE: Medium grey, slightly silty, conchoidal fracture, weakly calcareous, a vertical fracture; gradational below.
	232.13	1.26		SANDSTONE/MUDSTONE: Medium/dark grey, frequently inter-

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SHEET No. 47

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				layered, very fine-grained argillaceous lamination, strongly calcareous sandstone and highly silty mudstone. Ripples and lenticles of sands and silts, slight dominance of sandstone, gradational, broken stick.
	234.97	2.84		SANDSTONE: Medium grey, very fine-grained and abundant argillaceous (as thin frequently occurring laminae), mostly laminated and rippled intervals, some wavy and bioturbated laminae, brief siltstone intervals, occasional burrows, strongly calcareous throughout, one clean oblique fracture with 3-4 mm calcite encrustation. Broken stick.
	236.42	1.45		SANDSTONE: As above, marginally with higher argillaceous content, broken stick.
	236.93	0.51		MUDSTONE: Medium grey, very silty at top, strongly calcareous, a vertical fracture, slightly calcite encrusted, broken stick.
	237.05	(0.12)		CORE LOSS - ROCK

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SHEET No. 48

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	237.70	0.65		MUDSTONE: Dark grey to black, finely broken, plant debris slightly carbonaceous but readily splits into small fragments (might have some clay bentonite component). One fragmented; appears gradational below.
	237.90	(0.20)		CORE LOSS - ROCK
	238.07	0.17		MUDSTONE/CONGLOMERATE: Top half highly carbonaceous, rest dull and bright banded coal. Fragmented core.
	238.23	0.16		MUDSTONE: Black, carbonaceous, abundant carbonaceous plant matter.
	238.31	0.08		COAL: Top half dull bony, rest bright and dull.
	238.50	0.19		MUDSTONE: Black, highly carbonaceous, with bands of coal.
	240.00	1.50		MUDSTONE: Dark grey, slightly silty middle 0.15 m, 6 cm inner dull and bright coal. Fragmented core.
				Core Loss - 0.24 m.

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SHEET No. 49

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	242.10	2.10		MUDSTONE: Dark grey, locally very silty and discontinuously laminated, small abundant carbonized plant debris. Sporadically calcareous. Fragmented to broken stick. Core Loss - 1.03 m. From this block NQ core begins downward.
	242.88	0.78		MUDSTONE: Medium/dark grey, strongly calcareous, broken stick.
	243.00	0.12		MUDSTONE: Black with thin carbonaceous intercalations, core broken up, gradational below.
	243.25	0.25		COAL: Dull banded (upper half), rest dull lustrous, broken stick.
	243.40	(0.15)		CORE LOSS - COAL
	244.48	1.08		MUDSTONE: Dark grey, friable, 10 cm dull coal. Core broken. Core Loss - 0.34 m.
	245.60	1.12		SILTSTONE/MUDSTONE: Homogenized sequence, no lamination, locally rooty and calcareous throughout.

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SHEET No. 50

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	245.76	0.16		SANDSTONE: Medium grey, fine grained, cross-laminated, argillaceous at top, calcareous; a thin band of coal.
	247.30	1.42		SANDSTONE: As above. Top 0.80 m has 5° dip but the remainder has variable dip of 65° to 70°. Also scattered zones and some recemented. Calcite mineralization, coal spars locally. Fault indicated by listricated and pulverized (recemented zones); disturbed contact with mudstone below.
	248.80	1.50		MUDSTONE: Black, top 0.30 m badly fragmented and with calcite mineralization, rest slightly ferruginous, silty mudstone and largely undisturbed. Core Loss in this unit - 0.42 m, probably near top.
	250.00	1.20		MUDSTONE: Dark grey, vaguely discernible band of silts, strongly calcareous, broken stick.
	251.48	1.48		MUDSTONE: Dark grey, carbonaceous locally, 0.21 m ferruginous and calcareous, fragmented. Core Loss - 0.33 m.

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COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	253.85	2.37		MUDSTONE: Medium/dark grey, locally vaguely discernible silty laminae but imperceptibly blending into mudstones. Abundant carbonized plant debris and some coal spars. Locally ferruginous and calcareous; broken stick, except band 0-1 m fragmented and very carbonaceous.
	254.00	(0.15)		CORE LOSS - COAL
	254.25	0.25		COAL: Coal dull lustrous, hard, minor bright laminae, stick broken (0.14 m). Coal - bright banded, streaks of pyrite. Stick broken (0.11 m).
	254.81	0.56		MUDSTONE: Black, locally very coaly, otherwise highly carbonaceous, fragmented core.
	254.97	(0.16)		CORE LOSS - ROCK
	255.20	0.23		MUDSTONE: Black, carbonaceous, coal bands. Fragmented, abrupt below.
5°	255.76	0.56		SANDSTONE: Medium grey, very fine grained, thin argillaceous

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SHEET No. 52

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				and silty laminae, cross-laminated, some tiny ripples.
				Increasingly rooty, calcareous, erosional at base.
	256.45	0.69		MUDSTONE: Dark grey, finely broken and disseminated carbonized plant debris, broken stick, gradational.
	258.12	1.67		MUDSTONE/SILTSTONE: Broadly interlayered, about equal, mostly grey and silty, light/medium grey, rooty throughout, devoid of lamination, broken stick. Finely broken plant debris.
	259.19	1.07		MUDSTONE/SILTSTONE: As above, upper half dominantly muddy, rest silty and with fractures of very fine grained sandstone, broken stick.
	261.07	1.88		SANDSTONE: Light grey, fine to very fine-grained, cross-laminated, and rippled pebbles. Some disturbed laminae in top 0.17 m. Finely macerated plant debris (carbonized) comprising darker laminae, one stylotite zone, coal spars, siliceous, core fractured at two points but nothing significant. Broken stick.

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SHEET No. 53

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	262.60	1.53		SANDSTONE: As above, Great abundance of carbonized matter and this appears locally concentrated and appears as wavy dark lamination, resulting in muddy intraclasts and silty/muddy laminae, coal spars, siliceous, erosional at base.
	264.08	1.48		SILTSTONE/MUDSTONE: Broadly interlayered, light to dark grey, some very fine-grained and argillaceous sandstone at top end, disturbed and chaotic lamination (in sands), non-calcareous, broken stick.
	264.94	0.86		SILTSTONE/MUDSTONE: As above, dark grey, slight dominance of muddy fractures, broken stick; gradational below.
	266.54	1.60		MUDSTONE: Black, carbonaceous, locally developing into thin coal bands, fragmented.
	267.45	(0.91)		CORE LOSS - ROCK
	270.22	2.77		MUDSTONE: Dominantly black and carbonaceous and locally silty. Canneloid texture, between 0.70 m dark grey and very silty (homogenously) and calcareous, lower end. Broken stick.

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SHEET No. 54

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	271.17	0.95		SILTSTONE: Dark grey, very argillaceous; structureless, thin muddy layers (Imperceptibly passing to silty), gradational, stick broken.
	271.40	0.23		SANDSTONE: Medium grey, very fine grained and passing locally to silty, cross-laminated, tiny ripples, microfaulting (syntepositional) in upper half, strongly calcareous, gradational.
5°	273.40	2.00		SILTSTONE/SANDSTONE: Medium to dark grey, dominance of argillaceous silts with very fine grained highly argillaceous sandstone. Some graded units in sandy sequence, strongly calcareous, some clean fractures, broken stick and fragmentation. Core Loss in this unit - 0.25 m.
	274.02	0.62		MUDSTONE: Black, very silty, locally carbonaceous, broken stick. Core Loss in this unit - 0.11 m.
	276.40	2.38		SANDSTONE: Medium grey, dominantly very fine-grained, laminated and cross-laminated, few local mudstone bands, some silts, strongly calcareous; local steep clean fracturing.

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SHEET No. 55

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				0.15 cm silty beds with calcite hairline veins. Sandstones becoming clean in basal 0.45 m.
	278.25	1.85		SANDSTONE: As above, slightly higher argillaceous content, a few coal spars, strongly calcareous, broken stick.
	279.26	1.01		MUDSTONE/SANDSTONE: Medium grey to black, and slightly carbonaceous sands, very fine grained argillaceous with chaotic lamination (? due to burrowing as few isolated burrows seen within the sand). Strongly calcareous throughout, broken stick.
	279.68	0.42		SILTSTONE: Dark grey, richly argillaceous, strongly calcareous. Broken stick.
	281.56	1.88		MUDSTONE/SILTSTONE: Imperceptibly blending into each other, medium to dark grey, vague sporadic laminae, carbonized plant debris, locally very dense-hard and ferruginous, one little fracture (mineralized), bottom 0.18 m very carbonaceous and fragmented, rest broken stick. Strongly calcareous.

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BOREHOLE No. BP-2-80

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SHEET No. 56

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	282.22	(0.66)		CORE LOSS - ROCK	
	282.40	0.18		BONE/COAL: Hard mudstone with coal streaks and some bright bands. Broken stick.	=====
	(282.55)	(0.15)		CORE LOSS - ROCK	=====
	282.60	0.05		MUDSTONE: Hard, carbonaceous, with tin coaly stretches, bottom half bony (large pieces).	SN80 2/3/2
	(282.69)	(0.09)		CORE LOSS - COAL	
	282.76	0.07		COAL: Top 2 cm bright banded coal passing below into hard bony coal with some bright laminae.	SN80 2/3/3
	283.06	0.30		MUDSTONE: Black, hard, highly carbonaceous, locally crusty and canneloid (large pieces).	SN80 2/3/4
	283.13	0.07		COAL: Dull and hard, lustrated, fragmented.	SN80 2/3/5
	283.25	0.12		COAL: indeterminate but due to pulverization.	

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SHEET No. 57

COM BCA°	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	283.40	0.15		COAL: Dull lustrous, listricated and sheared, crumbling readily (large pieces).	SN80 2/3/5 =====
	283.54	0.14		COAL: Very dull, bony, very dark grey hue and broken core. Strongly calcareous (as if calcareous matter finely disseminated) No veining at all.	SN80 2/3/6 =====
	283.72	0.18		COAL: Dull lustrous, highly listricated, sheared (readily crumbles), broken stick.	SN80 2/3/7 =====
	(283.75)	(0.03)		CORE LOSS - COAL	
	283.86	0.11		COAL: Dull, hard, fragmented.	
	283.99	0.13		COAL: Dull lustrous, highly listricated and sheared (crumbling). Broken stick.	SN80 2/3/8
	284.16	0.17		COAL: Dull, hard, listricated, broken core.	
	284.26	0.10		COAL: Bright banded, locally sheared, broken core.	

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SHEET No. 58

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	(284.31)	(0.05)		CORE LOSS - COAL	SN80 2/3/8
					=====
	(284.39)	(0.08)		CORE LOSS - ROCK	
					SN80 2/3/9
	284.46	0.07		MUDSTONE: Carbonaceous and locally bony (broken core)	=====
	284.56	0.10		COAL: Dull with bright coal, highly listricated and sheared (fragmented).	
					SN80 2/3/10
	284.61	0.05		COAL: Dull, muddy, highly listricated, sheared, all in small fragments.	=====
	(284.68)	(0.07)		CORE LOSS - COAL	
	(284.75)	(0.05)		CORE LOSS - ROCK	SN80 2/3/11
	284.84	0.11		MUDSTONE: Black, hard, coaly, listricated, broken core.	=====
	(284.92)	(0.08)		CORE LOSS - COAL	
					SN80 2/3/12
	284.98	0.06		COAL: Dull-banded, slightly listricated, thin chalky	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				encrustations (not calcareous) on across laminae, broken stick.	
					SN80 2/3/12
	285.21	0.23		COAL: Hard, crusty coal (muddy), with frequent streaks of vitrinite, whitish encrustation as above, broken core (could be all bony).	=====
	(285.29)	(0.08)		CORE LOSS - COAL	
					SN80 2/3/F
	285.43	0.14		MUDSTONE: Black, hard, highly carbonaceous with frequent thin laminae of vitrinite, white encrustation, broken core.	=====
	286.00	0.57		MUDSTONE: Black, very carbonaceous, rich in carbonized plant hash, locally coaly laminae, appears slightly ferruginous, broken core.	
	286.09	0.09		MUDSTONE: Fragments of mudstone mixed with fragments of hard bony coal with bright streaks (seperated to see more loss allocation for this zone and maybe loss of coal).	
	286.34	0.25		MUDSTONE: Very hard, richly silty, black, carbonaceous,	

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SHEET No. 60

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				broken core and large listricated pieces.
	286.64	0.30		MUDSTONE: Top 0.13 m is heavily sheared (corener flabby), silty and hard (broken stick), lower one.
	286.73	0.09		COAL; Dull, very hard, bony, bright laminae, whitish encrustation, broken core.
	286.78	0.05		MUDSTONE: Black, carbonaceous, broken core.
	286.83	0.05		COAL: Bony, very muddy, a few streaks of vitrinite, broken core.
	286.93	0.10		COAL: Hard, dull bony (much higher vitrinite than the above ply), broken core.
	287.02	0.09		COAL: Bright banded, broken core.
	287.07	0.05		MUDSTONE: Dark grey, very carbonaceous, broken core.
	287.29	0.22		MUDSTONE: Black, very carbonaceous, especially the lower

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SHEET No. 61

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				half and hard crusty. Broken core.
	287.48	0.19		MUDSTONE: Black, hard, crusty, as above, broken stick.
	287.53	0.05		COAL: Dull-banded, hard, competent, broken stick.
	288.12	0.59		MUDSTONE: Black, carbonaceous, abundant carbonized plant debris, locally thin coaly laminae, especially in lower half of unit. Broken core.
	288.37	0.25		MUDSTONE: Black, highly fragmented and jumbled up with a large (0.07 m) piece.
	289.75	1.38		MUDSTONE: Black, carbonaceous, slightly ferruginous. Broken core.
	290.08	0.33		FERRUGINOUS band: Hard, pinkish-reddish, silty. Calcite mineralization in centre.
	290.49	0.41		MUDSTONE: Dark grey, but appears black along highly listricated surfaces (but this listrication obvious only on

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SHEET No. 62

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				breaking the core) yeilding along planes near-parallel to core axis.
	290.87	(0.38)		CORE LOSS - ROCK
	291.76	0.89		MUDSTONE: As above, broken core.
	292.05	0.29		MUDSTONE: Black, Badly fragmented; very carbonaceous, sreaks of coal.
	292.40	0.35		SILTSTONE: Rusty and dark grey, very argillaceous, hard ferruginous band (it can be contended). Broken core.
	293.07	(0.67)		CORE LOSS - ROCK
	293.63	0.56		MUDSTONE: Black, carbonaceous, silty, basal 0.08 m rusty ferruginous. Broken core.
	293.96	0.33		MUDSTONE: As above, broken core.
	294.63	0.67		MUDSTONE: Black, carbonaceous , hard, coaly laminae, core

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SHEET No. 63

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				broken into small pieces, gradational below.
	295.00	0.37		SANDSTONE: Light/medium grey, very fine-grained, laminae of silts and argillaceous matter and appearing banded locally. Carbonized plant matter locally providing dense laminae, rippled and some erosional features. Calcareous, gradational.
	295.49	0.49		MUDSTONE: Black, splintery, slightly ferruginous, especially basal 0.15 m, silty, very gradational, broken stick.
	295.80	0.31		SILTSTONE: Medium grey, clean, lacking lamination and appears to be root disturbed, occasional roots but abundance of finely broken and carbonized plant matter, stick.
	295.93	(0.13)		CORE LOSS - ROCK
	296.50	0.57		SILTSTONE: Medium grey, as above: Some very fine-grained intervals in middle, laminated (sporadic). gradational, broken stick.
5°	297.86	1.36		SANDSTONE: Medium grey, brief dark grey intervals of silty

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SHEET No. 64

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				mudstone, sands very fine-grained, argillaceous, small-scale cross-lamination, local rippling, very brief intervals of graded units, microerosional boundaries with silty/muddy zones, calcareous, sparing finely broken plant debris (15-20%). Broken stick.
	300.88	(3.02)		CORE LOSS - ROCK
	301.60	0.72		SANDSTONE: Initial 0.20 m silty, dark grey mudstone, remainder medium grey, very fine-grained sandstone, rippled and cross-laminated, calcareous, dark laminae (due largely to concentration of carbonized plant debris interbedded below). Calcite vugs and veins in upper 0.28 m, broken stick.
	302.83	1.23		MUDSTONE: Black, locally very carbonaceous, broken core.
	303.07	(0.24)		CORE LOSS - ROCK
	304.00	0.93		MUDSTONE: Black, carbonaceous, as above, extremely silty in basal 0.20 m. Broken stick.

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SHEET No. 65

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	304.39	0.39		SILTSTONE: Medium grey, topmost 0.20 m very muddy, gradational, stick.
	306.84	2.45		SANDSTONE/SILTSTONE: Medium/dark grey sequence of very fine grained sandstone and argillaceous siltstone (25%). Very distinctive unit with abundant cross-lamination and wavy/rippled effect, some of these appear to be due to organic activity, microerosional contacts, some dark tubular burrows, appears broadly coarsening upwards, calcareous, broken stick.
6°	308.37	1.53		SANDSTONE: Medium grey, sensibly less argillaceous silty content than above, very fine-grained, laminated and cross-laminated, microchanneling, 0.12 m zone syndepositionally disturbed with 'soft' sediments of darker and finer lithology flating within sandstone matrix, a large void in core due to fracturing. Strongly calcareous, broken stick.
	309.07	0.70		SANDSTONE: As above, very argillaceous, broken stick, gradational below.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	309.82	0.75		SILTSTONE: Dark grey, very muddy, sporadic lamination, calcareous, gradational. Broken stick.
	310.10	(0.28)		CORE LOSS - ROCK
	311.37	1.27		SANDSTONE: Light/medium grey, very fine-grained, small-scale cross-laminated throughout, brief dark grey silty zones, tiny ripples which have darker laminae at top of ripple sets (waving and veining resulting in [?] of silty/muddy laminae during brief quicksand periods. Basal 0.28 m dark grey and richly silty/argillaceous. Strongly calcareous, one mineralized fracture, broken stick.
	313.09	1.72		SILTSTONE/MUDSTONE: Dark grey, dominance of mudstone, broadly interlayered but imperceptibly passing to either lithology.
	315.95	2.86		MUDSTONE: Dark grey/ black, locally very carbonaceous and crusty, ferruginous bands, each 3 to 5 cm thick silty/sandy laminae. Upper half calcareous, broken stick.

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SHEET No. 67

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	316.41	(0.46)		CORE LOSS - ROCK	
	317.41	1.00		SILTSTONE/MUDSTONE: Dark grey, dominance of mudstones, banded in parts, 0.15 m very fine grained sandstone with tiny coal spars, calcareous throughout, gradational. Broken stick.	
	318.84	1.43		MUDSTONE: Dark grey, silty, lacking lamination (vague in top 0.15 m), locally ferruginous. Basal 4 cm 60% are more pyrite but has abundant cavities. This is essentially mudstone rich in carbonized debris. Either due to solution effects (preferential) or more likely due to escaping gases released from putrid mud and vegetation. This pyritous, cavernous band comprises the immediate roof of the ensuing coal seam.	15 cm roof sample: SN80 2/4/R
	318.93	0.09		COAL: Muddy, bony, lower 4 cm has very fine grained and frequent thin bright laminae. Large piece.	SN80 2/4/1 =====
	319.00	0.07		MUDSTONE: Black, very carbonaceous, some coal intercalation broken pieces.	SN80 2/4/2

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SHEET No. 68

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	319.11	0.11		COAL: Bony, hard, abundant disseminated detritus, 1 cm bright band, broken stick.	=====
					SN80 2/4/3
	319.20	0.09		COAL: Dull lustrous, 2 cm crusty, hard and 1 cm bright at base, large piece with listric surfaces.	=====
	(319.24)	(0.04)		CORE LOSS - COAL	
	319.28	0.04		COAL: Dull and bright.	
	319.30	0.02		COAL: Bony, hard, with tiny bright streaks, large pieces.	
					SN80 2/4/4
	319.39	0.09		COAL: Bright banded, with 1 cm dull band at top end; broken stick.	
	319.44	0.05		COAL: bone, hard and distinctly hard and muddy. Two pieces with highly listricated surfaces.	
	319.47	0.03		COAL: Bright, large pieces.	=====
	319.52	0.05		COAL/BONE: Hard/muddy, large pieces with listric surfaces.	SN80 2/4/5

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m:		DESCRIPTION	
		MEASURED	APPARENT		
	319.60	0.08		COAL/BONE: Hard, muddy, large pieces.	SN80 2/4/5 =====
	319.84	0.24		MUDSTONE: Mostly hard with carbonized plant matter/band 4 cm sheared and pulverized mudstone. Mostly stick broken.	SN80 3/4/6 =====
	319.88	0.04		COAL: Dull with frquent thin bright bands. Broken stick.	SN80 3/4/7
	319.97	0.09		COAL: Bright, competent, large pieces with listric surfaces.	=====
	320.68	0.71		MUDSTONE: Dark grey, though in core-form but is 'corn- 'flakey' yeilding readily undoubtedly sheared mudstone. Much listricated surfaces. Large pieces. Core Loss in this unit - 0.22 m.	0.15 cm Floor Sample SN80 2/4/F
	320.88	0.20		MUDSTONE: Black, hard, with coal spars, carbonaceous thin (1/2 cm) white mineralized zone (not calcareous).	
	321.56	0.68		MUDSTONE: Medium grey, very silty, dispersed carbonized plant matter, (especially lower base). Broken core, gradational.	

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SHEET No. 70

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	322.00	0.44		SILTSTONE/SANDSTONE: Finely interlaminated sequence, sand very fine-grained, argillaceous. Delicate and tiny ripples. Thin vertical tubules puncturing laminae - these appear to be burrows, as no evidence of carbonized matter to signify rooty matter. Weakly calcareous. Upper 0.15 m zone with some mineralization fracture zone. Broken stick.
	322.25	(0.25)		CORE LOSS - ROCK
	322.80	0.55		MUDSTONE: Dark grey to black, basal 0.13 m very silty and calcareous; calcite vein at base.
	323.80	1.00		SANDSTONE: Light/medium grey, very fine-grained, small-scale cross-lamination, even by ripple trains. Extremely calcareous, broken stick. Locally dark fine laminae due to finely macerated and carbonised plant debris. Core Loss in this unit - 0.26 m.
	325.58	1.78		MUDSTONE: Dark grey to black, 0.15 siltstone with rootlets, very silty, lacking lamination, broken stick.

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SHEET No. 71

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	326.62	1.04		MUDSTONE: Black, carbonaceous throughout, locally hard crusty bands of bony coal. Core fragmented, some mudstone toward base is cornflakey.
	327.17	0.55		SILTSTONE/MUDSTONE: Broadly interlayered dark grey laminated siltstone and black silty mudstone, locally ferruginous bands of carbonized plant debris, calcitic infills, calcareous throughout. Core broken.
3 ⁰	328.45	1.28		MUDSTONE: Black, silty, with a 0.28 m laminated and graded siltstone bed, calcareous, mudstone, non-calcareous. Broken core.
	328.60	0.15		MUDSTONE: Black, carbonaceous fragments and rounded pieces, appears core loss. Basal 3 cm with band of bright coal.
				COAL SEAM
	328.65	0.05		COAL: Bright with hairline calcite streaks, broken pieces.
	328.69	0.04		MUDSTONE: Dark grey to black, very carbonaceous, ferruginous, large pieces.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	328.99	0.30		MUDSTONE/BONE/COAL: 1.5 cm thick bands of hard crusty coal/bone alternated with dull coal with bright streaks.
				Broken core.
	329.19	0.20		MUDSTONE: Black, large pieces with listric surfaces, fine coal intercalations, carbonaceous mudstone (but one 2.5 cm dull band at top).
	329.31	0.12		MUDSTONE: As above, but badly broken and appears to incorporate greater amount of coal than above.
	329.74	0.43		MUDSTONE: Dark grey, appears somewhat sheared and core yielding along 'listric' surface. Broken core.
	329.89	0.15		MUDSTONE: Black, hard, locally approaching bone coal, locally thin laminae of bright coal.
	329.96	0.07		COAL: Bright banded, large pieces.
	330.19	0.23		MUDSTONE: Black, carbonaceous, large pieces with listric surfaces.

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SHEET No. 73

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	330.22	0.03		COAL: Dull banded to dull and bright., pieces.
	330.42	0.20		MUDSTONE: Black, very carbonaceous and some bright coal bands towards base, large pieces.
	330.47	0.05		COAL: Bright, cleated, few minor dull hard; fragmented.
	330.63	0.16		MUDSTONE: Richly carbonaceous, approaching bone, bands of dull banded coal. All badly fragmented.
	330.69	0.06		COAL: Dull banded, large pieces.
	330.86	0.17		MUDSTONE: Highly carbonaceous, locally bony coal and two bands of bright coal, each 1 cm thick. Broken stick.
	330.99	0.13		COAL: Hard, bony, thin discontinuous laminae of bright coal, one 1 cm thick bright band towards base. Broken stick.
	331.01	0.02		MUDSTONE: Black, very carbonaceous, streaks of bright coal.
	331.02	0.01		COAL: Bright banded, stick (attached to)

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SHEET No. 74

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	331.09	0.07		MUDSTONE: Black, very carbonaceous, streaks of bright coal, fragmented.
	331.36	(0.27)		CORE LOSS - COAL AND ROCK
	331.46	0.10		COAL: Dull and bright, some whitish encrustations, broken core and large pieces, listricated.
	331.64	0.18		MUDSTONE: Black, very hard to dense, slightly canneloid, listricated large pieces.
	331.70	0.06		COAL: Dull lustrous, streaks of bright coal, broken stick (top end rounded, grounded).
	331.72	.0.02		MUDSTONE: Black, carbonaceous. piece
	331.78	0.06		COAL: Bright banded, large piece.
5 ⁰	334.00	2.22		SILTSTONE: Topmost 0.07 m carb. mudstone and this very gradually passes below to silts; medium/dark grey, locally very argillaceous, sporadic finely broken. Carbonized plant

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SHEET No. 75

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				debris, locally thin very fine-grained sandstone layers imperceptibly blending, laminated sparsely; calcareous. Basal 0.4 m silty mudstone. Broken stick.
	336.64	2.64		MUDSTONE: Black, abundant finely macerated and carbon- ized plant debris, homogenously silty, lacking lamination; top 0.53 m broken and locally listricated, rest stick.
	337.56	(0.92)		CORE LOSS - ROCK
	338.00	0.44		MUDSTONE: Black, as above; broken stick.
	340.64	2.64		SILTSTONE/SANDSTONE: Topmost 0.64 siltstone sequences apparently root disturbed and lacking lamination. Remainder dominantly very fine-grained argillaceous sandstone with ripples and sporadic cross-lamination and increasing burrows; siltstones within this zone. Dark grey and highly argillace- ous; non-calcareous, 0.3 m zone with sparse calcite fractures and calcite-lined: broken stick.
	342.28	1.64		SANDSTONE: Top 0.3 m very fine grained and with silty inter-

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SHEET No. 76

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				calations and fragmented into large pieces, remainder fine-grained medium grey and characterized by abundance of coal spars imparting a banded look to ubiquitous cross-lamination; locally tiny muddy clasts, core listricated along mud seams. Calcareous throughout, broken stick.
	343.44	1.16		SILTSTONE: Dark grey, very clean and homogenous, and very occasionally samblance of lamination, strongly calcareous throughout, stick.
	344.45	1.01		SILTSTONE: Continuation of this above, stick.
	345.13	0.68		MUDSTONE: Top 0.30 m argillaceous siltstone and laminated, rest silty dark grey mudstones, calcareous, broken stick.
	346.44	1.31		SANDSTONE: Light/medium grey, fine-grained, chertz, cross-bedded, frequent coal spars. Top 0.17 m argillaceous, dark grey siltstone, strongly calcareous, broken core.
	346.55	0.11		SANDSTONE: As above, contact (lower) grounded.

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SHEET No. 77

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	346.68	(0.13)		CORE LOSS - ROCK
	347.00	0.32		MUDSTONE: Dark grey/ black, carbonaceous, ferruginous, thin sandy band, partly calcareous, broken core.
	349.55	2.55		SANDSTONE/SILTSTONE: Medium grey, sandstone very fine-grained, argillaceous, frequently passing to siltstones. Middle 0.68 m silty mudstone and carbonaceous. The white interval has disturbed laminae (symdepositional) and much bioturbation evident, some tiny muddy imbedded few large vertical burrows; closely spaced small-rippled cross-lamination, strongly calcareous throughout, broken stick.
5°	352.70	3.15		SANDSTONE: As above, strongly calcareous, broken stick. Abundant burrows.
	352.80	0.10		CORE LOSS - ROCK
	353.19	0.39		SILTSTONE: Dark grey, highly argillaceous, vaguely laminated, strongly calcareous; broken stick.

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 78

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	353.72	0.53		MUDSTONE: Black, carbonaceous, 0.21 m sheared and corner flabby, fragmented core.
	354.01	(0.29)		CORE LOSS - ROCK
	354.29	0.28		MUDSTONE: COAL/ Top 0.08 m dull banded and dull and bright, remainder bony coal and crusty mudstone.
	355.05	0.76		MUDSTONE: Top 0.38 m black, carbonaceous, ferruginous, rest with several each 2 cm thick dull coal bands. Core broken.
	355.80	0.75		SANDSTONE/SILTSTONE: Medium grey, very fine-grained sandstones, laminated, argillaceous (about equal), strongly calcareous throughout, broken core.
	357.04	1.24		MUDSTONE: Black, dense, conchoidal fracture, broken core, gradational.
	357.80	0.76		SILTSTONE: Medium grey, argillaceous, broadly laminated, strongly calcareous, broken stick.

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COAL DIVISION

BOREHOLE No. BP-2-80

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DATE July 1980

SHEET No. 79

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	358.44	0.64		MUDSTONE: Top half richly silty and strongly calcareous, rest dark grey, ferruginous, broken stick.
	358.80	0.36		MUDSTONE: Black, very carbonaceous, numerous but thin bands of bony coal, fragmented.
	358.90	0.10		COAL: Dominantly dull lustrous with 2 cm bright band, fragmented.
	359.00	(0.10)		CORE LOSS - COAL
	359.43	0.43		MUDSTONE: Top half richly carbonaceous and fragmented, rest highly ferruginous and partly calcareous.
8°	360.85	1.42		SANDSTONE/SILTSTONE: Medium/dark grey, broadly intercalated, about equal; 0.24 m dark grey mudstone bed, sand/silts laminated and somewhat graded, much of sequence showing slumping of laminae; strongly calcareous; broken stick.
7°	361.74	0.89		SILTSTONE: Dark grey, vaguely banded, richly argillaceous, some very fine grained sands, <u>strongly</u> calcareous, broken stick.

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 80

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	362.04	(0.30)		CORE LOSS - ROCK
	363.55	1.51		MUDSTONE: Dark grey, richly silty (brief differentiated zones), lenses of very fine sands, strongly calcareous, broken stick.
	365.00	1.45		MUDSTONE: Dark grey/black, 0.18 m argillaceous siltstone, 0.14 m very fine-grained sandstones, laminated and cross-laminated and strongly calcareous, broken stick.
	365.06	(0.06)		CORE LOSS - ROCK
	365.75	0.69		MUDSTONE: Black, richly carbonaceous and locally approaching bony crusty coal, fragmented.
	365.85	0.10		SILTSTONE: Argillaceous, non-calcareous, broken stick.
	366.09	(0.24)		CORE LOSS - ROCK
	366.90	0.81		SANDSTONE: Medium grey, very fine grained and highly argillaceous, laminated, cross-laminated, brief interbeds

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 81

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				of siltstone, basal 0.15 m argillaceous siltstone, abrupt below, broken core.
				COAL SEAM
		0.22		COAL: Predominantly dull lustrous, two bright bands, each 1.5 cm thick. Broken core.
		0.18		BONE COAL/MUDSTONE: Hard, crusty, pieces. richly carbonace- ous mudstone band.
		0.06		COAL: Dull banded, large single pieces.
	367.44	0.08		MUDSTONE: Dark grey/black, carbonaceous, fragmented
	367.69	0.25		MUDSTONE: Black, ferruginous, hard, silty towards base.
5°	368.11	0.42		SANDSTONE/SILTSTONE: Medium grey, sand very fine grained, argillaceous, interlaminated, sporadic burrows, slump structures, strongly calcareous, broken stick.
	368.45	0.34		As above, strongly calcareous, basal contact fragmented.

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COAL DIVISION

BOREHOLE No. BP-2-80

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SHEET No. 82

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	369.35	0.90		MUDSTONE: Black, carbonaceous, bony coal in top 0.10 m. Fragmented zone, rest broken stick. Core Loss - 0.17 m.
	370.06	0.71		SILTSTONE: Medium grey, rooty occasionally, 0.10 m thick very fine-grained sandy zone towards base, calcareous through- out, broken stick.
	370.76	0.70		MUDSTONE: Dark grey, silty (homogenously), slightly cal- careous, broken stick.
	370.86	0.10		MUDSTONE: Black, abundant hairline calcite but no obvious significant fracture, large piece.
	370.98	0.12		BONE COAL/MUDSTONE:
	371.15	(0.17)		CORE LOSS - COAL AND ROCK
	372.34	1.19		MUDSTONE: Black, 0.06 m coaly band, 0.15 m black richly carbonaceous mudstone with dull coal layers towards base. Core broken.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	372.64	0.30		SILTSTONE: Medium grey, silty, non-calcareous, muddy, broken stick.
	373.81	1.17		SILTSTONE: Medium grey, distinct lack of lamination, non- calcareous, broken stick.
	375.68	1.87		SANDSTONE: Medium grey, very fine-grained, vague relicts of lamination, otherwise seems obliterated due to root disturbance., silty/muddy 'lumps' intimately associated with sandy fractures suggesting secondary modification. Non-calcareous throughout, stick.
	376.15	(0.47)		CORE LOSS - ROCK
	377.69	1.54		SANDSTONE: As above, much more intermixing. The lower half appears to have erosional features and large muddy clasts of dense grey mudstone, blending with the general coloration of rock, Occasional surviving lamination, non-calcareous, stick. The sequence is exceedingly argillaceous and darker.
	378.48	0.79		SANDSTONE: Black, richly argillaceous and abundantly

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SHEET No. 84

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				carbonaceous(carbonized plant matter), sandstone fine grained and mudstone intermixed throughout. Broken core.
6°	378.88	0.40		SILTSTONE: Medium grey, laminated, very argillaceous, disturbed laminae, calcareous, gradational below. Stick. Abundant plant hash.
	379.16	0.28		SANDSTONE: Dark grey/black, richly argillaceous (finely macerated carbonaceous matter in matrix), coal spars, Sand fine-grained.
7°	379.80	0.64		SILTSTONE/SANDSTONE: Top half dark grey, highly argillaceous siltstone, rest very fine grained argillaceous sandstone, interlaminated on a scale of millimetres, ripples and tiny cross-laminae, locally graded and giving banded appearance, calcareous; stick.
	380.42	0.62		SANDSTONE: Medium grey, very fine-grained, argillaceous layers in upper 1/3, remainder highly root disturbed with chaotic fabrics, carbonized and finely fragmented plant matter, calcareous, erosional below. Stick.

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SHEET No. 85

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	380.98	0.56		SILTSTONE: Dark grey, silty (homogeneously), few burrows in basal 0.1 m; strongly calcareous throughout. erosional below. Stick.
	381.39	0.41		SANDSTONE: Light grey, very fine-grained, tiny ripples and cross-laminated, finely macerated plant matter delineating tops of cross-sets, 0.07 m silty band; strongly calcareous throughout, erosional, stick.
	382.14	0.75		SILTSTONE: Dark grey, richly argillaceous, vaguely discernible, discontinuous lamination, strongly calcareous, broken core.
	382.76	0.62		SILTSTONE: As above, increasingly more argillaceous, strongly calcareous.
	383.47	0.71		MUDSTONE: Dark grey to black, very silty, mostly lacking lamination, locally ferruginous, basal 0.42 m very carbonaceous, with lens of sandstone; non-calcareous throughout; broken stick.
	384.92	(1.45)		CORE LOSS - ROCK

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SHEET No. 86

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	386.57	1.65		MUDSTONE: As above, some listricated core at top; locally silty and carbonaceous, broken core.
	387.05	0.48		MUDSTONE: Black, very carbonaceous, silty lower end, stick, gradational; end Box 129
	387.90	0.85		SILTSTONE: Medium grey, locally highly argillaceous and 8 cm muddy band, laminated and cross-laminated, rooty, lower half calcareous; broken stick.
	390.58	2.68		SANDSTONE: Light/dark grey, generally fine-grained and argillaceous, broadly laminated and cross-laminated, micro-erosional features; locally passes to siltstones, strongly calcareous throughout; odd burrows, broken stick.
	391.09	0.51		SILTSTONE: Medium grey, highly argillaceous, local wisps of lamination, strongly calcareous; broken stick.
	391.60	0.51		MUDSTONE/SILTSTONE: Dark grey, vague occasional lamination, coal spar, calcareous; broken stick.

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SHEET No. 87

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	391.81	0.21		MUDSTONE: Black, very carbonaceous and developing locally to hard crusty bone coal. Fragmented core.
	392.45	0.64		MUDSTONE: Dark grey, carbonaceous bed, silty, broken core.
	394.15	1.70		SILTSTONE/MUDSTONE: Dark grey/black, imperceptibly alternating, occasional vague lamination and locally slightly carbonaceous, broken stick.
	395.09	0.94		SANDSTONE: Medium grey, very fine-grained, one 0.11 m argillaceous siltstone, sands mostly homogenous and vague relicts of lamination, non-calcareous, erosional below. Broken stick.
	395.35	0.26		SILTSTONE; Medium grey, highly argillaceous, sparse lamination, calcareous.
	395.75	0.40		SILTSTONE: As above, very gradational below, broken stick.
4 ⁰	396.66	0.91		SANDSTONE: Light/medium grey, fine to very fine-grained, cross-laminated throughout, some wavy and ripple lamination;

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SHEET No. 88

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				vague suggestion of local burrowing, finely macerated carbonized plant matter, emphasizing strongly, laminae calcareous, erosional at base. Core fractured at two points, clay bedding; broken stick.
5°	397.32	0.66		SANDSTONE: Medium grey, very fine-grained, laminated and cross-laminated sparsely, argillaceous to silty, strongly calcareous; broken stick.
	398.32	1.00		MUDSTONE: Dark grey, very silty, vaguely laminated, strongly calcareous, broken stick.
	400.18	(1.86)		CORE LOSS - ROCK
	400.58	0.40		SILTSTONE: Medium grey, argillaceous (also discrete laminae and layers), appears broadly banded, strongly calcareous, stick.
	400.68	0.10		MUDSTONE: Black, carbonaceous and approaching coal. One 1 cm bright coal band.

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SHEET No. 89

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	401.75	1.07		SANDSTONE/SILTSTONE: Medium grey, upper 1/3 very fine-grained argillaceous sandstone with chaotic fabric; rest richly argillaceous silts, lacking lamination, non-calcareous throughout; broken stick.
	402.03	0.28		SANDSTONE: Light/medium grey, fine-grained, vaguely cross-laminated, very argillaceous in basal 6 cm. Broken stick.
	403.20	1.17		SILTSTONE/MUDSTONE: Medium/dark grey, dominantly silty, one burrow, non-calcareous, stick. Bottomward thin bands of very fine-grained sandstone lamination, non-calcareous. Broken stick.
	404.78	1.58		SANDSTONE: Medium/dark grey, upper 2/3 dominantly fine-grained (abundantly burrowed) with two separate siltstone bands totalling 0.5 m. Remainder very fine grained sandstones. Whole sequence laminated and cross-laminated, locally concentration of finely divided carbonized plant debris and graded units (sand to silts); strongly calcareous, stick. Erosional at base.

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SHEET No. 90

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	405.13	0.35		SILTSTONE: Medium grey, finely laminated, calcareous strongly, stick.
	406.82	1.09		SILTSTONE: Medium grey (locally dark grey), locally argillaceous, ubiquitous roots, devoid of lamination, non-calcareous, stick.
	408.09	1.27		SANDSTONE: Medium grey, very fine-grained, cross-laminated throughout, much burrowing, top 0.23 dark grey and richly argillaceous, calcareous throughout, broken stick.
	409.72	1.63		SANDSTONE: Medium grey, light grey, fine to very fine-grained, broadly laminated, cross-laminated, mostly clean look, two thin silty bands, strongly calcareous; a minor fracture (along bedding and mineralized), broken stick. Erosional at base.
	411.01	1.29		SANDSTONE: Light grey, medium-grained (0.1 m very fine-grained), clean, well-rounded, extremely sparse and local intraclasts of black micaceous mudstone; slight dominance of chert grains and quartz, hard, non-calcareous, vaguely

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SHEET No. 91

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				discernible cross-bedding. Stick broken.
	414.05	3.04		SANDSTONE: As above, basal 2.24 m readily manifest cross-bedding and very clean, only ½ cm thick carbonaceous/muddy seam 0.24 m from base; broken stick.
	415.51	1.46		SANDSTONE: As above, very slightly calcareous, 0.27 m fine to medium-grained with low-angle cross-lamination; broken stick.
5°	417.05	1.54		SANDSTONE: Medium grey, fine/medium grained, laminated throughout, locally carbonized plant debris emphasize laminae; top half light grey and strongly calcareous, rest very weakly so; generally well sorted; broken stick.
	419.17	2.12		SANDSTONE: Medium grey, fine/medium grained, very calcareous, generally devoid of lamination, well sorted, dominantly cherty, very weakly calcareous, stick.
	420.08	0.91		SANDSTONE: As above, 0.21 m rusty silty/muddy layers 'floating' within sandstone with highly irregular top and bottom (associated with intraclasts), some ripple-drifting, weakly

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SHEET No. 93

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
6 ⁰	428.30	1.53		SANDSTONE: Medium grey, top half very fine-grained, remainder fine-grained, whole sequence rippled and cross-laminated. Basal 0.45 m with sparse carbonized plant fragments, strongly calcareous throughout; gradational, broken stick. One mineralized fracture towards base.
	428.48	0.18		SILTSTONE: Medium grey, argillaceous, vaguely laminated, strongly calcareous, gradational. Stick
	428.97	0.49		MUDSTONE: Medium grey, silty, top 0.12 m calcareous, broken stick.
	429.50	0.53		SANDSTONE: Medium grey, very fine-grained, vaguely laminated, weakly calcareous, silty layers, broken stick.
	429.75	0.25		SANDSTONE: As above, broken stick.
	430.40	0.65		MUDSTONE: Mostly black with locally stringers of coal and mostly carbonaceous fragmented core.
	430.81	0.41		MUDSTONE: Dark grey, silty, fragmented core.

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SHEET No. 94

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	431.13	0.32		SILTSTONE: Medium to dark grey, argillaceous, broken stick
	431.59	0.46		MUDSTONE: Dark grey, 3 cm very fine-grained sand layer, silty mudstone, gradational.
	432.02	0.43		SANDSTONE: Medium grey, very fine-grained, rippled and cross-laminated, very thin silty laminae, calcareous, gradational.
	432.24	0.22		MUDSTONE: Black, basal 5 cm coal. Fragmented.
	435.19	2.95		SANDSTONE: Light/medium grey, fine-grained, cross- laminated (mostly) 0.48 m interval with chaotic/slumped fabric. Also 0.19 m showing slumping, some very fine- grained sandy intervals; ubiquitous, finely-divided carbona- ceous matter emphasizing laminae, and locally these are very closely spaced, one 0.08 m siltstone clast 'floating'. Occasional suggestion of burrows, and occasional tiny intra- clasts, strongly calcareous throughout, core stick.
5° to 8°	438.23	3.04		SANDSTONE: Medium grey, top 0.56 m clean and free from coaly/spar admixture; fine-grained; rest of sequence is

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COAL DIVISION

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				characterized by the rare abundance of coal spars (locally concentrated additionally), ubiquitous brownish silty inter-
				vals (always tiny), grain size frequently varying between
				very fine to fine zones and the basal 0.64 m has medium
				grained phases. Although the whole sequence appears
				dirty (the layers to concentration of 'coaly laminae').
				There is no argillaceous content. Strongly calcareous
				throughout, broken stick.
	439.47	1.24		SANDSTONE: As above, generally fine/medium-grained with
				phases of very coarse-grained sandstones and large intraclasts.
	441.29	1.82		SANDSTONE: Light grey, top 0.18 m medium grey and with
				rippled top layers of banded, laminated, graded siltstones/
				very fine grained sandstone. Rest clean, well-sorted,
				fine/medium grained, cross-bedded, occasional tiny coal
				spars; strongly calcareous; very brief (under 1 cm) medium
				grained phases. Broken stick.
	443.77	2.48		SANDSTONE: Light grey, dominantly fine/medium grained, but
				several significant very coarse-grained to finely-gritty

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SHEET No. 96

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				phases, cross-bedded throughout, sparse spars and intra-clasts, strongly calcareous; broken stick.
	444.16	(0.39)		CORE LOSS - ROCK
	444.77	0.61		SANDSTONE: Fine-medium-grained, light grey, clean, well-sorted, totally lacking spars, 0.05 m clast zone at top. Cross-laminated, strongly calcareous, stick.
5 ⁰	447.64	2.87		SANDSTONE: Light grey, medium-grained, very clean and well-sorted throughout, ubiquitous cross-bedding, slight dominance of quartzes over cherts, strongly calcareous, broken stick.
	450.63	2.99		SANDSTONE: Cross-bedding very evident. Medium/coarse grained as above, then the above and only weakly calcareous; broken stick.
	453.43	2.80		SANDSTONE/CONGLOMERATE: 60% medium to coarse grained sandstone; clean, cherty/quartzose, rest final conglomerates and gritty, one pebble over 6 cm across; the conglomerate/grits

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SHEET No. 97

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				broadly interlayered. Calcareous throughout, no coal spars (except one evident), broken stick.
	454.43	1.00		SANDSTONE/CONGLOMERATE: Though predominantly very coarse sandstone.
6°	456.61	2.18		As above, one 0.38 solid stretch of good cherty/quartzite conglomerate (85% pebbles). Also other smaller conglomeratic zones. 0.24 m fine-grained, clean sandstone; strongly calcareous; broken stick.
	457.60	0.99		SANDSTONE: Light grey, dominantly medium/coarse-grained sandstone. 0.12 m conglomerate towards base, calcareous stick. Abrupt basal contact.
	458.23	0.63		MUDSTONE: Buffish top 2/3 and very strongly calcareous (about mostly), remainder dark grey with 3 cm silty band towards base; gradational. Broken stick.
	459.49	1.26		MUDSTONE: Dark grey, slightly ferruginous, lacking lamination, stick.

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SHEET No. 98

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	459.80	(0.31)		CORE LOSS - ROCK
	462.00	2.20		MUDSTONE: Dark grey, locally homogenously silty, and locally carbonaceous, lacking lamination; stick
	462.78	0.78		SILTSTONE: light grey, locally very argillaceous, very rooty, lacking lamination, non-calcareous; broken stick.
	462.95	(0.17)		CORE LOSS - ROCK
	464.40	1.45		MUDSTONE/SILTSTONE: Medium to dark grey, interlayered; dominantly muddy.
	465.40	1.00		SANDSTONE: Medium grey, very fine-grained, broadly but vaguely laminated, argillaceous, calcareous, gradational; broken stick.
	465.80	0.40		MUDSTONE: Dark grey, very silty, structureless, weakly calcareous.
	466.07	(0.27)		CORE LOSS - ROCK

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SHEET No. 99

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	466.40	0.33		MUDSTONE: As above, stick; very gradational below.
	466.86	0.46		SANDSTONE: Medium grey, very ferruginous, highly argillaceous, vaguely laminated, strongly calcareous, very Gradational; broken stick.
	468.03	1.17		SANDSTONE: Light/medium grey; fine-grained, mostly rippled and middle 0.20 m with suggestion of burrowing; basal 0.50 m with abundant muddy intraclasts and with variable grain sizes of very fine-grained to fine-grained sandstone; strongly calcareous, abrupt below. Broken stick.
	468.34	0.31		CONGLOMERATE:
	471.39	3.05		CONGLOMERATE: As above, generally 85% pebbles of cherts and quartzes (darker pebbles predominate), 3 cm <u>NOT</u> uncommon, though the most frequent ones range from 1 to 1.5 cm 15% sandy/gritty matrix; calcareous throughout.
	472.50	1.11		CONGLOMERATE: As above, 0.14 fine-grained laminated sandstone and strongly calcareous; erosional at base.

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SHEET No. 100

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	473.33	0.83		MUDSTONE: Dark grey but predominantly buffish silty, very strongly calcareous; vaguely banded, gradational, very strongly calcareous.
	474.05	0.72		MUDSTONE: Black to dark grey, locally silty, non-calcareous.
	474.55	0.50		MUDSTONE: Black, appears very carbonaceous and locally developing into hard bony coal. Badly fragmented, basal part pulverized mudstone. Core Loss in this unit - 0.15 m.
	477.11	2.56		SILTSTONE/MUDSTONE: Dominance of siltsones, very argillaceous, silty and abundantly rooty, no lamination, core on breaking shows listrication on small-scale. non-calcareous throughout; broken stick.
	477.34	(0.23)		CORE LOSS - ROCK
	477.60	0.26		MUDSTONE: Medium grey, structureless, rooty, non-calcareous, transitional below.
	478.00	0.40		SANDSTONE: Medium grey, fine grained, finely broken plant debris (non-carbonized), entirely lacking lamination, non-calcareous, gradational below.

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LOGGED BY Ali Chowdry

DATE July 1980

SHEET No. 101

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	479.93	1.93		MUDSTONE: Medium grey, homogenously silty but singular lack of lamination, non-calcareous; broken stick.
	480.46	0.53		SILTSTONE: Medium grey, richly argillaceous, locally approaching very fine-grained sand; stick.
	480.84	0.38		SANDSTONE: Light/medium grey, fine-grained and vaguely laminated, non-calcareous and very weakly calcareous; broken stick.
	481.35	0.51		SANDSTONE: As above, thin argillaceous layers, non-cal- careous; broken stick.
				Driller's depth: 484.22

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BOREHOLE No. BP 80-3

LOGGED BY R.J. Melin

DATE July 17, 1980

SHEET No. 1

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	3.44	.09 m		
		0.		Conglomerate - (boulder - not in place) dark grey, cherty, gritty appearance, generally fine pebbles with some up to 1.2 m in diameter, non-calcareous.
	4.44	1.0		Mudstone - dark grey, micaceous throughout, calcareous, contains pelecypods, identified as entolium, scattered sparingly throughout, conchoidal, fracturing. Thin laminae of siltstone, medium grey to iron-stained, silty beds 2 to 4 m. Some traces of iron-stained plant debris and rootlets.
	4.78	0.34		Siltstone - medium to dark grey, grading to very fine-grained Sandstone. Slightly calcareous, small calcite vein in listricated surface near the base, fine to ill-defined bedding, some dark grey, muddy laminae. Dip 3 - 5°

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SHEET No. 2

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	9.80	2.4 (2.62)		Mudstone, dark grey, minor silty portions, bedding indistinct 15 m ferruginous band 60 m from top, small well-spaced ferruginous bands down section. Abundant very fine worm burrows, pelecypods evident - entoleum and others. Some micaceous portions. Core badly broken. Core loss - 2.62 m
	12.10	2.3		Mudstone, dark grey, only traces of siltstone, lower density than previous section, abundant listricated surfaces increasing down section, pebble - 2 m in diameter 1.35 m from top, some very fine worm burrows, iron staining on plant debris and on the listricated surfaces, abundant carbonaceous plant debris in midsection.
	13.28	.73 (.45)		Mudstone, dark grey, bright, coaly, carbonaceous debris scattered throughout, minor small listricated surfaces, some sections grading to silty, non-calcareous, core badly broken. Core loss - .45 m

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SHEET No. 3

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	14.63	1.35		Siltstone, dark grey, grading to muddy down section with the last 45 m being mudstone, slightly silty, non-calcareous conchoidal fracturing, 4 m crumbly mudstone in mid-section, predominantly broken stick core.
	15.36	0.73		Mudstone, dark grey, slightly micaceous, slightly silty, calcareous, clean appearance, badly broken to broken stick.
	15.93	0.57		Siltstone, dark grey, minor rootlet impressions to carbonaceous debris, calcareous, no bedding evident. Broken stick.
	16.30	0.37		Siltstone, grading to argillaceous Sandstone, medium to dark grey, calcareous, slightly micaceous, broken stick, faint bedding developing down section, grading to very fine-grained Sandstone.

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SHEET No. 4

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	17.51	1.21		Sandstone, medium grey, darker grey banded, very fine-grained, argillaceous, very calcareous, faint to well-defined bedding down section, ripple drifted, with some sections low angle bedding, broken stick to stick.
	18.96	1.45		Sandstone, medium-grey, darker grey near top, very resistant, very calcareous, top 0.55 m ripple-drifted to very small scale cross-bedded, fine to very fine-grained, argillaceous in part, 90 m (lower unit) fine to medium-grained, some very fine-grained, generally large scale low angle cross-bedded, minor ripple bedding in finer sequence, stick, 11° dip.
	19.89	0.93		Sandstone, medium grey to darker grey (in part), fine-grained to very fine-grained in sections, very calcareous, top 32 m well defined, ripple-drifted, lower 61 m, low angle laminations, broken stick.
	20.41	0.52		Sandstone, medium grey, minor darker grey section, medium-grained, some finer-grained, large scale low angle cross-bedding top 16 m finer-grained, stick to broken stick core. 4° dip.

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SHEET No. 5

COM BCA*	DEPTH. m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	20.76	.35		Sandstone, medium to dark grey, fine-grained, fine parallel laminations, calcareous stick.
	21.09	0.33		Sandstone, medium and dark grey bed, medium-grained with finer and coarser grains, poorly sorted, abundant coaly debris, large plant debris and carbonaceous plant impression, calcareous, listricated surfaces. 8 m finer sequence as above, core badly ground and broken bedding poorly defined. Dip 5°
	21.29	0.20		Sandstone, medium grey, medium-grained, minor coarser grains, high velocity environment, large carbonaceous plant impressions, calcareous, broken core.
	21.91	.62		Sandstone, medium grey, medium-grained, massive bedding, calcareous, abundant thin carbonaceous plant impressions, stick core.

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SHEET No. 6

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	22.49	.58		Sandstone, medium grey, dark grey clasts, medium-grained, some minor, finer to coarser grains, muddy bands middle and near base, silty and slightly micaceous, high energy environment, some cross-bedding, (large scale), the muddy clasts and blebs grade to carbonaceous broken stick.
	22.60	.11		Siltstone, muddy in part, dark grey, calcareous bedding, ill-defined, 16° Dip on contact with sandstone, Stick core.
	23.94	1.34		Sandstone, medium-grey, minor dark grey portions, medium-grained becomes coarser, ill-sorted down section, top 34 m, cleaner appearance with well-defined medium and large scale cross-bedding, down section abundant muddy to carbonaceous mudstone clasts and blebs, core badly broken down, section large carbonaceous plant impressions, calcareous, Dip varies from 5° to 27° on cross beds.

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SHEET No. 7

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	25.14	1.20		Sandstone, similar to above, medium to coarse-grained, medium grey, small dark grey clasts, carbonized plant debris badly fractured with mineral replacement in fractures (gypsum replacement?), slightly calcareous to calcareous in parts, large scale cross-bedding, becoming slightly cleaner down section, broken core.
	25.82	.68		Sandstone, medium-dark grey, coarse-grained, minor medium-grained, grades to a very fine conglomerate gritstone, carbonaceous debris and large plant impressions, siliceous, minor calcareous portion at the top. Core badly broken and worn.
	27.24	1.42		Sandstone, gritstone, medium grey, generally very coarse sandstone to fine, gritty conglomerate, minor muddy clasts dispersed throughout with fine, carbonaceous debris, large scale cross-bedding present, siliceous, last 25 cm medium-grained to coarse-grained beds, core broken stick to badly broken at the top. Dip 16°.

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SHEET No. 8

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	27.51	.27		Sandstone, medium grey, medium-coarse grain, calcareous, large scale cross-bedding, abundant muddy-silty clasts, - dark grey.
	27.85	.34		Sandstone, medium to dark grey interbedded, fine grain with interbedded, very fine, argillaceous and minor medium-grained beds, bedding uneven, - rippled, minor fine, irregular carbonaceous laminae, 8° Dip, Broken core-broken stick.
	28.16	.31		Mudstone, dark grey, silty, with minor siltstone bedding near top, slightly micaceous, trace rooty debris, conchoidal fracturing, stick core.
	28.48	.15 .17		Sandstone/Siltstone, dark grey, minor medium grey, siltstone, muddy in part, with uneven rippled sandstone beds, minor carbonaceous debris, calcareous, broken stick core.
	30.29	1.43 .38		Mudstone, dark grey, abundant siltstone in top 40 m, strongly calcareous, carbonaceous rootlets and plant impressions throughout, stick core.

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SHEET No. 9

COM BCA*	DEPTH. m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	30.96	.67		Siltstone, dark grey, muddy top 12 m, fractured, iron-stained, carbonaceous plant and root impressions, no bedding, strongly calcareous, broken stick core.
	32.48	.48 1.04		Mudstone, dark grey, slightly silty, iron-stain on fracture, conchoidal fracturing, minor carbonaceous debris, calcareous core badly broken, tip 30 m, broken stick core.
	32.98	.50		Siltstone/Argillaceous Sandstone, dark grey with medium-grey interbedding, dark grey siltstone, mudstone interbedded with fine-grained argillaceous sandstone, top 11 m, very sandy, bedding fine, uneven, rippled, very fine carbonaceous laminae and plant impressions, calcareous.
	33.56	.58		Mudstone, dark grey, slightly silty, conchoidal fracturing, minor carbonaceous debris, broken stick core.
	33.65	.09		Sandstone, medium grey, fine to very fine-grain, ripple bedded, minor carbonaceous laminae, calcareous, stick core, 3° Dip.

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SHEET No. 10

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	34.66	.89		Mudstone, dark grey, conchoidal fracturing, clean with minor carbonaceous debris, slightly calcareous, broken stick.
		.12		
	35.07	.35		Mudstone, dark grey-black, carbonaceous, abundant thin (less than 3 mm) bright coal bands, grades to poor dirty coal near base, badly broken core.
		(.06)		
	35.77	.70		Mudstone, dark grey, slightly calcareous to strongly calcareous at top, slightly silty, large carbonaceous plant impressions and rootlets, broken stick core.
	36.82	.29		Mudstone, dark grey, non-calcareous, dark streak, minor iron stain on fracture, clean appearance, silty sand 8 cm (35 cm from base), silty with thin, argillaceous, very fine sandstone beds, abundant carbonaceous debris with siltstone, broken stick, top half very badly broken core.
		.64		
		(.12)		
	36.85	.03		Sandstone, light grey, very fine grained to fine-grained, bentonitic.

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SHEET No. 11

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	38.84	.35		Mudstone, dark grey, dark streak, minor silty, minor
		1.64		micaceous, non-calcareous, listricated surface and base,
				broken stick core, minor carbonaceous debris and plant
				impressions.
	38.37	.10		Mudstone, dark grey, slightly silty, dark streak, slightly
				micaceous, minor plant impressions of debris throughout,
				top 10 cm not as carbonaceous as lower section, conchoidal
				fracturing.
	40.24	.70		Mudstone Stick- broken stick core
	40.65	0.41		Mudstone, dark grey, minor stick on sides, very dense,
				slightly to very calcareous, abundant well-defined
				pyrite crystalization near base, lower 14 m very badly
				broken.
	41.48	0.83		Mudstone, dark grey, silty to very silty in part, slightly
				micaceous, non-calcareous, minor carbonaceous through out,
				abundant in top 8 m, stick to broken stick to badly
				broken at top, abundant carbonaceous debris basal 4 m.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	41.64	0.16		Mudstone, dark grey to black, very carbonaceous, abundant very fine coal laminae with bright coal bands up to 5 mm, stick core.	=====
				Coal Description	=====
	41.70	0.06		Top 6 cm, stick core, coal, black, generally dull to medium bright.	SN80 3/1/1
	41.88	0.18		Next 18 cm, broken stick and badly broken at top, dull to medium bright, minor bright bands near base.	
	42.20	0.32		Next .32 cm, coal, stick, dull - medium bright, bright banded.	=====
	42.32	0.12		Core Loss - Coal.	
	42.45	0.13		Coal, 13 cm, dull - some dull to medium bright, thin bright bands near base, core worn and broken.	SN80 3/1/2
					=====
	42.52	0.07		Mudstone, dark grey, non-calcareous, abundant carbonaceous debris and plant impressions, worn and broken core.	SN80 3/1/3

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SHEET No. 13

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	42.82	(0.30)		Core Loss - Rock.	
	42.98	0.16		Mudstone, dark grey, abundant carbonaceous laminae throughout, carbonaceous plant debris.	
	43.04	0.06		Mudstone, carbonaceous, abundant carbonaceous laminae with bright coal bands 1 cm thick.	
	43.16	0.12		Mudstone, dark grey, carbonaceous, abundant thin coaly laminae and carbonaceous plant fragments.	SN80 3/1/3 =====
	43.27	0.11		Coal, dull at top, dull to medium bright down section.	
	43.42	0.15		Coal, dull to medium bright, minor bright bands.	SN80 3/1/4 =====
	43.59	0.17		Mudstone, dark grey to black, very carbonaceous, abundant thin coaly laminae throughout, bright coaly bands, - 3 mm, listricated surfaces, broken stick.	SN80 3/1/5 =====
	43.96	(0.37)		Core Loss - Rock.	

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SHEET No. 14

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	44.11	0.15		Sandstone, very fine-grained, medium grey, non-calcareous, thin mudstone to carbonaceous mudstone interbeds, very bentonitic, broken stick.
	44.26	0.15		Mudstone, dark grey to black, graining to very dirty coal, bright coaly bands throughout, broken core.
	44.61	0.35		Core Loss - Coal.
	45.51	(0.90)		Core Loss - Rock.
	45.95	(0.44)		Core Loss - Coal and Rock.
	46.56	0.61		Mudstone, dark grey, abundant carbonaceous debris in upper 40 cm, lower 21 cm - silt with carbonaceous debris and large plant impressions throughout, silt calcareous, mudstone non-calcareous, badly broken at top, stick at base.

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SHEET No. 15

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	47.53	0.97		Siltstone/Argillaceous Sandstone, - dark grey siltstone, medium grey interbeds of very fine argillaceous sandstone, fine to uneven to ripple-bedded, 40 cm from top is a 15 cm siltier horizon, calcareous. Dip 4°, broken stick.
	47.64	.11		Ferruginous Mudstone Band - calcite-filled hairline fractures, abundant iron staining, mudstone host rock.
	48.32	.55		Mudstone, dark grey, dark streak, abundant iron staining,
		.13		abundant carbonaceous debris and plant impressions near top, non-calcareous, slightly calcareous near small fractures, cleaner down section, broken stick, badly broken and worn at top. (13 cm core loss).
	48.56	.24		Siltstone, medium to dark grey, dense, some iron staining, non-calcareous, slightly muddy at top, stick.
	48.63	.07		Mudstone, dark grey, non-calcareous, carbonaceous laminae throughout, minor iron staining.

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SHEET No. 16

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	48.93	.30		Siltstone, medium to dark grey, slightly darker and muddier down section, non-calcareous with some deposits in fine fractures.
	51.28	1.23		Mudstone, grading silty upsection, carbonaceous laminae and large plant impressions scattered throughout, abundant iron staining along fractures, generally non-calcareous to calcareous in fractures, stick to broken stick.
		1.12		
	51.62	.34		Siltstone, grading to very fine beds of very fine-grained sandstone, strongly calcareous, iron stained. Dip: 9° minor carbonaceous debris throughout.
	55.43	.07		Mudstone, dark grey, minor slightly silty portion, minor carbonaceous debris dispersed throughout, strongly calcareous, slightly micaceous in part, top 2.58 m has an abundance of iron staining on high angle fractures with small ferruginous band 1.32 m from top, lower portion of section has very little iron staining and has conchoidal fracture, stick core, some broken stick.
		1.50		
		1.52		
		.72		

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SHEET No. 17

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	56.18	.75		Mudstone, dark grey to black, non-calcareous, abundant slickensides and listricated surfaces, tip 57 cm clean, lower 18 cm carbonaceous, with abundant carbonaceous debris and bright thin coaly bands less than 3 mm, listricated surfaces.	
	56.37	.19		Mudstone, dark grey to black, abundant thin coaly laminae, non-calcareous, stick. -- Detailed Coal Description --	
	56.49	.12		Mudstone, silty, calcareous, carbonaceous, with abundant very fine coal debris, stick.	
	56.63	.14		Mudstone, dark grey to black, slightly silty, carbonaceous, thin coaly laminae, less than 1 mm broken stick.	=====
					SN80 3/2/R
					=====
	56.68	.05		Coal, dull, very muddy, thin coaly laminations throughout, broken stick.	
					SN80 3/2/1
					=====
	56.88	.20		Coal, dull, minor, thin, bright bands, core very badly broken.	
					SN80 3/2/2

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SHEET No. 18

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	56.97	.09		Coal, dull, very muddy, minor, very fine, bright laminae, very badly broken and worn.	===== SN80 3/2/3
	57.00	.03		Coal, very dull, high ash, muddy, very badly broken and worn.	
	57.19	(0.19)		(Core Loss - Coal)	=====
	57.34	0.15		Mudstone, dark grey, slightly silty, listricated surfaces, minor carbonaceous rootlets and carbonaceous debris, broken stick, non-calcareous.	SN80 3/2/F
	57.82	.48		Mudstone, dark grey to black, listricated surfaces, minor thin, bright, coaly laminae, slightly silty and slightly calcareous in portions, stick core.	
	57.92	(0.10)		Core Loss - Rock	
	58.43	(0.51)		Core Loss - Coal and Rock	

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SHEET No. 19

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	58.60	0.17		Mudstone, dark grey to black, non-calcareous, abundant, very fine, coaly laminae throughout, grading to carbonaceous mudstone, core badly broken.
	59.05	0.45		Mudstone, slightly silty, calcareous, dark grey, minor carbonaceous debris and small rootlets, stick core.
	59.14	0.09		Carbonaceous Mudstone, grading to poor coal, dull, no vitreous material at all, core very badly broken.
	59.63	.49		Mudstone, dark grey to black, carbonaceous upper 10 cm, minor carbonaceous debris, stick to broken stick, top portion worn to badly broken.
	62.42	.64		Siltstone, dark grey, minor, very fine, medium grey, varies from silty mudstone to very fine, argillaceous sandstone, faint thin bedding, Dip: 3°, slightly micaceous strongly calcareous, traces of carbonaceous debris, grading to clean mudstone at base, bottom 70 cm very muddy, stick core.
		1.55		
		.60		

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SHEET No. 20

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	63.60	.91		Mudstone, dark grey to black, carbonaceous debris throughout, 36 cm section of carbonaceous mudstone, 44 cm from top, contains similar mudstone with abundant, very fine, coaly laminae, non-calcareous throughout, cleaner near base with some plant impressions and rootlets. Stick core.
		.27		
	64.48	.88		Mudstone, dark grey, silty to slightly silty, calcareous, abundant, thin, fine plant impression, slightly carbonaceous, becoming siltier down section, stick core.
	64.94	.26		Mudstone/Siltstone - calcareous, very silty at base with iron staining, fine plant impressions to bright, coaly blébs throughout, broken stick.
		.20		
	65.45	.51		Mudstone, dark grey to black, abundant large listricated surfaces, clean, non-calcareous, broken stick.
	65.51	.06		Mudstone, soft, medium to dark grey, listricated, soft minor carbonaceous debris, waxy texture, broken stick.

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SHEET No. 21

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	66.16	.50		Mudstone, dark grey to black, carbonaceous, within interbeds of poor coal, high ash, bright, coaly laminae, less than 4 mm, abundant, carbonaceous plant impression, debris, rootlets, broken stick.
		.15		
	66.20	.04		Coal, dull, high ash traces of bright laminae, broken core.
	66.49	.29		Mudstone, dark grey to black, minor, carbonaceous debris throughout, non-calcareous, stick.
	66.83	.34		Mudstone, silty, iron staining and very fine pyrite crystallisation, dark grey, becoming siltier down section.
	67.61	.40		Siltstone, dark grey, calcareous, minor, very fine, argillaceous beds, abundant iron staining on fractions.
		.38		
	68.22	.61		Siltstone/Argillaceous Sandstone - dark grey to medium grey, top 18 cm very silty, grading down section to fine argillaceous sandstones, uneven to ripple-bedded, calcareous, Dip: 3 - 15°. 5 cm band of medium-grained

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SHEET No. 22

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				sandstone 19 cm from base, muddy to carbonaceous clasts, large carbonaceous plant impressions throughout, some medium scale cross-beds, stick core.
	68.84	.62		Siltstone, dark grey, minor medium grey, gradational between muddy siltstone and argillaceous sandstone, faint ripple bedding at top and base, muddier in middle, large carbonaceous impressions and fine carbonaceous laminae throughout, carbonaceous, stick core.
	69.37	.53		Mudstone, dark grey to black, minor carbonaceous, fine laminae throughout, stick core, broken and worn at top.
	70.19	.82		Siltstone, medium to dark grey, relatively clean, minor carbonaceous plant debris, non-calcareous.
	71.86	1.35 (.32)		Mudstone, dark grey, non-calcareous, 13 cm band of carbonaceous mudstone 11 cm from top, fine, carbonaceous plant impressions and minor, bright, coaly laminae dispersed throughout, stick core badly broken at carbonaceous band. Core loss 32 cm.

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SHEET No. 23

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	72.02	.16		Siltstone, inter-bedded with argillaceous sandstone, medium and dark grey, uneven to ripple-bedded, Dip: 17° grading sandy down section.
	72.61	.59		Sandstone, medium grey, minor dark grey beds, argillaceous, silty sandstone at top becoming coarser down section to fine-grained sandstone, thin silty laminae, distinct ripple beds to uneven beds, stick core.
	74.04	1.03 .40		Sandstone, medium grey, grades from very fine-grained sandstone in the upper 5 cm to cherty gritstone down section, generally chert grain approximately 1 mm, minor larger pebbles, Dip: 12°, medium to large scale bedding, non-calcareous. Stick core, small band of carbonaceous debris mixed with sandstone, 5 cm thick, 19 cm from top.
	75.07	1.03		Sandstone, medium to coarse-grained, grading to gritstone very cherty, some fine, carbonaceous laminae dispersed throughout, small crosset to low angle bedding, non- calcareous stick core, 2 cm carbonaceous horizon broken 29 cm from top.

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SHEET No. 24

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	75.14	.04		Sandstone, poorly sorted, uneven bedding, abundant, carbonaceous laminae, muddy and carbonaceous clasts, non-calcareous, broken at top.
		.03		
	77.30	.57		Sandstone, medium to dark grey, generally medium-coarse grained with some fine sections and some gritstone with chert in parts, abundant mudstone/carbonaceous clasts and laminae, minor large plant impressions, generally non-calcareous, becoming calcareous near base, broken to badly broken core. Core loss .59 m
		.51		
		.22		
		.27		
		(.59)		
	78.96	1.33		Silty Mudstone/Sandstone, dark grey silty mudstone, with interbeds 2 to 10 cm sandy beds throughout, mudstone grades to siltstone in places, calcareous, slightly micaceous, traces of carbonaceous plant impression. Sandstone, - fine grained, minor argillaceous to coarser grains, medium grey, distinct ripple-bedding to small scale cross-bedding, 8° Dip, calcareous, stick core, some carbonaceous laminae in sandstone.
		.33		

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	79.36	.40		Siltstone, dark grey, muddy to more muddy towards base, fine carbonaceous impressions, stick core, slightly calcareous.
	81.33	.12		Mudstone, dark grey, silty throughout, 5 cm sandy band 80 cm from base, lower 17 cm grades silty to argillaceous sandstone, lower half very silty, some listricated surfaces near top, non-calcareous, bedding undefined to faint-rippled in sand section, fine calcite veins near base, stick to broken stick.
		1.62		
		.23		
	82.67	.73		Sandstone, medium to minor dark grey, very fine-grained with fine-grained and argillaceous laminae, very fine, muddy to carbonaceous laminae, some carbonaceous plant impressions along bedding, distinct ripple to uneven, fine bedding, 5° dip, stick to broken stick core, calcareous at top, slightly calcareous to non-calcareous at base.
		.61		

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SHEET No. 26

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	83.08	.16 (.25)		Sandstone, dark to medium grey, fine, argillaceous grain, uneven and ripple bedding, abundant, very fine mudstone clasts, fine carbonaceous debris along bedding, badly broken. (.25 m core loss)
	85.65	.75 1.60 .22		Sandstone, medium to dark grey, fine grain to argillaceous; grading to fine to medium grain in lower 115 cm, abundant carbonaceous laminae and debris throughout increasing near base, large plant impressions near base, abundant muddy clasts near base, 12° dip, uneven to ripple bedded non-calcareous, large calcite vein at base, broken stick core.
	86.35	.70		Sandstone, medium to dark grey, medium grained to gritstone grades to argillaceous, poorly sorted, abundant coal blebs and laminae, non-calcareous, some muddy clasts, undefined to thin and uneven bedding, broken stick.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	87.10	.31		Sandstone, medium grey, minor dark grey, upper 16 m and lower 14 cm fine to very fine-grained, with thin ripple and uneven bedding, abundant carbonaceous debris and laminae, some listricated surfaces; middle sandstone section medium-grained, bedding parallel and low angle 12° dip, abundant pyrite within sandstone, non-calcareous throughout, stick core, broken at top and base.
		.44		
	87.54	.44		Mudstone, dark grey, slightly silty, non-calcareous, very carbonaceous, with bright coal laminae in top 5 cm and lower 33 cm, 23 cm from base is 5 cm carbonaceous mudstone to poor coal, broken stick to badly broken in carbonaceous section.
	87.84	.18		Mudstone, slightly silty, slightly micaceous, non-calcareous, dark grey, thin coal laminae grading to near top, some listricated surfaces, stick core.
		.12		
	88.58	.74		Siltstone/Mudstone, dark grey, slightly micaceous, calcareous on silty sections, trace carbonaceous plant rootlets near top, conchoidal fractures, stick core.

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SHEET No. 28

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	89.19	.61		Mudstone, dark grey, non-calcareous, listricated surfaces, slightly silty, grades to siltstone in lower 20 cm, stick core.
	89.55	.07 .29		Sandstone, medium to dark grey, very fine to argillaceous grain, interbedded with dark grey siltstone and mudstones, carbonaceous plant impressions, well-defined, uneven, fine bedding, ripple small scale, cross-bedding, stick core, non-calcareous.
	90.69	1.14		Siltstone, dark grey, minor plant impressions at top, clean down section, minor listricated surface, non-calcareous, stick core.
	91.46	.09 .68		Siltstone/Sandstone, interbedded dark grey siltstone with medium grey, argillaceous sandstone, 11° dip, non-calcareous, fine grain down section, fine, uneven bedding throughout, stick core.

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SHEET No. 29

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	93.24	.74 1.04		Mudstone, dark grey, very silty up section, listricated, surface lower section, fine, carbonaceous plant impressions throughout, grading to carbonaceous at base, lower 8 cm contains bright coal laminae, stick to broken stick.
	93.44	.20		Mudstone, dark grey to black, carbonaceous, abundant, very fine coal laminae with thin, bright coal bands, 2 mm, listricated surfaces, non-calcareous, broken stick.
	94.16	.11 .61		Mudstone, dark grey, slightly silty in parts, listricated surfaces at top, minor carbonaceous debris near base, broken stick.
	94.78	.32 (.30)		Siltstone, medium grey with minor light and dark grey, non-calcareous with abundant thin calcite filled fractures, brecciated, broken stick to badly broken core. Core loss 30 cm siltstone.
	95.45	.65 .02		Siltstone, medium grey, 3 cm argillaceous sandy zone 30 cm from base, non-calcareous, clean throughout.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	96.41	.96		Mudstone, dark grey, silty in portions, siltier near base, minor fine carbonaceous plant impressions, non-calcareous, stick core.
	97.02	.52 .09		Sandstone/Siltstone, silt at top grading to argillaceous sandstone down section, dark to medium grey, fine ripple-bedded, abundant, slightly carbonaceous plant impressions along bedding, slightly calcareous, broken stick, 10° dip.
	97.36	.23 (.11)		Mudstone, slightly silty, dark grey, non-calcareous; conchoidal fracturing, minor carbonaceous impressions, badly broken core. 11 cm core loss.
	99.05	1.20 .49		Siltstone, dark grey, listricated surface, trace plant impressions, generally non-calcareous, slightly calcareous zone .15 m thick, 40 cm from top, calcareous on fractures (minor thin calcite veins), stick to broken stick.

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SHEET No. 31

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	99.85	.80		Mudstone/Siltstone, dark grey, silt grading to silty mudstone, clean, non-calcareous, stick core.
	101.10	.12		Siltstone, dark grey, minor carbonaceous plant impressions
		1.13		in top 15 cm, clean throughout, minor muddy section, calcareous, stick core.
	102.96	.50		Sandstone, fine-grained to very, fine-grained, argillaceous,
		1.36		medium grey to dark grey interbeds, ripple-bedding, 29 cm siltstone section 63 cm from top, calcareous throughout, stick core.
	103.71	.23		Siltstone, dark grey, top 43 cm muddy and darker grey,
		.52		grades to sandy near base, calcareous, stick and broken stick.
	105.05	.94		Sandstone, medium to dark grey, fine grain to argillaceous,
		.40		20 cm silty zone 75 cm from base which has listricated surfaces of calcite veins, 22 cm from top- calcite vein,
				thin ripple-bedded, 11° dip, thin, silty to muddy bands throughout, calcareous, stick core.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	105.89	.84		Mudstone, dark grey, silty, minor carbonaceous debris at top and at 27 cm below top, core broken at these locations, trace large, carbonaceous plant impressions; throughout, slightly micaceous, silty at base, broken stick core, calcareous.
	106.34	.45		Siltstone/Argillaceous Sandstone, dark and medium grey, gradational from siltstone through very fine grained sandstone, fine rippled to uneven bedding, calcareous, trace large plant impressions, carbonaceous with pyrite throughout.
	107.83	1.37		Mudstone, silty, dark grey, calcareous, top 27 cm very silty, and 24 cm zone 76 cm from the top, very silty graded to argillaceous sandstone, conchoidal fracturing, stick core.
	108.68	.46		Sandstone, medium to dark grey, argillaceous sandstone, silty, calcareous, trace very small carbonaceous debris, well-scattered, stick core, undefined bedding.
		.39		

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SHEET No. 33

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	111.12	.51		Sandstone, medium grey, minor dark grey, generally argilla- ceous and silty with interbeds of fine to very fine- grained sandstone, bedding small scale, cross-bedding with small cross-sets, minor ripple-bedding, calcareous, 20 cm from base, 45 cm of predominantly fine-grained sandstone, dip 19°, silty portion near top, slightly micaceous, some listricated surface, stick core.
		1.49		
		.44		
	112.25	.99		Sandstone, medium grey, fine to medium grained increasing down section (grain size), bedding parallel with some small cross-sets, minor small, muddy clasts, minor, very fine, muddy laminae, some listricated surface on laminae, fine calcite vein near section, calcareous, stick core.
		.14		
	112.85	.60		Sandstone/Gritstone, medium grey, Gritstone, mainly cherty, slightly calcareous, minor large coal plant impressions, stick to broken core.
	113.10	.19		Sandstone, medium grey, very fine to fine-grained, minor medium grained, slightly calcareous, generally parallel bedded, dip 13°, minor cross-sets, minor small carbonaceous
		.06		

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SHEET No. 34

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				debris throughout, broken stick.
	115.48	2.22		Sandstone, medium grey, minor dark grey, medium grained to very coarse grained, becoming coarser down section, grading to Gritstone, last 24 cm pebbles up to 3 mm, abundant, carbonaceous debris of large plant impressions throughout towards down section, minor coal blebs, muddy clasts scattered throughout, very abundant in lower 80 cm broken stick core, badly, 45 m from top, and badly broken and worn 75 cm from the top. (Core loss .14 m)
		.02		
		(.14)		
	118.07	1.34		Sandstone, medium grey, minor dark grey, argillaceous to very fine grained, with some fine bands, very thin, muddy laminae, large carbonaceous plant impressions scattered throughout, calcareous, bedding uneven to ripple with some small scale cross-bedding, stick core.
		1.25		
	118.60	.53		Siltstone with argillaceous Sandstone interbeds, dark grey minor, medium grey, bedding uneven to rippled, carbonaceous debris throughout, some muddy portions, stick core, calcareous.

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SHEET No. 35

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	119.92	1.21		Sandstone, medium grey, minor dark grey, fine medium-grained, with very fine and argillaceous interbeds, fine muddy laminae, calcareous, bedding varies to uneven rippled to small cross-sets, minor, well-spaced carbonaceous portions with large carbonaceous plant impressions, stick core.
		.11		
	120.54	.62		Sandstone, medium and dark grey, very fine grained to argillaceous with minor fine grain beds, well-defined, ripple bedding to small scale cross-beds, fine, muddy laminae, minor, very thin, carbonaceous laminae and plant impressions, calcareous, minor listricated surfaces, broken stick.
	120.92	.38		Siltstone, dark grey, grades to muddy silt to minor, argillaceous sandstone, muddy beds, very fine, carbonaceous laminae, stick core, calcareous.
	121.78	.26		Sandstone, very fine-grained to argillaceous, dark to medium grey, fine-grained sandstone interbeds, bedding small scale cross-bedded to ripple-bedded, muddy laminae
		.60		

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				and thin coal laminae, 10 ⁰ dip, stick to broken stick, calcareous.
	123.00	.91		Sandstone, medium grey, minor dark grey, fine to very fine grained, 6 cm medium-grained bed at top and 5 cm medium- grained bed 18 cm from top, thin mudstone laminae, uneven to ripple-bedded, grading to muddy near base, some listri- cated surfaces on muddy laminae, thin carbonaceous, laminae and carbonaceous plant impressions, more carbonace- ous at base, stick core, broken at base. (Core loss .34 m)
		.07		
		(.24)		
	123.26	.26		Mudstone, dark grey, minor, carbonaceous debris, listrica- ted surfaces, non-calcareous, broken stick.
	123.36	.03		Coal, dull, with minor, fine, bright laminae and bands less than 2 mm, broken core.
		.07		
	123.52	.16		Mudstone, dark grey to black, minor, thin, carbonaceous rootlets, listricated surfaces, non-calcareous, stick core.

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SHEET No. 37

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	123.80	.12 (.16)		Coal, dull, minor, thin, bright laminae less than 2 mm, badly broken. (Core loss .16 m)
	125.05	.22 1.03		Mudstone, dark grey, slightly silty, slightly calcareous in parts, listricated surfaces, conchoidal fractures, carbona- ceous plant impressions and some fine coal laminae, stick to broken stick.
				<u>Detail Coal Description</u>
	125.40	.05 (.30)		Mudstone, very carbonaceous, dark grey to black, bright coal bands throughout, badly broken core. (Core loss .46 m)
	125.46	.06		Coal, dull, muddy at base, badly broken core.
	125.48	.02		Mudstone, dark grey to black, carbonaceous debris, listri- cated surfaces, stick core.
	125.51	.03		Carbonaceous Mudstone/Coal, dark grey to black, abundant bright coal bands in mudstone.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	125.84	.11 (.22)		Coal, dull to dull bright banded, 1 cm muddy band, 3 cm from top, badly broken core. (.22 m core loss)	
	126.10	(.26)		Mudstone, dark grey to black, listricated surfaces, minor coal debris and laminae throughout, badly broken.	
	126.60	.30 (.20)		Mudstone, dark grey to black, very carbonaceous, more carbonaceous in top 6 cm and lower 5 cm, badly broken and worn core. (20 cm core loss)	
	126.70	.10		Coal, dull, fine bright laminae, near base, badly broken core becoming friable at base.	=====
	126.79	.09		Coal, bright, dull banded, friable throughout, badly broken.	
	126.89	.10		Canal Coal to Carbonaceous Mudstone/ high ash coal, dull, muddy, with bright laminae in bands.	=====
	127.01	.12		Coal, friable, very broken, bright and dull, core badly broken.	=====

SN80 3/3/1

SN80 3/3/2

SN80 3/3/3

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SHEET No. 39

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	127.03	.02		Canal Coal to Carbonaceous Mudstone, black, muddy with abundant bright bands.
	127.10	.07		Mudstone, dark grey to black, carbonaceous debris throughout, non-calcareous, broken stick.
	127.41	.31		Siltstone, medium and dark grey, grading down section to very fine grained sandstone, bedding indistinct at top, well-defined, gentle, ripple beds, some uneven bedding at base, slightly calcareous, stick core.
	127.74	.18 .15		Mudstone, dark grey, silty at top, grading to carbonaceous mudstone at base, listricated surfaces, carbonaceous laminae and debris throughout, stick core.
	127.76	.02		Mudstone, dark grey to black, very carbonaceous, grading to dirty coal, core badly broken and worn.
	128.19	.23 (.20)		Mudstone, dark grey to black, increasing carbonaceous down section, abundant coal laminae and fine coal bands throughout, listricated surfaces, stick, broken and worn at base. (Core loss .2 m Rock and Coal)

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SHEET No. 40

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
[]	128.28	.08		Coal, dull, minor bright bands, increasing bright towards base, broken stick.	=====
					SN80 3/3/4
					=====
	128.47	.20		Coal, bright, trace dull bands, stick core.	=====
					SN80 3/3/5
					=====
	128.62	.15		Coal, dull, minor bright laminae and bands (4 mm), bottom 3.5 cm muddy, broken stick core.	=====
					SN80 3/3/6
					=====
[]	129.20	.25 (.33)		Mudstone, dark grey to black, listricated surfaces, non- calcareous, minor carbonaceous debris throughout, core badly broken, becoming very carbonaceous towards base. 33 cm Core loss.	=====
					=====
	129.42	.22		Coal, generally dull, fine, bright laminae to thin, bright bands, 2 cm bright coal, 5 cm from top, badly broken core, 1 cm mudstone band near base, badly broken in part, stick core.	=====
					SN80 3/3/7
					=====
	129.60	.18		Coal, medium bright with bright bands near top and base (coal stick does not meet with mudstone stick below) stick core.	=====
					=====

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SHEET No. 41

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	129.62	.02		Mudstone, very carbonaceous, dark grey to black, coal debris throughout, stick.	SN80 3/3/7
					=====
	130.35	.73		Mudstone, dark grey, silty in part, abundant carbonaceous plant impressions throughout, conchoidal fracturing, non-calcareous, stick core.	
	130.71	.36		Siltstone to Argillaceous Sandstone, dark grey to medium grey, lower 12 cm very silty, upper sequence interbedded very fine sandstone and siltstones, bedding very uneven, grading to nearly parallel and rippled, generally non-calcareous, slightly calcareous on sandy sections, dip 5°, muddy and fine carbonaceous laminae, minor quartz veins, stick.	
	131.32	.61		Mudstone, dark grey, clean, slightly micaceous, conchoidal fracturing, silty at top, stick core, broken core at base.	
	131.60	.15 (.13)		Mudstone, dark grey to black, very carbonaceous, abundant carbonaceous debris, thin bright laminae throughout. (Core loss .13m)	

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SHEET No. 42

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	132.12	.52		Mudstone, dark grey, non-calcareous, abundant carbonaceous plant impressions and debris throughout, some coal blebs, slightly silty, broken stick.
	133.05	.60 (.33)		Mudstone, dark grey to black in part, listricated surfaces, abundant carbonaceous debris throughout, non-calcareous, broken stick to badly broken core. (Core loss .33 M)
	133.40	.35		Carbonaceous Mudstone, dark grey to black, very carbonaceous, fine to very fine coal laminae, silty texture, non-calcareous, broken core.
	133.55	.15		Siltstone, dark grey to black, very carbonaceous, non-calcareous, fine abundant carbonaceous debris throughout, badly broken core.
	134.07	.52		Sandstone/Siltstone, medium to dark grey, very fine-grained to argillaceous, non-calcareous, bedding very irregular to indistinct, 18 cm from top more carbonaceous stick to badly broken core at top.

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SHEET No. 43

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	135.03	.96		Siltstone/Sandstone, medium to dark grey, top 19 cm and lower 22 cm graded to siltstone, middle section interbedded argillaceous sandstone/siltstone and fine-grained siltstone, slightly calcareous on sandy sections, 9° dip, interbeds of siltstone/sandstone, approx. 2.6 cm thick, actual laminae indistinct to faint, stick core.
	135.54	.51		Siltstone, dark grey, becoming slightly finer down section fine, slightly carbonaceous rootlets in trace amounts, calcareous, no bedding, stick core broken at base.
	136.28	.74		Mudstone, dark grey, conchoidal fracturing, minor slightly silty sections near top, stick, slightly calcareous.
	138.11	.64		Sandstone, medium grey, minor dark grey, fine-grained, some argillaceous and very fine interbeds, 40 cm band 1 m from top, grades to medium-grained, calcareous, well-defined parallel bedding to slightly rippled, dip 19°, bioturbated, slumped bedding at base, stick core.
		1.19		

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	138.21	.10		Siltstone, dark grey, faint bedding, slightly micaceous, grades to argillaceous sandstone, calcareous, stick core.
	140.11	.25		Sandstone, medium grey, minor dark grey, muddy to carbona- ceous, muddy band 25 cm from top, broken and worn, top 90 cm of sandstone is; thinly rippled-bedded to uneven with fine slump structure, fine to very fine-grained, down section becomes fine to medium-grained, very fine, muddy to carbonaceous laminae at top to cleaner at base, calcareous throughout, minor muddy to carbonaceous clasts near base, dip 9°, stick core.
		1.37		
		.28		
	140.81	.64		Sandstone, very fine-grained to argillaceous becoming fine to medium-grained at base, medium grey, top 36 cm silty, fine muddy clasts and laminations throughout becoming coarser towards base, bedding irregular at base, carbonaceous clasts and blebs at base, broken stick core, calcareous. (Core loss .06 m)
		(.06)		
	140.87	.06		Sandstone, medium to coarse-grained, conglomerate bands with scattered pebbles (less than 1 cm diameter), medium

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COAL DIVISION

BOREHOLE No. BP 80-3

LOGGED BY R. J. Melin

DATE August 2, 1980

SHEET No. 45

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				grey, non-calcareous, slightly calcareous in parts, carbonaceous blebs, stick core.
	142.61	.42		Gritstone, grading to pebble conglomerate at base, medium to dark grey, lower 81 cm predominantly gritty conglomerate and with a 23 cm band 30 cm from top, sandy lens, to grad- ing medium to coarse-grained, some coal laminae and blebs, slightly calcareous, broken stick core, dip 11°.
		1.32		
	143.02	.13		Sandstone, medium to dark grey, medium and fine-grained with fine, muddy laminae, abundant mudstone and carbonace- ous clasts, slightly calcareous to calcareous, broken stick.
		.28		
	144.15	1.13		Sandstone, medium grey, some dark grey, medium-grained grading to fine and very coarse-grained in portions, poorly sorted at top, top 26 cm abundant, muddy laminae and clasts and carbonaceous laminae and blebs, parallel laminae and ripple-bedded, dip 14°, 7 cm conglomerate band 36 cm from top, pebbles and clasts increasing to .75 cm below conglomerate to grades from gritstone with

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LOGGED BY R. J. Melin

DATE August 2, 1980

SHEET No. 46

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				minor pebble and medium-grained sandstone, bottom .34 cm
				fine gritstone grading to medium-grained sandstone down
				section, calcareous top 1/3 section, non-calcareous lower
				2/3 section.
	145.20	.17		Gritstone, medium to dark grey, top 7 cm coarse gritstone
		.88		pebbles increasing to .5 cm interbedded medium size grit-
				stone with minor coarse sand and coarse gritstone through-
				out, bottom 24 cm medium coarse to coarse-grained sandstone,
				minor, small coal blebs scattered throughout, slightly
				calcareous, dip 38 ^o , large scale cross-bedding, stick
				core.
	147.63	.65		Sandstone, medium grey, minor dark grey, top 20 cm to
		1.53		generally fine grain with medium-grained with minor
		.25		pebbles, large minor, carbonaceous plant impressions,
				next 80 cm - poorly sorted pebbly gritstone to fine-grained
				sandstone, abundant large coal blebs and impressions,
				muddy clasts throughout, minor pebbles throughout, next
				30 cm - clean sequence, minor, large, carbonaceous plant
				impressions becoming gritty at base, bedding small cross-

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SHEET No. 47

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				sets, medium to large scale cross-bedding, lower 1.13 m, interbedded, medium to coarse-grained sandstone and grit with scattered pebbles throughout, slightly calcareous at top to calcareous at base, dip 5 - 12° on cross-beds, stick core.
	148.37	.74		Siltstone, dark grey, minor, carbonaceous plant impressions, calcareous, slightly micaceous, stick core.
	151.20	1.86		Mudstone, dark grey with minor black portions, non-calcareous, top 105 cm minor scattered carbonaceous debris, becoming slightly more carbonaceous down section, abundant, carbonaceous plant impressions, stick core.
		.49		
		.48		
	152.61	.97		Sandstone, dark to medium grey at top and medium grey at base, top 72 cm interbedded fine sandstone with argillaceous sandstone and silt, muddy at top, uneven to ripple-bedded, 10° dip, fine, muddy laminae clasts throughout, minor, thin coal laminae, non-calcareous to slightly calcareous at base, bottom 71 cm becoming coarse with a
		.44		9 cm gritty conglomerate band 14 cm from base with pebbles 5 cm in diameter.

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SHEET No. 48

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	153.24	.63		Conglomerate, gritty, with pebbles up to 1 cm in diameter grading down to sand and gritstone, coarser 15 cm (top) and lower 8 cm, matrix slightly calcareous, stick core.
	155.00	.40		Sandstone, medium grey, medium coarse-grained, minor, gritty and minor fine sections, dip 12 ⁰ , slightly calcareous, thickly bedded, broken muddy band, carbonaceous, 58 cm from top, thin, carbonaceous laminae scattered throughout section, minor listricated surfaces, stick to broken stick.
		.82		
		.54		
	158.00	.31		Conglomerate/Sandstone, top 1.23 m pebble conglomerate, coarse sand - grit matrix, abundant pebbles increasing to 1.5 cm; next 1.74 m coarse sandstone with grading to gritstone with pebbles scattered throughout, with interbedded gritty conglomerate bands increasing to 12 cm thick, pebbles less than .75 cm; basal 43 cm conglomerate, coarser down section, pebbles up to 2 cm at base, calcareous throughout, stronger at base.
		1.64		
		1.05		

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SHEET No. 49

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	161.00	.60		Mudstone, dark grey, grading slightly silty to silty down section, calcareous throughout except for 33 cm at top, top 33 cm also has trace fine, carbonaceous debris, lower portion very clean, micaceous, conchoidal fracturing, stick core.
		1.49		
		.91		
	161.38	.38		Sandstone, fine to medium-grained, medium grey, darker grey clasts, muddy, thin laminae, abundant, muddy clasts throughout, - up to 2 cm in diameter, coal (minor) laminae and blebs, calcareous, bedding slumped to uneven, stick core, calcite crystals at base.
	161.53	.15		Siltstone, dark grey, minor medium grey, grading to argillaceous sandstone, non-calcareous, stick core.
	161.73	.20		Sandstone, fine-grained, grading to medium-grained and coarse-grained down section, medium grey with dark grey clasts, abundant, muddy clasts throughout, 4° dip, calcareous, stick core, thick, poorly undefined bedding.

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LOGGED BY R. J. Melin

DATE August 2, 1980 SHEET No. 50

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	163.22	.13		Siltstone, dark grey, minor medium grey, abundant argillaceous sandstone, interbeds, well-defined to small scale cross-bedding, top 25 cm and lower 23 cm grading down to siltstone, 8 cm band fine to medium grained sandstone 39 cm from the base, calcareous throughout, minor slickensides surfaces infilled with calcite, dip 12 ^o , stick core.
		1.36		
	163.44	.22		Siltstone, dark grey, muddy, very fine carbonaceous plant impressions throughout, slightly calcareous, stick core.
	167.58	1.63		Sandstone, medium grey, abundant dark grey beds, grading siltstone to argillaceous sandstone, fine to very fine interbeds, well-defined ripple-bedding, cross-bedding, slump beds, large worm burrows, top 140 cm generally sandy grading down to siltstone with interbedded sandstone down section, calcareous; 12 ^o dip.
		1.54		
		.97		
	168.06	.48		Mudstone, medium to minor dark grey, conchoidal fracturing minor silty, slightly calcareous throughout, minor thin (.5 m) fine-grained, medium grey sandstone band, some

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LOGGED BY R. J. Melin

DATE August 3, 1980

SHEET No. 51

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				listricated surfaces, broken stick, minor carbonaceous debris.
	169.00	.94		Mudstone, medium to dark grey, conchoidal fracturing in part, non-calcareous, some carbonaceous debris, minor listricated surfaces, broken to very badly broken core.
	169.55	.33		Carbonaceous Mudstone, dark grey to black, abundant carbonaceous plant and rootlet impressions throughout, non-calcareous, abundant bright coal bands (1.- 2 cm) throughout, dirty, broken to very broken core. (Core loss .17)
		.05		
		(.17)		
	170.55	1.00		Mudstone, medium to dark grey, conchoidal fracturing, non-calcareous, minor carbonaceous debris, listricated surfaces, broken to broken stick core.
	171.15	.20		Carbonaceous Mudstone, dark grey to black, abundant coal debris and plant and rootlet impressions, listricated surfaces, non-calcareous, very badly broken core. (Core loss .40 cm)
		(.40)		

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COAL DIVISION

BOREHOLE No. BP 80-3

LOGGED BY Pat Lee

DATE August 5, 1980

SHEET No. 52

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	172.01	.86		Mudstone, medium grey to minor dark grey, conchoidal fracturing in part, non-calcareous, minor carbonaceous plant and rootlet impressions, broken stick core.
	172.69	.42		Sandstone, very fine to fine-grained, medium grey, abundant quartz along fractures and in veins, bedding is massive near top with some slump bedding immediately below with fine to medium-grained, less than 5° dip, below slumped zone, bedding becomes even and almost parallel, stick to broken stick core.
		.26		
	176.15	1.28		Mudstone, medium grey, non-calcareous, conchoidal fracturing, abundant carbonaceous debris, scattered carbonaceous plant and rootlet impressions, stick and broken stick core, listricated surfaces, muddy, silty in parts. (.46 m Core loss)
		1.64		
		.08 (.46)		
	176.23	.08		Carbonaceous Mudstone, dark grey to black, muddy, trace bright coal bands, minor listricated surface.

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DATE August 5, 1980 SHEET No. 53

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	176.87	.64		Mudstone, medium to dark grey, conchoidal fracturing, listricated surfaces, minor, carbonaceous plant and rootlet impressions, non-calcareous, stick and broken stick core.
	177.30	.23 (.20)		Carbonaceous Mudstone, dark grey to black, abundant coal (bright) bands, muddy, non-calcareous, plant and rootlet impressions, broken core, less carbonaceous debris last 13 cm. (.20 m core loss)
	179.12	1.46 .36		Siltstone, medium grey, non-calcareous, minor, carbonaceous debris, scattered plant and rootlet impressions, section grading from muddy siltstone at top to cleaner at base, abundant quartz in filling along fracture planes stick to broken stick core.
	181.15	1.08 .56 .39		Sandstone, medium grey, very fine to fine-grained, massive, undefined bedding except for even parallel bedding in trace amounts, argillaceous to muddy near base, non-calcare- ous throughout, dip 2 - 5°, stick core, grain very fine and muddy near base.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	181.69	.54		Siltstone, dark grey, listricated surfaces, minor, thin, coaly bands (3 mm), non-calcareous, thin sandstone beds (interbedded) throughout, sandstone light to medium grey, medium fine-grained, bentonitic (friable) carbonaceous rootlets and plant impressions in mudstone.
	182.00	.31		Sandstone, light to medium grey, fine to medium-grained, interbedded thin mudstone beds and clasts grading up to base, listricated surfaces, non-calcareous, minor, carbonaceous debris, fine, uneven to ripple-bedded, 15° dip, stick core.
	182.15	.15		Siltstone, dark grey, listricated surfaces, minor carbonaceous debris, minor sandstone clasts, minor coal laminae in silt (.5 cm - 1.0 cm), non-calcareous, broken core at top to stick at base.
	182.55	.27		Sandstone, light to medium grey, fine to medium-grained, non-calcareous, interbedded silty mudstone beds, blebs and clasts abundant throughout, scattered carbonaceous laminae throughout, plant and rootlet impressions, listricated
		.13		

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BOREHOLE No. BP 80-3

LOGGED BY Pat Lee

DATE August 1, 1980

SHEET No. 55

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	183.35	.80		Mudstone, dark grey, non-calcareous, listricated fracturing, minor coal blebs throughout, silty in part, minor plant and rootlet impressions, stick near tip, broken near bottom, brown streak.
	183.73	.38		Mudstone, dark grey, non-calcareous, silty in part, minor listricated fractures, friable, dirty, broken.
	183.86	.06 .07		Mudstone, dark grey, non-calcareous, silty in part, listricated surfaces, scattered carbonaceous throughout, friable, platelets of coal, broken stick.
	185.27	1.41		Mudstone, dark grey, silty in part, trace coal near base, trace rootlets and plant impressions throughout, listricated surfaces, conchoidal fracturing near middle of sequence broken stick and stick, non-calcareous.
	185.70	.27 (.16)		Mudstone, dark grey, scattered bright laminae coal (max 1 cm), friable, dirty, minor silty in part, minor rootlet and plant impressions, broken core and worn. (.16 m core loss).

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DATE August 1, 1980 SHEET No. 56

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	187.36	.23		Mudstone, dark grey, non-calcareous, trace rootlet and plant impression, silty in part, conchoidal fracturing, stick and broken stick core.
		1.00		
		.43		
	190.28	1.3		Siltstone, dark grey, listricated surfaces, pyrite on some surfaces in minor amounts, minor, carbonaceous plant and rootlet impressions, platey, stick and broken stick core, calcareous, grading to minor calcareous at base, stick and broken stick core.
		.26		
		1.22		
		.14		
	191.71	1.4		Sandstone, medium grey, very fine-grained, non-calcareous, minor interbedded, silty mudstone, even, thin bedding throughout, clacite along contact with next lower sequence, stick.
		.03		
	192.63	.92		Siltstone, dark grey, non-calcareous, conchoidal fracturing, thin mudstone laminae scattered throughout, stick and broken stick core.

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DATE August 1, 1980

SHEET No. 57

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	193.19	.56		Mudstone, medium to dark grey, slightly calcareous, conchoidal fracture, barren of coal, slightly micaceous, becoming silty near base.
	193.78	.59		Siltstone, medium grey, thin, bright coal bands, grading to mudstone in parts, non-calcareous, broken to broken stick.
	194.27	.49		Sandstone, medium grey, calcareous, very fine to fine-grained, bedding massive to thin, even and parallel beds, dip less than 5°, some slump bedding, stick core.
	194.71	.44		Sandstone/Siltstone, medium grey, very fine to fine-grained, grading down to siltstone at base, massive even bedding throughout sandy section, slightly calcareous, conchoidal fracturing near base.
	195.82	.03 1.08		Siltstone, medium to minor dark grey, calcareous to slightly calcareous at base, muddy, calcite infilling on fracture, pseudo-conchoidal fracturing, broken stick core.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	196.30	.43		Sandstone, medium grey, very fine to fine-grained, argilla- ceous, slightly calcareous, calcite infilling along fract- ures, bedding massive to even and parallel, very thin, shallow dipping beds, stick and broken stick core.
		.05		
	198.84	1.51		Mudstone, dark grey to black, abundant coal debris, scattered plant and rootlet remains, very slightly calcar- eous, conchoidal fracturing, muddy, broken to broken stick, muddy and carbonaceous grading towards base.
		1.03		
	199.07	.23		Mudstone, medium to dark grey, very dirty and muddy, listricated surfaces, scattered coal debris and coal plant and rootlet impressions, conchoidal fracturing, broken stick core, black streak, non-calcareous.
	200.00	.93		Siltstone, medium grey to minor dark grey, non-calcareous, listricated surfaces, scattered coal plant and rootlets impressions, conchoidal fracturing, broken stick to stick core.

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DATE August 5, 1980

SHEET No. 59

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	201.00	.52		Carbonaceous Mudstone, dark grey to black, abundant, bright coal bands grading to 1 cm thick, abundant carbonaceous plant and rootlet impressions, non-calcareous, dirty, listricated surfaces, conchoidal fracturing, brown streak throughout, broken stick to broken core.
		.48		
	201.71	.55		Siltstone, medium to dark grey, non-calcareous, abundant large medium grey, muddy clasts top 8 cm, semi-conchoidal fracturing, trace very fine-grained, medium grey sandstone beds near base.
		.16		
	202.11	.40		Sandstone, very fine to fine-grained, medium grey, abundant carbonaceous rootlets at top, bedding at top disturbed bedding lower: cross-bedding, cross-sets, uneven with dip of 8°, calcareous, finer grain at base, broken stick core.
	203.02	.91		Sandstone/Siltstone, medium grey, very fine to fine, argillaceous sandstone, grading down to siltstone at base, calcareous, massive undefined bedding of sandstone, stick core, gradation of sandstone to siltstone indistinct

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SHEET No. 60

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	204.65	.20		Mudstone, medium to dark grey, non-calcareous, conchoidal fracturing, silty in parts, slightly micaceous, minor listricated surfaces, badly broken to broken core, muddy. (Core loss at top .39 m)
		1.04		
		.39		
	204.89	.24		Sandstone/Siltstone, medium grey, very fine to fine-grained, sandier near base of section, scattered carbonaceous plant and rootlet impressions.
	204.97	.08		Sandstone, medium grey, very fine to fine-grained, abundant very thin, muddy laminae, scattered carbonaceous plant and rootlet impressions, minor thin coal laminae (1 mm thick), stick core, non-calcareous, bedding - massive to undefined.
	205.14	.11		Siltstone, medium to dark grey, conchoidal fracturing, muddy, trace minor carbonaceous debris, trace carbonaceous plant and rootlet impressions, non-calcareous, broken stick core.
		.06		

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LOGGED BY Pat Lee

DATE August 6, 1980

SHEET No. 61

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	206.19	1.05		Sandstone, medium to minor dark grey, very fine to fine to medium-grained, non-calcareous, bedding; some slumping, cross-sets, cross-bedding, uneven, dip = 6°, abundant muddy, silty laminae throughout, abundant, carbonaceous plant and rootlet impressions, trace of listrication in silty laminations.
	207.80	.39		Siltstone, medium grey, non-calcareous, listricated surfaces, conchoidal fracturing, muddy in part, scattered carbonaceous debris throughout, broken stick to stick core.
	208.85	.30		Sandstone, medium grey, very fine to fine-grained, non-calcareous, scattered quartz infilling on fractures, minor coal debris, minor, carbonaceous plant and rootlet impressions, bedding; massive undefined bedding, dip indistinct, broken stick core.
		.75		
	209.51	.66		Mudstone, very silty, medium to dark grey, conchoidal fracturing, listricated surfaces, scattered carbonaceous debris, scattered carbonaceous plant and rootlet impressions

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DATE August 6, 1980

SHEET No. 62

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				grading up towards base, siltiest at and near top, non-calcareous, broken to broken stick core.
	210.09	.32		Mudstone, dark grey to black, abundant carbonaceous
		(.26)		debris in top half of section, scattered, bright coal bands (1 mm thick), muddy, conchoidal fracturing, grading down to very silty at base, badly broken and broken core, non-calcareous. (.26 m core loss)
	210.41	.31		Siltstone, medium grey, conchoidal fracturing, slightly calcareous, trace calcite, minor, carbonaceous debris, minor carbonaceous plant and rootlet impressions, broken stick.
	213.96	.90		Sandstone, medium grey, medium to fine-grained, very calcareous throughout, trace bright coal bands (3 mm)
		1.60		abundant, thin, muddy laminae throughout, trace pyrite, bedding some slumping at base, even and parallel at and near top, middle of section cross-sets, cross-bedding,
		1.06		medium grain in middle with medium to fine at top and base, dip grading up to 15°, silty at base, broken stick core.

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LOGGED BY Pat Lee

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SHEET No. 63

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	216.00	1.30		Mudstone, dark grey to black, very carbonaceous, listricated surfaces throughout, non-calcareous, abundant, carbonaceous plant and rootlet impressions, abundant, thin, bright coal laminae, friable, muddy, silty at top and bottom, badly broken to broken core. .26 m core loss.
		.48		
		(.26)		
	216.89	.86		Siltstone, medium to dark grey, non-calcareous, minor conchoidal fracturing, minor carbonaceous debris throughout, minor listricated surfaces, broken stick to stick core.
		.03		
	217.78	.89		Siltstone, medium to dark grey, dirty, non-calcareous, scattered calcite laminae along fractures, conchoidal fracturing, listricated surfaces, minor carbonaceous debris, broken and broken stick core.
	219.88	.61		Mudstone, dark grey to black, non-calcareous, muddy, friable, abundant carbonaceous debris, abundant carbonaceous plant and rootlet impressions, scattered, bright coal bands, listricated surfaces throughout, badly broken to crumbled and worn core.
		1.49		

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE July 27, 1980

SHEET No. 1

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	2.69	(2.69)		OVERBURDEN - NO CORE
2 ^o to 3 ^o	3.50	0.81		SANDSTONE: Medium grey, fine to medium grained. very thin phases of very coarse-grained sands. Frequently varying grain size, and spars throughout (some large ones). Ubiquitous tiny silty/muddy intraclasts; illsorted sediments throughout, strongly calcareous, core in large pieces.
	4.99	1.49		SANDSTONE: Medium grey, very coarse-grained and variable grain sizes, gritty bands, illsorted sediments, coal spars, calcareous, locally cross-bedded, broken core and fragmented.
3 ^o to 5 ^o	6.37	1.38		SANDSTONE: Medium to light grey, upper 0.88 m very coarse-grained sand and slightly gritty with abundant coal spars and carbonaceous 'seams', generally poorly-sorted. Remainder fine to medium grained, clean and strongly calcareous, and laminated sands; broken core.
	7.30	0.93		SANDSTONE: Medium grey, very fine-grained with abundant tiny intraclasts tending to accumulate in layers. Also carbonized plant matter and coal spars. A minor calcite fracture; strongly calcareous, broken core.

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BOREHOLE No. BP-4-80 LOGGED BY Dr. Chowdry DATE July 1980 SHEET No. 2

COM BCA*	DEPTH m (GEOH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	7.80	0.50		MUDSTONE: Buffish grey, weathered partially, very silty, strongly calcareous, sparse carbonaceous matter, badly fragmented. Core Loss in this unit - 0.38 m.
	9.06	1.26		MUDSTONE: Medium grey, locally weathered, all fragmented and locally ground core; very silty, finely broken carbonaceous debris sparsely dispersed, ferruginous bands, non-calcareous, fragmented.
	9.60	0.54		SANDSTONE: Medium grey, very fine-grained, very argillaceous, totally root disturbed resulting in chaotic fabrics, spotted appearance, abundance of finely broken plant debris, relics of lamination, non-calcareous; core broken.
	11.13	1.53		SILTSTONE: Dark grey, highly muddy, some discrete argillaceous bands, carbonaceous matter, non-calcareous; broken core. Bottom 0.06 richly carbonaceous. Core Loss in this unit - 0.58 m.
	11.78	0.65		SILTSTONE: Medium grey, highly argillaceous, abundant plant debris and fine rooty matter, vague laminae, non-

calcareous, CUSA

BOREHOLE

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BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE July 1980

SHEET No. 3

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				broken core.
5 ⁰	12.57	0.79		SANDSTONE: Medium grey, very fine grained (upper 0.49 m) ubiquitous cross-lamination, rippled, some parallel lamination and graded laminae, punctured occasionally by burrows (to silts). Rest dark grey, argillaceous siltstone and highly ferruginous. Sandstones strongly calcareous; broken core.
	13.98	1.41		SANDSTONE: Medium grey, very fine grained (basal 0.40 fine-grained), cross-laminated and much ripple-drifted, zones of dark grey to black laminae alternating with light grey laminae - this being due to accumulation of powdered carbonaceous matter, a zone of tiny intraclasts, coal spars toward base, strongly calcareous; broken core.
	15.20	1.22		SANDSTONE: Medium/dark grey, fine to medium grained, silty laminae, dominantly cherty, dark laminae due to concentration of finely broken carbonaceous matter, cross-bedded, strongly calcareous, scoured base.

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SHEET No. 4

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	15.43	0.23		MUDSTONE: Dark grey, highly silty, carbonaceous matter, ferruginous patchily calcareous; broken core.
4°	15.83	0.40		SANDSTONE: Medium grey, very fine-grained, laminated and tiny ripples, locally argillaceous/silty, calcareous, scoured base.
	16.02	0.19		MUDSTONE: Black, very silty, carbonaceous matter, very gradual.
	17.37	1.35		SILTSTONE: Medium/dark grey, argillaceous, plant matter, locally very hard and crusty (? ferruginous), core fragmented. Core Loss in this unit - 0.45 m.
	18.26	0.89		SANDSTONE/SILTSTONE: Medium to dark grey, sandstones very fine-grained, laminated, argillaceous, interlayered with muddy siltstone and several discrete black mudstone bands.
	18.90	0.64		MUDSTONE: Medium grey, very silty, strongly calcareous, fragmented and vertical fracture with calcite encrustation.

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SHEET No. 5

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	20.41	1.51		SILTSTONE: Medium grey, coarse-grained, clean with some rooty carbonized remains, lacking lamination, strongly calcareous. Broken stick.
	21.96	1.55		SILTSTONE: Medium grey, clean looking, sparse finely broken plant debris, strongly calcareous, broken stick.
	22.30	0.34		SILTSTONE: As above, stick.
4°	23.32	1.02		SANDSTONE: Medium grey, very fine-grained, highly argillaceous, locally grading to siltstones, irregularly laminated, micro-erosional contacts, slightly disturbed laminae, strongly calcareous; broken stick.
	23.49	0.17		SANDSTONE: As above, very gradational, stick broken.
	24.59	1.10		MUDSTONE: Medium/dark grey, locally black and carbonaceous, unit is characterized by its commonly dense texture and ferruginous component, some of it very hard. Also throughout is found large but thin shelled pelecypods with strong rib structures (concentric) along with finely broken shell debris

(pyritized)

C18A

BOREHOLE

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SHEET No. 6

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				and in close association with finely broken carbonaceous matter. Occasional black well-rounded pellets (? cherts) seen. All shells are pyritized and partially react with Hcl. Broken core.
	24.88	0.29		SILTSTONE: Dark grey, occasional plant matter, non-calcareous.
	25.51	0.63		MUDSTONE: Dense, dark grey, locally abundant carbonized plant matter, very ferruginous; fragmented, calcareous.
	26.28	0.77		SILTSTONE/SANDSTONE: About equal, medium grey, sands very fine-grained, laminated (slumped and disturbed laminae), argillaceous; basal 0.23 very muddy and carbonized plant debris; brittle fracture and fracture surface oxidized. Strongly calcareous. Broken stick.
	26.34	0.06		COAL: All bright but tiny pieces and pulverized.
	26.43	(0.09)		CORE LOSS - ROCK

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SHEET No. 7

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	26.55	0.12		MUDSTONE: Black, very carbonaceous, basal 4 cm argillaceous, very fine-grained sandstone.
	26.78	0.23		SANDSTONE: Light/medium grey, very fine-grained, argillaceous laminae; appears to be disturbed tiny ripples, carbonaceous plant debris, strongly calcareous. Fragmented core.
	27.29	0.51		MUDSTONE: Dark grey, locally black and very carbonaceous, and hard crusty mudstone; basal 0.12 m dense, broken core.
	27.39	0.10		COAL: Mixture of dull banded and dull and bright.
	27.68	0.29		SILTSTONE: Medium grey, coarse-grained, incorporating abundant finely divided carbonaceous plant debris. Rooty, top 4 cm highly argillaceous with abundant admixture of carbonaceous particulate matter, broken stick.
	28.00	0.32		SILTSTONE: As above, highly, scoured base.
	28.28	0.28		MUDSTONE: Dark grey, very silty, occasional lamination, coal

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COAL DIVISION

BOREHOLE No. BP-4-80 LOGGED BY Dr. Chowdry DATE July 1980 SHEET No. 8

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				spar. Core broken, very transitional below.
3 ⁰ -4 ⁰	31.32	2.12		SANDSTONE/SILTSTONE: Medium/dark grey, 46% sands, 42% siltstones, 12% mudstone, a distinctive unit consisting of very broadly alternating sequences, sandstones very fine-grained, ubiquitously laminated and rippled with thin dark grey silty muddy laminae, much graded laminae, silts very argillaceous and vaguely banded; two zones with abundant sand filled burrows. Whole sequence broadly cyclic with sands and fining upward, with some interruptions, strongly calcareous throughout, broken stick. Two minor fractures along bedding (scaly large plant fragments, carbonized).
	32.04	0.72		SANDSTONE: Top half dark grey, very fine-grained with no discernible lamination; rest light grey, fine grained, partly ripple-drifted with top half showing many isolated sand-filled burrows, locally dark laminae. Strongly calcareous; broken stick.
	32.51	(0.47)		CORE LOSS - ROCK

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SHEET No. 9

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	32.55	0.04		SANDSTONE: As above and slightly erosional base.
5°	34.40	1.85		SANDSTONE/SILTSTONE: Dark grey siltstones (68%) and sandstones (27%), very fine grained, rippled, lenticular and broadly interlayered. some syndepositional dislocation; strongly calcareous, clean vertical fractures, broken stick. Locally passing to dense silty sandstone (5%).
	35.35	0.95		MUDSTONE: Dark grey, <u>dense</u> throughout; locally ferruginous, strongly calcareous except basal 0.12 m that is black and approaching cancelloid texture. Bottom 0.05 fragmented and comprises hard crusty mudstone with coal laminae. Broken core. Core Loss in this unit - 0.08 m.
	35.66	(0.31)		CORE LOSS - ROCK
	35.75	0.09		MUDSTONE: Black, very carbonaceous and coaly laminae.
	38.51	2.76		SILTSTONE: Top 1.96 m dark grey, richly argillaceous with occasional lenses of very fine-grained sandstones, abundant finely broken vegetal matter and roots; basal 0.95 m medium

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SHEET No. 10

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				grey, with little or no argillaceous fraction but extremely rich in rootlets and sequence devoid of lamination; non-calcareous throughout, broken stick.
	38.66	0.15		MUDSTONE: Medium grey, silty finely broken plant debris.
5°	40.62	1.96		SILTSTONE: Medium grey, upper half locally very argillaceous, rooty and has finely broken plant matter, remainder coarse-grained or very fine sandstone, silts with locally very fine grained sands and occasional lamination. Basal 0.70 m strongly calcareous; broken stick.
	41.64	1.02		SANDSTONE: Medium grey, very fine-grained, chaotic fabrics due to bioturbation, mostly clean, basal 0.44 m have laminae, lenses and 'clasts' of brownish silts that simulate a reworked bed due to current action, but might be due to intense bioturbation (isolated burrows also discernible). Strongly calcareous, broken stick.
5°	43.69	2.05		SANDSTONE: Top 0.33 m part of the overlying unit, rest fine to medium grained, light medium grey, cross-bedded, and

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SHEET No. 11

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				cross-laminated; basal 0.89 m with abundant tiny silty clasts (tending to locally concentrate), coal spars and darker laminae due to finely macerated carbonaceous content; strongly calcareous; erosional at base, broken stick.
	44.63	0.94		SANDSTONE: Medium to dark grey, dominantly very fine-grained, and locally passing to silty bands, wavy laminated, tiny ripples and tiny occasional silty intraclasts, some cross-lamination. Whole sequence broadly banded. Strongly calcareous, broken stick.
	45.40	0.77		SANDSTONE: Medium/dark grey, as above. a substantial amount of silty content, slightly erosional at base, broken stick.
	47.34	1.94		SANDSTONE: Light/medium grey, fine-grained, medium-grained, cross-laminated throughout, characterized by closely-spaced darker laminae due to finer argillaceous/carbonaceous detritus 0.20 m. Siltstone (argillaceous) band, basal 6 cm have concentration of clasts; strongly calcareous, erosional below, one clean vertical fracture, broken stick.

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SHEET No. 12

COM BCA*	DEPTH m (GEOH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	47.53	0.19		MUDSTONE: Black, highly carbonaceous, with a stringer of very fine sands, slightly ferruginous, broken core.
	48.25	0.72		MUDSTONE: Medium/dark grey, rootlets, 6 cm laminated silty band, slightly carbonaceous mudstone band, non-calcareous, gradational.
	49.17	0.92		SILTSTONE: Medium grey, rooty and finely broken plant debris, locally highly argillaceous, 9 cm very fine-grained sandstone with suggestion of burrowing, strongly calcareous throughout, very gradual at base; broken stick.
7°	52.40	3.23		SANDSTONE/SILTSTONE (65% : 35%): Medium grey, very fine-grained, highly argillaceous and locally passing to siltstones: 0.09 m thick light grey fine-grained sandstone with highly erosional floor and toward its top incorporating abundant silty intraclasts. Broadly laminated and isolated ripples. Much burrowing and locally bioturbation evident especially in 0.62 m thick sequence in lower half. Basal 0.23 m showing slump structures. Very strongly calcareous unit, broken stick, passage below by interbedding. Core Loss

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SHEET No. 13

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				in this unit - 0.12 m.
	53.64	1.24		SANDSTONE: Light grey, fine-grained, ubiquitously ripple-drifted, very strongly calcareous, highly erosional base. Stick
	54.23	0.59		SANDSTONE/SILTSTONE: Predominantly dark grey, frequently interlaminated very fine-grained argillaceous sandstones and argillaceous siltstones. Basal 0.15 shows disturbed structures, calcareous, broken stick.
5°	56.21	1.98		SANDSTONE: Medium grey, frequently varying sequence of fine-grained to fine/medium-grained sandstones with zones of abundant small intraclasts (silts), ubiquitous coal spars, cross-laminated and cross-bedded, locally showing some grading; large size dark grey mudstone clasts near base, calcareous throughout, erosional. Broken stick.
	58.90	2.69		SANDSTONE: Medium/dark grey, top 1.09 m fine to very fine-grained, the rest very fine-grained and highly argillaceous some ripple drifting in upper section, otherwise sparsely

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LOGGED BY P. Lee

DATE August 12, 1980 SHEET No. 66

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	289.20	2.00		SILTSTONE: Dark grey to minor black, muddy throughout, carbonaceous, thin coal laminae throughout, calcite infilling along fractures, listricated surfaces, abundant coal debris throughout, non-calcareous. Badly broken core. Core Loss in this unit - 0.18 m.
	289.55	0.35		SANDSTONE: Medium grey, fine- to very fine-grained, mica flakes, thin dark grey bands throughout, minor carbonized debris in part. Stick core.
	289.93	0.38		MUDSTONE: Dark grey, very silty throughout, conchoidal fracture, listricated surfaces in part, abundant carbonized debris throughout, non-calcareous, thin calcite band at base. End of box 96. Top of box 97
3 ⁰ - 4 ⁰	292.52	2.59		SILTSTONE/SANDSTONE/MUDSTONE: Medium/dark grey, dominance of silts, rest very fine-grained argillaceous sands, locally rippled, some bioturbation, silts locally rooty, some slumping, calcareous, especially sandy zones, mudstones dark grey,

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SHEET No. 15

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				Broken stick.
	65.62	0.86		SILTSTONE: Medium grey, very argillaceous, and some mudstone layers, sparsely laminated; some micro-erosional contacts, one coal spar. Core broken and a clean vertical fracture.
	66.03	0.41		MUDSTONE: Black, slightly silty, structureless, gradational.
	66.85	0.82		SANDSTONE: Medium/dark grey, top 2/3 richly argillaceous, and with significant muddy layers and sporadically laminated, rest regularly cross-laminated, strongly calcareous throughout, gradational; broken stick.
	67.35	0.50		SANDSTONE: Light grey, fine-grained, thin bands of silts or very fine-grained sandstone, laminated, strongly calcareous, abrupt and erosional base; broken stick.
6 ⁰ -7 ⁰	69.35	2.00		SANDSTONE/SILTSTONE: Medium grey, top half dominantly siltstones, highly argillaceous, and vaguely and sparsely laminated. Rest very fine-grained argillaceous sandstones. Regularly laminated and cross-laminated, basal 0.35 m

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SHEET No. 16

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				showing 1.5 cm thick graded and distinctly banded laminae (from very fine sands to silts and muds), strongly calcareous throughout, one oblique fracture (mineralized); broken stick, gradational below.
	70.50	1.15		SANDSTONE: Top 0.25 black carbonaceous siltstone/sandstone. Rest medium grey, very fine-grained argillaceous, rooty sandstones, upper half of which is devoid of lamination and lower section laminated, cross-laminated, also rooty and calcareous; gradational at base; broken stick. Core Loss in this unit - 0.07 m.
	72.00	1.50		MUDSTONE/SILTSTONE: Predominantly mudstone, dark grey, black, locally carbonaceous; lenses of coal. Siltstones 1/3 of sequence, very highly argillaceous and contain large sized carbonized leaf impressions. 0.18 m very carbonaceous mudstone with coaly laminae. Core Loss in this unit - 0.07 m.
	75.90	3.90		SANDSTONE: Top 0.67 m light/medium grey, fine to very fine grained, regularly laminated sandstone with dark, inter-laminae due to concentration of fine carbonaceous matter.

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SHEET No. 17

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				Some wavy, crinkly parallel laminae; rest of sequence very fine-grained and highly argillaceous/silty. And medium to dark grey sandstones with local slumped laminae and finely comminuted plant debris; locally showing cross-laminae; strongly calcareous throughout; broken stick, few coal spars.
	76.45	0.55		SANDSTONE: Light/medium grey, fine-grained, some thin bands of very fine-grained sands, sporadic ripples and lamination. Largely disturbed by bioturbation especially within top 0.15 m where isolated burrows are also evidenced; strongly calcareous, erosional at base; broken stick.
	77.87	1.42		SANDSTONE: Light grey, fine/medium-grained, cross-laminated and some might be ripple-drifting, generally very clean and well-sorted, few tiny muddy clasts, lower half cross-bedded, strongly calcareous throughout, fragmented at base, stick broken.
	78.18	(0.31)		CORE LOSS - ROCK

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SHEET No. 18

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	78.30	0.12		Fragmented pieces of sandstone showing black mudstone contact, pieces of hard very carbonaceous mudstone, ferruginous.	
	78.68	0.38		MUDSTONE: Black, hard, crusty with streaks of dull coal throughout, locally developing with bony coal especially in basal 0.15 m. Fragmented core and large pieces.	Top 0.28 m SN80/4/1/R1
				ROOF	basal 0.15 m SN80/4/2/R2
				COAL SEAM	
	78.80	0.12		MUDSTONE: Hard, dense, splintery and distinctly ferruginous, listricated surface, broken core.	SN80/4/1/R3
	78.89	0.09		COAL: Dull, with sparse and thin vitrinite laminae, large piece.	SN80/4/1/1
	78.93	0.04		MUDSTONE: Black, dense, carbonaceous, listric, one side ground, piece.	SN80/4/1/2
	79.03	0.10		COAL: Fragments of hard dull coal with sparse bright streaks.	SN80/4/1/3
	79.07	0.04		COAL: Dull and bright, cleaved, piece	

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SHEET No. 19

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	79.12	0.05		MUDSTONE: Dark grey/black, carbonaceous, coaly streaks, lustrated pieces.	SN80/4/1/4
	79.17	0.05		COAL: Badly fragmented what appears to be of hard dull coal (tiny pieces).	SN80/4/1/5
	79.28	0.11		MUDSTONE: Black, hard, characterized by ubiquitous fine layers of bright coal but essentially crusty mudstone.	SN80/4/1/6
	79.73	(0.45)		CORE LOSS - ROCK	
	80.00	0.27		MUDSTONE: Dark grey, slightly carbonaceous, plant debris, homogenously silty, broken stick.	
	80.50	0.50		SILTSTONE: Medium grey, very argillaceous, two zones, each about 9 cm thick, rich in very fine-grained sandstone lenticles and ripples and lower one of these calcareous, broken stick, very transitional at base.	
	80.90	0.40		MUDSTONE: Upper half dark grey, lower half (basal 0.11 m) black and highly carbonaceous, stick at top, broken core lower	basal 0.11 m SN80/4/1/7

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SHEET No. 20

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	81.10	0.20		COAL: Large pieces of dull lustrous coal with occasional bright laminae, but mostly streaks of bright throughout appears all hard coal.	SN80/4/1/8
	81.20	0.10		COAL: Dull banded, hard coal. There are four bright coal zones aggregating 4 cm in thickness. Two pieces.	=====
	81.35	0.15		COAL: A mixture of dull and dull lustrous coal, a 2 cm thick bright band near the top. Badly fragmented into small pieces.	=====
	81.48	0.13		COAL: Hard, dull lustrous and dull coal all fragmented and small pieces. Basal contact ground out.	SN80/4/1/10
	81.80	0.32		CORE LOSS - COAL	
	82.11	0.31		MUDSTONE: Dark grey, with abundant carbonized plant fragments and leaves, ferruginous, streaks of coal. Broken stick, competent.	
	82.36	0.25		MUDSTONE: Black, highly carbonaceous, stringers of coal,	

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SHEET No. 21

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				especially in the basal part. Fragmented and listricated.
	82.56	0.20		MUDSTONE: Medium to dark grey, locally silty, competent.
	82.87	0.31		SILTSTONE: Medium grey, very argillaceous, micaceous, lacking lamination, broken stick, gradational.
	82.99	0.12		MUDSTONE: Dark grey, highly silty and somewhat carbonaceous, broken stick, very gradual at base.
	83.14	0.15		MUDSTONE: Black, highly carbonaceous, minor discrete coal bands, broken core, transitional.
	83.19	0.05		COAL: Dull, lustrous, cleated, stick broken at base.
	83.22	0.03		COAL: Bony, hard, crusty, listricated at base.
2°	84.00	0.78		SILTSTONE: Medium grey, top 0.15 m very argillaceous, rooty and with plant fragments; lower half with fine laminae of very fine-grained sandstones, also rooty; broken stick, very transitional below.

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SHEET No. 22

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	86.99	2.99		SANDSTONE: Light/medium grey, generally very fine-grained, several silty mudstone bands totalling 20%, sands are mostly laminated, cross-laminated and some rippled. Occasional burrows, mud/sand contacts, mildly erosional, some closely-spaced banded/graded units. Strongly calcareous; broken stick.
	87.23	0.24		MUDSTONE: Black, carbonaceous, pieces and some ground out. Core Loss in this unit - 0.10 m.
				ROOF
				COAL SEAM
	87.31	0.08		COAL; Dull, very hard, although much bright laminae found, there appears to be finely dispersed muddy content, fragmented and a large piece.
	87.40	0.09		MUDSTONE/BONE COAL: With 2 cm thick bright coal band, broken, stick.
	87.51	0.11		COAL: Essentially dull, sub-lustrous, hard, only a few bright laminae, broken, stick.

SN80/4/2/1

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SHEET No. 23

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	87.63	0.12		COAL: Bright banded, heavily cleated, cleats parallel to near parallel to the core axis. Two pieces.	SN80/4/2/1 =====
	87.95	0.32		MUDSTONE: Black, carbonaceous, especially in top and bottom sequence; broken core and stick.	
	88.05	0.10		MUDSTONE: Black, richly carbonaceous and streaks and laminae of coal throughout, dull coal lens at base. Broken core.	
	88.99	0.94		MUDSTONE: Black, rare abundance of plant debris, leaf im- pressions, carbonaceous, lacking lamination, non-calcareous, abrupt but clean basal contact. Locally dense and breaking with conchoidal fracture. Stick, broken.	
	89.60	0.61		SILTSTONE: Dark grey, argillaceous laminae, discontinuous laminae and sparse in upper 0.30 m. Rest lacking lamination and darker, gradational, broken stick.	
	90.46	0.86		MUDSTONE: Black, richly carbonaceous and incorporating 4 cm thick coal band near the top. Core Loss in this unit - 0.45 m.	
	91.05	0.59		SILTSTONE/MUDSTONE: Upper half medium grey and essentially	

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SHEET No. 24

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				silty with sporadic lamination, remainder black, locally carbonaceous and strongly calcareous, patchily calcareous, broken core.
	91.95	0.90		SILTSTONE: Medium grey, topmost 0.18 m dark grey, highly argillaceous silts passing below to cleaner and coarser silts, all essentially devoid of lamination, perfectly transitional below. Stick
	92.67	0.72		SANDSTONE: Medium to light grey, very fine-grained, occurrence of muddy (silty layers commonly 1 cm thick) imperceptibly blending into sandy sequences and occasionally with sharp basal contact. Much burrowing evident (one good 7 cm zone). No lamination discernible, strongly calcareous, broken stick; transitional at base.
3°	93.93	1.26		SANDSTONE: Medium/light grey, generally fine-grained with frequently thin bands of very fine-grained sands and silts imparting the sequence thus a broadly banded appearance. Many isolated burrows seen, and fine parallel lamination (sparse), strongly calcareous, passage below by inter-bedding.

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BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE July 1980

SHEET No. 25

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
4 ^o	94.83	0.90		SANDSTONE: Light grey, fine/medium grained, clean, well-sorted, cross-bedded, slight dominance of cherts, calcareous, stick, very gradual coarsening below, few floating pebbles.
	97.00	2.17		SANDSTONE: Light grey, generally medium-grained, 0.25 m very coarse-grained to gritty sands 0.40 m from base. Very clean, cross-bedded, feebly calcareous, gradual. Stick broken.
	97.30	0.30		SANDSTONE: Medium grey, fine-grained, frequently dark grey/black laminae (due to finely broken carbonaceous debris). Rippled and cross-laminated, weakly calcareous, gradual.
	97.70	0.40		SANDSTONE: Medium grey, fine/medium grained, middle 0.15 m gritty with fine pebbles, one silty intraclast, core broken, gradual at base.
	100.89	3.19		SANDSTONE: Light grey, dominantly medium-grained, clean. Well-sorted, cross-bedded, 0.27 m fine grained sands, calcareous, broken stick. Core Loss in this unit - 0.25 m.

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BOREHOLE No. BP-4-80

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SHEET No. 26

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	101.79	0.90		SANDSTONE: Fine-medium-grained, light grey; several pebbly conglomerate zones, each about 4 to 5 cm thick and these associated with black mudstone intraclasts and coal spars, broken core.
	103.05	1.26		SANDSTONE: Light grey, top 0.54 m fine/medium grained, rest uniformly medium grained, with a few pebbles towards top, cross-bedded, clean, well-sorted, feebly calcareous, broken stick.
	103.63	0.58		CONGLOMERATE: Consisting of pebbles of pink, black and grey cherts and quartzites, up to 3.5 X 2.5 cm, with about 10-15% sandy/gritty matrix, appears siliceous; one pebble 5 X 2.5 cm; basal 0.12 m with abundant sands; broken stick.
5°	104.18	0.55		SANDSTONE: Light grey, medium to coarse grained, cross-bedded, very weakly calcareous, clean. Stick
	108.57	4.39		GRITSTONE/CONGLOMERATE: Predominantly gritty but with significant conglomerate bands; basal 0.98 essentially very finely pebbly with substantial sandy/gritty matrix and few

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COAL DIVISION

BOREHOLE No. BP-4-80 LOGGED BY Dr. Chowdry DATE July 1980 SHEET No. 27

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				coal spars. A few very coarse grained sandstones, aggregating 0.30 m in thickness, extremely feebly calcareous (perhaps due to incomplete silification of the carbonate detritus), otherwise would appear to comprise siliceous cementation.
	109.30	0.73		CONGLOMERATE: Pebbles of cherts and quartzite (minority) up to 5 X 3.5 cm quite common, 85 to 90% and rest matrix of fine-grained sandstone, one coal spar, siliceous, extremely well indurated, clean and abrupt contact at base, broken stick.
	110.67	1.37		MUDSTONE: Medium/dark grey, one silty zone (homogeneously) with tiny rootlets; 0.15 m hard crusty zone richly impregnated with specks of pyrite and 'zones' of unreplaced mudstone appear to be dark patches as if of pebbles of mudstone. Mudstones generally have grooved and polished linear surfaces and these apparently represent the plant debris along which the movement of mudstone occurred during compaction (no carbonization - plant matter decayed). Gradual at base, broken stick.

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SHEET No. 28

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	111.31	0.64		SILTSTONE: Medium grey, mostly clean and coarse-grained, siliceous, very little or no organic matter, gradual, stick.
	114.34	3.03		MUDSTONE: Medium/dark grey, locally claystone, abundant roots throughout, locally bleached or bentonitic texture (but not necessarily bentonitic); basal 0.54 richly silty, also rooty but entire sequence lacking lamination.
	117.01	2.67		MUDSTONE: Dark grey, very little plant matter but locally interval lamination seen; basal 0.85 medium grey and apparently has silty admixture and a vague suggestion of lamination. Broken stick.
6°	118.93	1.92		SILTSTONE: Light/medium grey, locally argillaceous but lacking vegetal matter, very strongly calcareous throughout, gradual, stick.
	119.98	1.05		SANDSTONE: Medium/light grey, very fine-grained, locally passing to coarse-grained silts, isolated ripples and cross lamination; basal 0.15 with closely spaced parallel lamination. Basal contact distinct, irregular and appears to

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SHEET No. 29

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				represent gradual filling up of irregular surface as the lamination starts right at the base of this unit. Very strongly calcareous throughout. Stick.
5°	121.13	1.15		SANDSTONE: Light grey, fine to very coarse-grained, abundant well-rounded tiny clasts (locally divided), laminated sporadically, much cherts in matrix, very strongly calcareous; it would appear to be due to detrital carbonate source, abrupt base; stick broken. Core Loss in this unit - 0.61 m.
5°	121.75	0.62		SANDSTONE: Top 0.35 m medium grey, very fine-grained, argillaceous and remainder fine-grained, light grey, with small-scale cross-lamination and ripple-drifting, very strongly calcareous, gradually coarsening at base. Stick.
	124.80	3.05		CONGLOMERATE: Pebbles dominantly of light coloured rocks, with variable pebble size but 4-6 cm quite common; higher 0.80 m has 20-25% gritty/sandy matrix and strongly calcareous. Rest calcareous (but mainly from cementation), basal contact very irregular. Broken stick.

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SHEET No. 30

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	125.28	0.48		SILTSTONE: Dark grey/black, extremely hard, has few pebbles in top 0.10 m, structureless, non-calcareous, erosional.
	134.80	9.52		CONGLOMERATE: Multi-coloured pebbles of cherts and quartzite, generally medium pebble range but 5-7 cm across not uncommon. Occasional strongly calcareous pebbles with relict sedimentary structures. These are throughout to be carbonite pebbles (unsilicified). Pebbles of pure white quartzite or quartz are also common. Conglomerates generally well-packed and matrix seldom exceeding 10 to 15% (basal 1.87 25-30%). Conglomerates sporadically calcareous throughout. Core Loss in this unit - 0.40 m.
	137.30	2.50		SANDSTONE: Top 0.15 m dark grey, highly argillaceous siltstones, rest medium grey, very fine-grained sandstones. Extremely hard. Basal 0.65 m very clean, siliceous; essentially quartzose with minor cherty component. One sandy interval (highly argillaceous) with a large carbonized root traversing 8 cm section. Abrupt basal contact. Broken core. Core Loss in this unit - 0.68 m.

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SHEET No. 31

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	147.00	9.70		CONGLOMERATE: By and large this zone has fine pebbles com- pounded with the upper sequence - substantial gritty zones; pebbles 4 - 5 cm across uncommon, vugs and cavities abun- dant, especially within the gritty sequences - might have resulted from packing of well-rounded and sorted grains. Overall about 50% of the interval might be gritstones, and the rest finely pebbly. Calcareous only very sparingly and apparently distinctly less so compared to the upper coarser interval. Basal 0.32 gritstone and the basal con- tact is rather abrupt with the carbonaceous mudstone. No current structures are evident. Broken stick. Core Loss in this unit - 1.08 m.
	147.18	0.18		COAL/CARBONACEOUS MUDSTONE: Topmost 1 cm black homogeneously carbonaceous mudstones with listric surface (the top side that is in contact with the Cadomin). Coal mostly is dull, hard, muddy with only a brief vitrinite band. Fragmented and listricated.
	147.90	(0.72)		CORE LOSS - COAL AND ROCK

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SHEET No. 32

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	148.14	(0.24)		CORE LOSS - ROCK
	149.15	1.01		MUDSTONE: Black, predominantly highly carbonaceous, locally thin band of hard dull coal, basal 0.28 m medium grey, with conchoidal fracture, silty and sporadically calcareous; broken core.
	149.60	0.45		MUDSTONE: Top half very carbonaceous, black with coaly streaks and layers, rest dark grey, highly listricated mudstone.
	149.82	0.22		MUDSTONE: Black, carbonaceous, rooted, core broken.
	151.60	1.78		MUDSTONE/SILTSTONE: Medium to dark grey, dominance of mud- stone, locally carbonaceous; top 0.96 m ferruginous and calcareous, silts argillaceous, generally lacking lamination; core broken.
	151.97	0.37		MUDSTONE/COAL: Sequence predominantly carbonaceous, hard, few bands of hard dull banded coal (aggregating 0.08 m), fragmented and very listricated zone.

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SHEET No. 33

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	153.24	1.27		MUDSTONE: Medium grey, locally very silty (or argillaceous siltstones), non-calcareous, lacking lamination, internally locally highly listricated, very gradational at base.
	154.23	0.99		SILTSTONE: Light/Medium grey, generally clean, structureless, non-calcareous, broken stick. Core Loss in this unit - 0.99 m.
5 ⁰	155.68	1.45		SANDSTONE: Medium grey, very fine-grained, locally highly argillaceous and silty, sporadically laminated, basal 0.4 m with small-scale cross-lamination and sporadically calcareous; broken core, distinctly darkening towards base.
	157.20	1.52		SANDSTONE: Top 0.36 m medium/dark grey, very fine-grained, highly argillaceous sandstone with ripples and small-scale cross-lamination and with small dark grey muddy intraclasts. Remainder dominantly medium to light grey, fine-grained with thin laminae of fine/medium grained sandstones. Top half of which with coal spars, predominantly cherty and calcite cemented; small-scale cross-lamination. Gradational at base.

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SHEET No. 34

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	160.22	3.02		SILTSTONE/MUDSTONE: Medium grey, broadly interbedded sequence of argillaceous siltstones and silty mudstones, slight overall dominance of silts, sporadic lamination, patchily calcareous; broken stick.
	160.76	0.54		SILTSTONE/SANDSTONE: Medium grey, dominance of silts, clean, sands very fine-grained, vague lamination, strongly calcareous; broken stick.
	66.26	5.50		MUDSTONE/SILTSTONE: Dominantly medium grey, some dark grey, predominantly muddy, and these sometimes carbonaceous, silts very argillaceous, occasionally rooty, interval calcareous mostly and lacking lamination; erosional at base. Locally slightly ferruginous; stick.
	66.97	0.71		SANDSTONE: Light grey, upper 0.5 m fine to very fine-grained, mostly clean, laminated, strongly calcareous, remainder fine to medium-grained, poorly sorted, coal spars, minor tiny intraclasts, strongly calcareous, erosional at base, broken stick.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	167.69	0.72		MUDSTONE: Mostly dark grey, silty and structureless, basal 0.30 m carbonaceous; very gradational at base.
	168.62	0.93		SILTSTONE: Light/medium grey, locally highly argillaceous, finely broken plant matter; middle 0.24 m dominantly very fine-grained sandstones, sporadic lamination and strongly calcareous throughout; broken stick.
	168.90	0.28		SILTSTONE: Dark grey, argillaceous, slightly ferruginous; gradational. Basal 0.08 m, medium grey and calcareous.
3 ^o - 4 ^o	172.20	3.30		SANDSTONE/SILTSTONE: Sandstone dominant (2/3rd), light/medium grey, very fine-grained, argillaceous, laminated and rippled and minor cross-lamination, occasionally bioturbated, strongly calcareous. Mudstone dark grey, very silty, gradational; broken stick. Core Loss in this unit - 0.92 m.
	173.72	1.52		MUDSTONE: Black, abundant carbonized plant matter, silty, (homogeneously), structureless; basal 0.15 m carbonaceous; broken stick. Core Loss in this unit - 0.22 m

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SHEET No. 36

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	175.03	1.31		SILTSTONE: Top 0.36 m dark grey and highly muddy with rootlets, remainder also rooty but with differentiated thin mudstone layers, structureless, calcareous, stick.
	175.87	0.84		SILTSTONE: Medium grey, locally very argillaceous, carbonized plant remains, vague occasional lamination, strongly calcareous. Stick. Bottom 0.13 m very finely sandy and rippled, burrowed.
	176.34	0.47		SANDSTONE: Light/medium grey, dominantly very fine-grained, locally rippled, top 10 cm with burrows, microerosional contacts between very fine sands and argillaceous silts, strongly calcareous throughout, erosional at base.
	177.40	1.06		SANDSTONE: Light/medium grey, fine-grained, (basal 0.43 m fine/medium grained), ubiquitously ripple-drifted and these characterized by regular dark grey to black laminae (due to inclusion of finely comminuted carbonaceous matter, much fine coal spars in basal 0.22 m, scoured base, strongly calcareous. Stick.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	178.51	1.11		SANDSTONE: Medium grey, very silty, broken plant debris and especially concentrated within 0.2 m ferruginous mudstone, basal 0.3 m black and locally highly carbonaceous, bony mudstone with dull coal intervals; this interval fragmented, listricated . Rest broken stick.
	178.66	(0.15)		CORE LOSS - COAL AND ROCK
	178.70	0.04		COAL SEAM: All the same fragmented into large and small pieces. Coal, dull, only fine and discontinuous bright strip.
	178.75	0.05		COAL: Dull banded, with 1 cm bright band at top.
	178.82	0.07		COAL, Dull uniformly, contact with coal below.
	178.86	0.04		COAL: Canneloid, smooth greasy texture.
	178.89	0.03		COAL: Dull, top ½ cm bright, attached below.
	178.95	0.06		COAL: Dull silimetalic lustre, minor vitrinite streaks

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SHEET No. 38

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				throughout, base fragmented.
	179.26	0.31		SILTSTONE: Dark grey to black, argillaceous, top 7 cm with abundant carbonaceous matter, locally rooty, stick.
	179.68	0.42		SILTSTONE: Medium grey, large carbonized debris, very slightly calcareous, gradational.
	184.00	4.32		SANDSTONE/SILTSTONE: 80% sand, rest silts; light grey to medium grey; sands very fine-grained, small-scale cross-lamination throughout, locally rippled. Interval characterized by slumping (some overturning of laminae), silty bands mostly with indented roof and floors suggesting these might be derived from massive disturbance of beds and their local transportation; suggestion of isolated burrows, strongly calcareous throughout, erosional at base. Broken core. Core Loss in this unit - 0.28 m:
	185.37	1.37		SILTSTONE/MUDSTONE: Medium/dark grey, broadly interlayered, but dominance of mudstones, silty, few burrows, lacking lamination, strongly calcareous, gradational. Stick.

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SHEET No. 39

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	186.57	1.20		MUDSTONE: Black, locally highly carbonaceous, silty zone (as dark laminae vaguely discernible), coal spars. Top 0.15 m calcareous, gradational at base; broken stick.
3 ⁰ - 5 ⁰	190.21	3.64		SILTSTONE/SANDSTONE: Medium grey, dominance of silts, sands about 30% and very fine-grained and seem to be confined to upper 2/3 of sequence. Whole unit characterized by frequent interbedding of silts and sands. Their boundaries seem to be erosional but the contacts are blurred due to intense burrow- ing and locally bioturbation; overall general fining of the sequence bottomward and there is good admixture of argill- aceous content and carbonized plant matter. Bottom 0.9 m with closely spaced wavy to ripple lamination. Strongly calcareous throughout; contact with coal clean and abrupt. The silt/sand sequence overall clean with sporadic fine slightly carbonized plant debris; broken stick.
	190.49	(0.28)		CORE LOSS - COAL
	190.70	0.21		COAL: All badly fragmented - appears a mixture of dominant dull lustrous and dull banded, appear clean coal.

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SHEET No. 40

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	191.62	0.92		MUDSTONE: Black, highly carbonaceous, numerous coal laminae, fragmented and some of the pieces grounded. Core Loss in this unit - 0.61 m.
	192.04	0.42		MUDSTONE: Top 0.16 m dark grey, cornflaked to listricated fragments; remainder black, rich in carbonized plant matter (20-25%), 2-3 cm of hard dull banded coal, fragmented.
	193.40	1.36		MUDSTONE/SILTSTONE: Medium/dark grey, dominantly muddy, brief silty layers, one with vertical 1/2 cm across sand-filled tube, mudstone with abundant carbonaceous debris, slightly ferruginous, broken stick; abrupt contact with coal below.
	193.55	0.15		COAL: Dull lustrous with frequent very thin vitrinite laminae. Grading below to carbonaceous mudstone, broken stick.
	194.20	0.65		MUDSTONE: Black, internal listrication, streaks of coal, top 2 cm hard, highly carbonaceous mudstone, contact with coal below, otherwise fragmented. Core Loss in this unit - 0.50 m.

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SHEET No. 41

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	194.27	0.07		COAL: Bright, cleated, basal 1 cm hard dull coal, fragmented, stick.
	195.08	0.81		MUDSTONE: Black, mostly carbonaceous, several 2/3 cm thick dull/bony coal bands, fragments of bright banded coal near the base; all internal fragmented, gradational.
5°	197.06	1.98		SANDSTONE: Light/medium brownish grey, very fine-grained, small-scale cross-lamination throughout (interspersed with thin dark silty laminae), 0.24 m black carbonaceous mudstone (0.32 m from top), followed by 0.28 m dark argillaceous siltstone; calcite vein filling fracture almost along three beddings or laminae; strongly calcareous (except mudstone layer); broken stick.
	197.34	0.28		MUDSTONE: Dark grey, dense texture, locally silty (as discrete layers), calcareous. Little or no carbonaceous content, broken core, very gradational at base.
	197.81	0.47		MUDSTONE: Black, highly carbonaceous with abundant carbonized plant debris, locally dull hard coaly bands, fragmented.

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SHEET No. 42

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	197.95	(0.14)		CORE LOSS - COAL AND ROCK	
	198.35	(0.40)		CORE LOSS - ROCK	
	198.45	(0.10)		CORE LOSS - COAL	
	198.69	0.24		COAL: Dull banded and dull lustrous, basal 0.08 m distinctly dull with thin but frequent vitrinite laminae; all fragmented.	SN80/4/5/1
	198.80	0.11		COAL: Mostly dull, hard, frequent vitrinite bands in the lower half, broken stick, abrupt basal contact.	SN80/4/5/2
4°	200.37	1.57		SILTSTONE: Medium/dark grey, very argillaceous, laminated. occasional ripples, and some carbonized plant matter, calcareous, minor calcite vein zone. Core Loss in this unit - 0.36 m.	
	201.90	1.53		SANDSTONE: Light/medium grey, dominantly very fine-grained, (basal 0.29 m fine-grained with some tiny coal spars), generally clean, vaguely cross-laminated. Strongly calcareous, one fracture almost parallel to lamination, sharp basal contact.	

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SHEET No. 43

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	202.16	0.26		SILTSTONE: Dark grey, highly argillaceous, much finely divided plant debris, ripples and lenticles of very fine-grained sandstone containing tiny muddy clasts - the tops and bottoms of these lenses irregular to disturbed; calcareous; fragmented base.
	202.59	0.43		MUDSTONE: Black, locally with large amounts of carbonaceous plant matter, and carbonaceous mudstone, silty and slightly ferruginous, fragmented, few pieces listricated.
5° - 6°	204.52	1.93		SANDSTONE: Medium grey, very fine-grained (top 0.21 m argillaceous siltstone), cross-laminated and rippled throughout, much microerosional contacts, dark silty laminae, local intraclasts of silty mudstone, strongly calcareous, erosional at base, broken stick.
	204.90	0.38		MUDSTONE: Black, dense texture, finely comminuted carbonaceous plant debris, pyrite specks; fragmented pelecypod shells, strongly calcareous, gradational.
	205.35	0.45		SANDSTONE: Medium grey, very fine-grained, abundant carbonized

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SHEET No. 44

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				leaf impressions, laminated, tiny ripples especially in basal 0.2 m, microerosional contacts, tiny clasts, sporadic burrows; very argillaceous bottomward, strongly calcareous, gradational. One fracture 45° core axis.
	206.23	0.88		MUDSTONE: Dark grey to black, locally cancelloid, silty bottomward, broken core, gradational at base. Core Loss in this unit - 0.29 m.
	207.05	0.82		SILTSTONE/MUDSTONE: Medium/dark grey, top half dominantly argillaceous siltstones with sporadic lamination and much slumping, lower half essentially mudstone, silty with vague occasional lamination, strongly calcareous throughout, basal contact fragmented but appears abrupt. Broken stick.
	207.20	0.15		SANDSTONE: Medium grey, very fine-grained, slumped structures, macerated carbonaceous matter, tiny silty intraclasts, strongly calcareous, fragmented at base.
	208.56	1.36		MUDSTONE: Black, locally dense, conchoidal fracture, much carbonized and finely divided plant debris; bottom 0.40 m

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SHEET No. 45

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				very silty with vague laminae and calcareous, gradual at base; broken core. Core Loss in this unit - 0.41 m.
	208.70	0.14		MUDSTONE: Black, very carbonaceous, numerous coaly bands, fragmented, abrupt at base, listricated.
5 ⁰	209.67	0.97		SANDSTONE: Top 0.25 m very fine-grained, highly argillaceous siltstone, grading below into fine to very fine-grained sandstone, cross-laminated, abundant tiny carbonaceous matter (some as spars), abundant tiny intraclasts of black carbonaceous mudstone within basal 0.1 m, strongly calcareous, abrupt at base; shears at 45 ⁰ to core axis. Broken stick.
	210.18	0.51		SILTSTONE: Top 7 cm black, hard and homogeneously carbonaceous mudstone, remainder richly argillaceous, medium grey, abundantly rooty siltstone, and root disturbed, gradational at base.
	210.72	0.54		SANDSTONE: Medium grey, very fine-grained, small-scale cross-laminations, some wavy parallel lamination. Argillaceous, silty laminae, one large rootlet evident, bottom 0.1 m

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Corey Bickford

DATE August 5, 1980

SHEET No. 46

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				calcareous, erosional at base, stick.
	211.85	0.13		MUDSTONE: Dark grey, locally black, dense, carbonaceous with abundant finely broken plant debris, silty throughout, and 0.1 m argillaceous siltstone with severe disturbance of laminae, strongly calcareous throughout, locally core split vertically, a few listricated fragments.
	211.89	0.04		MUDSTONE: Black, carbonaceous to canneloid, abundant very thin bright coal bands. Ground at base.
	212.32	0.43		MUDSTONE: Dark grey, listricated. Occasional roots and tiny plant fragments. Slightly carbonaceous in top 0.02 m. Abrupt. Patchily calcareous.
	212.52	0.20		MUDSTONE: Black, carbonaceous with scattered thin bright coal bands. Ground at base.
	213.39	0.87		MUDSTONE: Dark grey, silty. Plant fragments on bedding. Abrupt. Top 0.55 m strongly calcareous; remainder non-calcareous.

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SHEET No. 47

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
4 ⁰	214.00	0.61		SILTSTONE/SANDSTONE: Very fine to fine-grained (100:0 grading down to 50:50), interlaminated medium grey siltstone and light grey, rippled sandstone. Patchily calcareous towards base. Gradational.
	215.54	1.54		SANDSTONE: Medium-grained, clean, light grey, with thin silty phases. Vague low-angle cross-lamination. Scattered muddy intraclasts. Patchily moderately calcareous. Abrupt.
	216.68	1.14		SANDSTONE: Very fine to fine-grained, thinly bedded, with occasional silty laminae. Medium to small-scale low-angle cross-laminated. Moderately calcareous. Abrupt.
	217.85	1.17		SANDSTONE: Medium to very coarse-grained, clean, with scattered granules and small pebbles. Light grey, unlaminated at top, vague low-angle cross-lamination at base. Very weakly calcareous. Abrupt.
	229.50	11.65		SANDSTONE: Fine to coarse-grained, clean, vague low-angle cross-lamination; appears to be slumped at top. Local concentrations of small pebbles (max. 15 mm). Abrupt.

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SHEET No. 48

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	230.78	1.28		GRITSTONE: Composed of very coarse sand and granules. Clean with occasional coal spars. Abrupt. Patchily moderately calcareous.
	236.80	6.02		SANDSTONE: Fine to coarse-grained at top, overall fining downward to fine to very fine-grained at base. Clean, light grey, vaguely laminated. Occasional micaceous, carbonaceous laminae; rare coal spars, more common towards base. A few muddy intraclasts. Ground at base. Patchily moderately calcareous. Core Loss in this unit - 0.28m.
	236.87	0.07		MUDSTONE: Black, canneloid with 50% bright coal bands at top, grading to carbonaceous at base. Irregular basal contact; erosional?
	236.98	0.11		SANDSTONE: Very fine to fine-grained and silty at top; becoming medium to coarse-grained below, although still silty. Coal spars at top. Non-calcareous. Basal contact ground out.
	237.88	0.90		MUDSTONE: Dark grey to black, carbonaceous at top, becoming slightly carbonaceous at base. Abundant thin, bright coal

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SHEET No. 49

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				bands at top. Scattered plant fragments below; becoming silty at base. Gradational. Core Loss in this unit - 0.54m.
6°	238.95	1.07		SANDSTONE: Very fine-grained/SILTSTONE (50:50): Thinly interbedded and interlaminated light grey sandstone and medium to dark grey siltstone, some of which is argillaceous. Common slumps; locally with slickensided lamination. Common microerosional features at bases of sand laminae. Scattered plant fragments at top. Slightly calcareous at top, becoming moderately calcareous below. Abrupt.
	239.00	0.05		MUDSTONE: Black, carbonaceous, with thick bright coal bands.
	239.015	0.015		COAL: Bright, abundant pyrite crystals.
	239.03	0.015		PYRITE BAND: Carbonaceous mudstone, nearly totally pyritized.
	239.08	0.05		MUDSTONE: Black, carbonaceous with thick bright coal bands (Note - this coal/mudstone sequence may have been deposited in a delta-front swamp environment.)

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SHEET No. 50

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	240.00	0.92		MUDSTONE/SILTSTONE (50:50): Interlaminated dark grey silty mudstone and medium grey siltstone, with small ripples and scours. Occasional carbonaceous micaceous laminae. Unit is bioturbated near base, resulting in disruption of laminae. Non-calcareous.
	240.39	0.39		MUDSTONE: Dark grey to black, carbonaceous, with abundant tiny plant fragments. Abrupt.
	240.88	0.49		SANDSTONE: Very fine-grained/SILTSTONE/MUDSTONE (60:30:10 grading down to 0:40:60): Interlaminated, bioturbated light grey rippled sandstone, medium grey siltstone and dark grey silty mudstone. Gradational. Sands/silt's moderately calcareous; muds non-calcareous.
	241.33	0.45		MUDSTONE/SILTSTONE (80:20 grading down to 100:0): Dark grey, silty mudstone with thin laminae and lenticles of light grey sandy siltstone. Scattered tiny worm-burrows. Basal 0.13 m increasingly carbonaceous. Abrupt. Silt component patchily calcareous.

SN80/4/6/R

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SHEET No. 51

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	=====
		MEASURED	APPARENT		
	241.40	0.07		COAL: Dull, lustrous.	SN80/4/6/1
	241.47	0.07		COAL: Dull banded, lustrous.	
	241.49	0.02		COAL: Dull and bright, lustrous, with 0.005m fusain band.	
	241.53	0.04		COAL: Bright banded, lustrous.	
	241.54	0.01		COAL: Dull, lustrous.	
	241.57	0.03		COAL; Bright, stick. Ground at base.	=====
	241.70	0.13		CORE LOSS - COAL	SN80/4/6/2
	241.97	0.27		MUDSTONE: Black, carbonaceous, some thin bright coal bands. Scattered carbonized plant fragments. Stick.	
	242.10	0.13		CORE LOSS - ROCK	
	242.12	0.02		COAL: Dull banded, lustrous.	SN80/4/6/3

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SHEET No. 52

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	242.16	0.04		COAL: Dull, lustrous.	
	242.18	0.02		COAL: Dull, lustrous, slightly sheared. Stick.	
	242.21	0.03		COAL: Bright. Broken.	
					SN80/4/6/3
	242.23	0.02		COAL: Dull and bright.	
	242.30	0.07		COAL: Dull banded.	
	242.33	0.03		COAL: Dull, lustrous, sheared at base. Stick.	
	242.34	0.01		COAL: Dull lustrous.	
	242.36	0.02		COAL: Bright, sheared at base. Stick.	
	242.49	0.13		COAL: Bright, sheared, broken and broken stick.	
	242.61	0.12		COAL: Bright, sheared, friable. Stick.	
	242.64	0.03		COAL: Sheared and pulverized. Type indistinguishable.	

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SHEET No. 53

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
8 ⁰	244.45	1.81		MUDSTONE: Silty, grading down to SILTSTONE: Dark grey, silty mudstone within 0.38 m coarsening down to dark grey, argillaceous siltstone with occasional sandy phases. Locally abundant worm burrows. Lamination generally obscured or altogether obliterated. Locally some relict planar fining - upwards and ripple cross-lamination. Locally slumped. Some large carbonized plant fragments. Muds non-calcareous; silts and sands strongly calcareous. Gradational.
3 ⁰	245.81	1.36		SILTSTONE/SANDSTONE: Very fine-grained (70:30): Interlaminated, generally bioturbated, light grey sandstone and dark grey, argillaceous siltstone. Locally preserved lamination: thin planar laminae and rare ripples. Burrows both large and small. Slumped near base. Strongly calcareous. Abrupt.
	246.44	0.63		MUDSTONE/SILTSTONE(50:50): Interlaminated, bioturbated, dark grey silty mudstone and siltstone. Scattered plant fragments, some calcite-rimmed. Strongly calcareous. Abrupt.
	246.65	0.21		MUDSTONE: Black, carbonaceous, calcite veining at 65 ⁰ CA.

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SHEET No. 54

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				Abundant plant fragments, Broken stick.	
	246.80	0.15		COAL: Dull, lustrous/dull and bright; fragments mixed in core box.	SN80/4/7/1
	246.90	(0.10)		CORE LOSS - COAL	
	246.93	0.03		MUDSTONE: Black, carbonaceous, thin bright coal bands. Broken.	
	248.12	1.19		MUDSTONE: Dark grey, silty, with abundant plant fragments. Broken at top. Non-calcareous. Abrupt. Core Loss in this unit - 0.36 m.	
0°	249.15	1.03		SANDSTONE: Very fine to fine-grained, with abundant silty laminae. Ripple-drift cross-laminated. Rooty at top, also occasional roots throughout. Light grey. Patchily cal- careous; gradational.	
	250.11	0.96		SILTSTONE: Medium grey, with sandy phases. Locally abundant muddy laminae. Abundant plant fragments. Small-scale low-angle	

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SHEET No. 55

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				cross-laminated. From 0.44 m to 0.52 m mudstone, dark grey to black, carbonaceous, grading down to 1 cm of dull banded coal at base. Abrupt. Patchily calcareous at top.	
	250.25	0.14		MUDSTONE: Dark grey, very silty, carbonaceous at base; abundant large carbonized plant fragments.	
	250.47	(0.22)		CORE LOSS - COAL	SN80/4/8/1
	250.60	0.13		COAL: Dull banded, lustrous, broken.	
	251.63	1.03		MUDSTONE: Dark grey, rooty and listricated at top; silty at base. Scattered plant fragments. Broken at top. Non-calcareous; abrupt. Pyrite specks near top. Core Loss in this unit - 0.15 m.	
	252.80	1.17		SANDSTONE: Fine to medium-grained, becoming medium-grained at base. Top 0.15 m is very fine-grained with silty laminae; remainder of unit is clean, with vague large-scale lamination. Light grey. Occasional coarsely crystalline calcite at 70° CA. Slightly calcareous. Abrupt.	

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SHEET No. 56

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	253.29	0.49		SANDSTONE: Very fine-grained, with abundant silty laminae and ripple-drift cross-lamination. Coal spars at base. Some scours and slumping near top. Abrupt.
	254.36	1.07		SILTSTONE: Medium to dark grey, locally sandy. Thickly laminated. Becomes argillaceous in lower half. Moderately calcareous. Abrupt.
	255.06	0.70		MUDSTONE: Dark grey, very silty, black, carbonaceous mudstone from 0.10 m to 0.17 m below top. Non-calcareous; abrupt.
	255.58	0.52		SANDSTONE: Very fine-grained/SILTSTONE (50:50): Interlaminated and interbedded, light grey rippled sandstone and dark grey silty mudstone. Abundant vertical burrows. Basal 0.10 m includes 30% laminae of dark, grey mudstone. Moderately calcareous. Abrupt.
	255.98	0.40		MUDSTONE: Dark grey, silty in basal 0.09 m. Moderately calcareous, gradational.

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SHEET No. 57

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	259.34	3.36		SANDSTONE: Very fine-grained/SILTSTONE(60:40): Interbedded and interlaminated, light grey, ripple-drifted sandstone and medium to dark grey, locally argillaceous siltstone. A few small burrows. Some bedding-plane slickensides and calcite. Moderately calcareous. Abrupt.
	260.37	1.03		MUDSTONE/SILTSTONE(50:50 grading down to 100:0): inter-laminated dark grey silty mudstone and argillaceous siltstone. Moderately strongly calcareous at top, becoming weakly calcareous at base. Abrupt.
	260.80	0.43		MUDSTONE: Dark grey to black, carbonaceous, grades into black, canneloid mudstone in basal 0.04 m. Abrupt.
	264.68	3.88		SANDSTONE: Very fine-grained/SILTSTONE/MUDSTONE(40:30:30): Interbedded light grey, ripple-drifted sandstone, and dark grey argillaceous siltstone and silty mudstone. Sandstone show common low-angle cross-lamination. Unit is rooty and listricated at top, with a few thick bright coal lenses. Moderately calcareous.

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SHEET No. 58

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	265.48	0.80		SANDSTONE: Interbedded fine-grained clean sandstone and very fine-grained, silty, rooty sandstone. Locally medium-scale low-angle cross-laminated. Non-calcareous. Abrupt.
10°	265.65	0.17		SANDSTONE: Fine to medium-grained, light to medium grey, silty, low-angle cross-laminated. Non-calcareous. Quartz vein at base (75° CA). BASE OF BOX 88. TOP OF BOX 89.
	265.70	0.05		SANDSTONE: Medium grey, fine-grained, non-calcareous, SiO ₂ infilling along fracture planes, minor thin coal laminae (max 1 mm), thin even bedding, stick core, listricated surface at top.
	256.75	0.05		SILTSTONE: Dark grey to black, non-calcareous, listricated surface, scattered thin coaly laminations (max 3 mm), intraclasts muddy, scattered carbonized plant and rootlet debris throughout, bioturbated? Stick core, ground and worn at base.

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SHEET No. 59

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	267.53	1.78		SANDSTONE: Very fine-grained, grading down to fine at base, medium grey, non-calcareous, thin muddy laminations scattered throughout, listricated surfaces throughout, minor medium-grained sandstone bands in middle of section, slightly micaceous throughout.
	268.29	0.76		MUDSTONE/SILTSTONE: Medium grey, very silty to very fine-grained sandstone at top of section grading down to very silty mudstone at base, entire sequence is very gradual, abundant thin muddy dark grey laminae throughout, minor thin coarse laminae, non-calcareous, indescript bedding, broken stick core.
	268.46	0.17		MUDSTONE: Dark grey, non-calcareous, abundant listricated surfaces, abundant carbonized debris, abundant carbonized plant and rootlet impressions, muddy and dirty, slightly micaceous, broken stick core.
	268.49	0.03		SANDSTONE: Medium grey, medium to coarse-grained, massive undefined bleb like deposit (slumped?), non-calcareous, abundant bright coal debris, stick core.

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SHEET No. 60

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	268.62	0.13		MUDSTONE: Carbonaceous, dark grey to black, non-calcareous, listricated surfaces, abundant carbonized debris, abundant bright thin coaly laminae, broken and worn core.
	269.95	1.33		SILTSTONE: Medium grey, slightly calcareous, muddy and carbonaceous at top, abundant carbonized plant and rootlet impressions, minor listrication on surfaces, abundant thin muddy bands throughout, broken stick core.
	270.03	0.08		MUDSTONE: Carbonaceous, dark grey to black, non-calcareous, minor listricated surfaces, abundant carbonized debris, broken stick core, muddy.
	270.50	0.47		SILTSTONE: Medium grey, non-calcareous, very fine-grained sandstone laminae in part, scattered carbonized plant and rootlet impressions, minor bentonite throughout, scattered muddy bands throughout, broken stick core.
	270.66	0.16		SANDSTONE: Medium grey, very fine-grained, slightly calcareous in medium-grained section, minor carbonized debris throughout, trace thin coal laminae, bedding; cross-sets

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DATE August 7, 1980

SHEET No. 61

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				even, dip 11 ^o . Stick core.
	271.24	0.58		SILTSTONE/MUDSTONE: Medium to dark grey, slightly calcareous at base, siltier sequences at top and base, muddy, minor listricated surfaces, minor carbonized debris throughout, very thin bright coal laminae throughout, semi-conchoidal fracture. Broken stick core.
	272.17	0.93		SILTSTONE: Medium grey, very calcareous, thin muddy laminae throughout, muddy at base. Minor coaly plant and rootlet impressions throughout, semi-conchoidal fracture. Broken stick core.
	272.93	0.76		SANDSTONE: Medium grey, very fine-grained to argillaceous, abundant silty throughout, strongly calcareous, thin irregular bedding, cross-sets, cross-bedding, trace bioturbated, abundant massive silty bands throughout, minor listricated surfaces, mica flakes. Broken stick core.
	273.89	0.96		SILTSTONE: Medium grey, calcareous throughout, listricated surfaces in part, semi-conchoidal fracture, minor carbonized

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SHEET No. 62

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				debris scattered throughout, hard and dense and massive. Stick core to broken stick core.
	274.07	0.18		SANDSTONE: Medium grey, very fine- to fine-grained, abundant silty material throughout, scattered carbonized plant and rootlet impressions, strongly calcareous throughout, scattered coaly debris throughout, stick core, bedding; thin laminae with ripple and trough evidence.
	274.57	0.50		SILTSTONE: Medium grey, conchoidal fracture, non-calcareous, dense and massive, scattered thin muddy laminae throughout top and base. Stick core.
	275.08	0.51		SILTSTONE: Medium grey to black, very carbonaceous, abundant plant and rootlet impressions, scattered bright thin coaly laminae, muddy, core worn and broken.
	275.67	0.59		SANDSTONE: Medium grey to dark grey, very fine- to fine-grained, calcareous in part, calcite infilling along fractures. Silty bands throughout. Trace carbonized debris, very fine even bedding, trace plant and rootlet

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DATE August 12, 1980 SHEET No. 63

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				impressions throughout, bioturbated ? Stick core.
	276.01	0.34		SILTSTONE: Medium grey, strongly calcareous, semi-conchoidal fracture, minor carbonized root impressions. Stick core.
	276.17	0.16		SANDSTONE: Medium grey, strongly calcareous, very fine- to fine-grained, scattered carbonized debris, abundant silty bands throughout, bedding; slump with cross-sets and cross-bedding. Stick core.
	276.97	0.80		SILTSTONE: Medium to minor dark grey, calcareous at top, conchoidal fracture, massive, very fine sandstone laminae at base. Broken stick core.
	277.41	0.44		SANDSTONE: Medium grey, fine- to medium-grained, non-calcareous, mica flakes, thin bedded, even, cross-sets and cross-bedding, scattered silty bands and laminae throughout, slump bedding ? Stick core.
	283.63	6.22		SANDSTONE: Medium grey, calcareous throughout medium- to coarse-grained bands and dark medium- ance

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SHEET No. 64

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				of section fine- to medium-grained, minor small muddy clasts throughout, bedding even and parallel throughout, mica flakes, basically a clean unit. Dip 8-10°, broken stick and stick core to badly broken in part. Minor calcite infilling along fracture. Trace coaly laminae in part.
	283.88	0.25		SANDSTONE: Medium grey, coarse- to very coarse-grained, slightly calcareous, minor carbonized debris, calcite infilling along fractures, listricated surfaces, dirty broken core, grain size fine to very fine at base.
	284.70	0.82		SILTSTONE: Medium to dark grey with minor black, dirty, carbonaceous, listricated surfaces, abundant thin medium bright coal laminae. Non-calcareous, broken core. Core Loss in this unit - 0.31 m.
	284.89	0.19		SILTSTONE/SANDSTONE: Medium to dark grey, sandstone very fine to fine-grained, sandstone in bands and clasts surrounded by siltsone, bioturbated, slumped, minor calcite infilling along fractures. Stick core, non-calcareous.

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SHEET No. 65

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	285.52	0.63		SILTSTONE: Dark grey to black, very carbonaceous, abundant carbonized plant and rootlet impressions, scattered medium to bright thin coal laminae, very dirty, non-calcareous, listricated surfaces, greasy in parts, worn to very badly broken core. Core Loss in this unit - 0.32 m.
	286.14	0.62		SANDSTONE: Medium grey, very fine to fine-grained, silty in parts, very thin dark muddy laminae throughout, non-calcareous, massive bedding. Even, stick core.
	286.32	0.18		SANDSTONE: Medium grey, fine to medium-grained, muddy laminae throughout, mica flakes, calcareous, massive even parallel bedding. Dip $\approx 9^{\circ}$. Stick core.
	286.49	0.17		SILTSTONE: Medium grey, non-calcareous, conchoidal fracturing, minor dark grey muddy blebs throughout. Stick core.
	287.20	0.71		SANDSTONE: Very fine- to fine-grained, medium grey, scattered mica flakes, calcareous, calcite infilling along listricated fracture surface, thin even bedding. Minor cross-sets, thin muddy bands throughout. Dip $< 5^{\circ}$. Broken stick core.

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DATE August 12, 1980 SHEET No. 66

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	289.20	2.00		SILTSTONE: Dark grey to minor black, muddy throughout, carbonaceous, thin coal laminae throughout, calcite infilling along fractures, listricated surfaces, abundant coal debris throughout, non-calcareous. Badly broken core. Core Loss in this unit - 0.18 m.
	289.55	0.35		SANDSTONE: Medium grey, fine- to very fine-grained, mica flakes, thin dark grey bands throughout, minor carbonized debris in part. Stick core.
	289.93	0.38		MUDSTONE: Dark grey, very silty throughout, conchoidal fracture, listricated surfaces in part, abundant carbonized debris throughout, non-calcareous, thin calcite band at base. End of box 96. Top of box 97
3 ⁰ - 4 ⁰	292.52	2.59		SILTSTONE/SANDSTONE/MUDSTONE: Medium/dark grey, dominance of silts, rest very fine-grained argillaceous sands, locally rippled, some bioturbation, silts locally rooty, some slumping, calcareous, especially sandy zones, mudstones dark grey,

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 11, 1980 SHEET No. 67

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				structureless, gradational at base.
	295.46	2.94		SANDSTONE: Light/medium grey, top half dominantly very fine-grained, argillaceous, laminated and rippled, rest fine-grained, dominantly rippled, some parallel lamination and zone appearing banded, locally vertical burrowing, brief silty laminae. Strongly calcareous throughout. Tiny intra-clasts in basal 5 cm. A near-vertical fracture - clean and calcite encrusted traversing the middle 0.65 m. Broken stick.
				End of box 98.
				Beginning of Box 99.
	295.77	0.31		SANDSTONE: Light/medium grey, fine/medium-grained, vaguely laminated, clean, abrupt basal contact.
	296.21	0.44		MUDSTONE: Dark grey, very silty, carbonized plant debris. locally slightly carbonaceous, listric surfaces along bedding, gradational.
	296.73	0.52		SILTSTONE: Medium/dark grey, argillaceous, abundant broken

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BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 11, 1980 SHEET No. 68

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				carbonized plant debris, structureless, very gradational.
	298.12	1.39		SANDSTONE: Light grey, fine-grained, ubiquitous cross-lamination, ripple-drifted, few tiny intraclasts, generally clean and sorted, 0.15 m very fine-grained argillaceous sands, weakly calcareous. Sharp basal contact, broken stick.
	298.31	0.19		SILTSTONE: Dark grey, very argillaceous, laminated, gradational.
10 ⁰	306.04	7.73		SANDSTONE: Light medium grey, fine to medium-grained, some very fine-grained intervals in upper half aggregating 0.28 m; sequence generally clean and sorted, rusty intraclasts and a well-developed 0.2 m zone with large-size siltstone cherts with lamination, cross-bedded throughout. Some ripples in upper 2.2 m, calcareous throughout; calcite-filled fracture (along bedding at base), also 0.54 m above base; broken stick. Core Loss in this unit - 0.25 m.
	307.20	1.16		SILTSTONE/MUDSTONE: Dark grey to black, upper half dominantly silty, lower half muddy (bottom .15 m dense), slightly

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BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				ferruginous. 0.1 m very fine sands and burrowed; one 8 cm
				deep sand-filled burrow near the top, gradational, broken
				stick.
	308.90	1.70		MUDSTONE/SILTSTONE: Top 0.26 m black mudstone with abundant
				carbonized plant debris and topmost 6 cm. canneloid, rest
				siltstones with argillaceous laminae, weakly calcareous,
				very gradational at base, broken stick. Core Loss in this
				unit - 0.35 m.
5° - 7°	309.62	0.72		SANDSTONE: Light/medium grey, very fine-grained, cross-
				laminated and rippled (some clean laminae), calcareous,
				scoured basal contact; listric surfaces.
	310.20	0.58		MUDSTONE: Dark grey, highly silty, some plant fragments,
				lacking lamination, broken stick.
	310.77	0.57		MUDSTONE: Black, mostly very hard, some canneloid, abundant
				finely comminuted carbonized plant matter. Stick, gradational
				at base.

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DATE August 11, 1980

SHEET No. 70

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	311.29	0.52		SILTSTONE: Dark grey, top half highly argillaceous/car- bonaceous, vaguely laminated towards base, stick.
	311.56	0.27		SANDSTONE: Medium grey, very fine-grained, laminated, argillaceous, burrowing, calcareous, gradational base. Cal- careous.
	313.34	1.78		SILTSTONE/MUDSTONE: Upper half predominantly argillaceous siltstone, rest dark grey to black mudstone, broken stick.
	313.94	0.60		MUDSTONE: Black, highly carbonaceous, hard, also abundant carbonized plant matter, locally slightly ferruginous.
	314.98	1.04		SILTSTONE: Medium grey, top half highly argillaceous, rooty, remainder with some cross-lamination, few burrows, thin, very fine-grained sandstone interbeds, calcareous towards base. Broken stick.
	315.93	0.95		SILTSTONE/SANDSTONE: Medium grey, frequently interbedded, sands very fine-grained, laminated, argillaceous, micro- erosional surfaces, some intraclasts, calcareous, erosional

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				at base. Stick.
	317.88	1.95		SANDSTONE: Light grey, medium-grained, clean, well-sorted, cross-bedded, occasional rusty intraclasts, predominance of cherts, weakly calcareous, listric surfaces, basal 0.4 m with frequent laminae of very fine-grained sandstones, abrupt at base.
	318.20	0.32		SANDSTONE: Light grey, very fine-grained, rippled throughout, very clean, calcareous; gradational at base.
6°- 8°	322.10	3.90		SANDSTONE: Light grey, medium-grained, generally well-sorted, well-washed, cross-bedded although some intervals devoid of it, weakly calcareous, scoured at base, one large rusty clast; dominance of cherts, one coal spar. Core Loss in this unit - 0.14 m.
	323.21	1.21		SILTSTONE: Medium grey, argillaceous, a few thin sandy laminae bottomward, calcareous, gradational.
8°- 9°	323.90	0.59		SANDSTONE: Medium grey, very fine-grained; frequent silty

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				laminae, rooty in top 0.22 m, erosional at base, broken stick.
	324.03	0.13		SILTSTONE: Medium grey, laminated, thin very fine-grained sandy layers, slightly calcareous, stick.
	324.60	0.57		MUDSTONE: Black, locally highly carbonaceous, carbonized plant matter, silty towards base; fragmented core. Core Loss in this unit - 0.14 m.
4° - 6°	326.70	2.10		SILTSTONE/MUDSTONE: Medium grey, slight dominance of silt content; sequence characterized by frequent thin laminae and layers of very fine-grained sandstone. basal 0.25 m canneloid mudstone: strongly calcareous (except the basal mudstone). Broken stick.
	328.03	1.33		MUDSTONE: Black, highly carbonaceous, thin coaly layers, two thin sandy layers (very fine-grained). Abundant carbonized plant debris; fragmented core, very transitional. Core Loss in this unit - 0.36 m.
	328.30	0.27		SILTSTONE: Dark grey, top half carbonaceous, richly argillaceous,

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				lustricated fragments; gradual at base.
	328.45	0.15		SANDSTONE: Medium grey, very fine-grained, cross-laminated and rippled throughout, thin silty laminae, calcareous. Broken stick.
	329.43	0.08		SILTSTONE: Medium grey, argillaceous, lacking lamination, slightly calcareous, fragmented at base.
	331.59	2.16		MUDSTONE: Dark grey/black, locally carbonaceous and carbonized plant debris; 0.37 m siltstone bed and rooty, two calcite fractures, non-calcareous, basal 0.28 m highly silty and medium grey, erosional. Stick.
	332.38	0.79		SANDSTONE: Medium grey, very fine-grained, very argillaceous, disturbed laminae, sporadically burrowed, weakly calcareous, gradual.
6° - 8°	338.92	6.54		SANDSTONE: Light/medium grey, upper 3 m fine/medium-grained, remainder fine-grained, clean and well-sorted with a given interval, cross-bedded and cross-laminated, one

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				interval with thin dark laminae, a few isolated burrows, a few discrete silty/muddy bands, calcareous, sharp basal contact. Core Loss in this unit - 0.20 m.	
	339.20	0.28		MUDSTONE: Dark grey, silty, lacking lamination, gradational	
	339.53	0.33		SANDSTONE: Medium grey, richly argillaceous, very fine- grained, much burrowing resulting in local obliteration of laminae, weakly calcareous, gradational.	
	340.00	0.47		SANDSTONE: Medium grey, a little over top 1/3 fine-grained, dark laminated and burrowed, middle 1/3 fine-grained but locally with very thin laminae of fine/medium-grained sands, basal sequence (0.11 m) medium-grained, clean sands. Abrupt basal contact.	
	340.37	0.37		COAL: Badly fragmented, sheared, listricated, generally appears to be low ash coal.	SN80/4/9/1
	340.76	0.39		MUDSTONE: Medium grey, silty, structureless, gradational Core Loss in this unit - 0.21 m.	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	341.74	0.98		SILTSTONE: Medium grey, richly argillaceous, frequent very thin laminae of very fine-grained sands, laminated, much burrowing, calcareous; two thin fracture zones, gradual.
8°	342.32	0.58		SANDSTONE: Medium to dark grey, very fine-grained, silty layers, sparsely rippled, mildly disturbed laminae, calcareous, passage by interbedding.
10°	345.20	2.88		SANDSTONE: Predominantly medium grey and fine-grained. Top 0.75 m has several dark grey siltstone layers and 6 cm fracture zone mineralized with calcite. 0.11 m medium-grained zone towards base. Sequence sparsely laminated, few burrows, widely dispersed tiny clasts, calcareous throughout, fracture at 343.16, dominance of cherts, local very thin seams of carbonaceous matter. Broken stick.
	345.63	0.43		MUDSTONE: Medium grey, silty, some carbonized plant debris, structureless, very gradational at base.
	345.79	0.16		SANDSTONE: Medium grey, very fine-grained, laminated, calcareous, gradational.

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SHEET No. 76

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	346.17	0.38		SILTSTONE: Medium grey, very argillaceous, vaguely discontinuous lamination, transitional. Stick.
	346.90	0.73		SANDSTONE: Medium grey, very fine-grained, argillaceous, 0.10 m disturbed siltstone band with erosional top, sporadic burrowing, calcareous, transitional at base. Core Loss in this unit - 0.17 m.
	349.85	2.95		SILTSTONE: Medium/dark grey, locally highly argillaceous, upper ¼ with frequent laminae of very fine sand which generally grade to silts and muds, isolated rippling, 15-18% mudstones, patchily calcareous, gradual at base.
	350.40	0.55		SANDSTONE: Medium grey, dominantly very fine-grained, silty, small gradational zones, locally slightly disturbed laminae, ripples; strongly calcareous, gradual.
	350.55	0.15		MUDSTONE: Dark grey, lacking lamination, gradational.
	350.61	0.06		COAL: Dull, lustrous, fragmented base.

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SHEET No. 77

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	351.26	0.65		MUDSTONE: Black, abundant carbonized plant debris, silty, internal lustrification, gradational.
10 ⁰	351.81	0.55		SANDSTONE: Medium grey, very fine-grained, highly argillaceous and silty, much syndepositional disturbance, disseminated finely divided carbonized matter, calcareous, gradational at base.
	352.16	0.35		SILTSTONE: Medium grey, argillaceous laminae, calcareous.
	353.20	1.04		MUDSTONE/SILTSTONE: Medium grey, top half silty mudstone, remainder argillaceous silts, lacking lamination; some carbonized plant debris; transitional. Core Loss in this unit - 0.24 m.
	353.60	0.40		SANDSTONE: Medium grey, very fine-grained, frequent silty laminae, a few burrows, clean contact at base. Calcareous, broken stick. Core Loss in this unit - 0.07 m.
	354.43	0.83		MUDSTONE: Medium/dark grey, finely broken carbonaceous matter, locally very silty and differentiated as silts, 4 cm band

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SHEET No. 78

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				carbonaceous mudstone in middle of interval (adjacent to a calcite-filled fracture - partly vuggy); gradational.
	355.10	0.67		SANDSTONE: Medium grey, very fine-grained, vaguely laminated and rippled, top and bottom highly argillaceous, isolated burrows, strongly calcareous, fracture towards base. Stick.
				End of Box 118
	355.83	0.73		SILTSTONE: Dark grey, massive. 0.02 m calcite and slickensides (70° CA) near top. Weakly calcareous at top, increasing to moderately at base.
	356.00	0.17		MUDSTONE: Dark grey to black, carbonaceous, scattered plant fragments.
	356.48	0.48		MUDSTONE: Dark grey, silty, very silty at top. Scattered plant fragments. Gradational.
	356.53	0.05		MUDSTONE: Dark grey to black, carbonaceous.

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SHEET No. 79

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	356.60	0.07		COAL: Bright.
	356.73	0.13		MUDSTONE: Black, canneloid. Slightly sheared and listricated at top. Abundant very thin bright coal bands.
	356.86	0.13		MUDSTONE: Black, carbonaceous, some thin and thick bright coal bands.
	357.11	0.25		MUDSTONE: Silty, grading down to SILTSTONE/SANDSTONE; Very fine-grained (50:50): Dark grey, silty mudstone, passing down to dark grey siltstone with slumped and burrowed laminae of light grey sandstone. Plant fragments at top. Moderately to strongly calcareous.
	357.64	0.53		MUDSTONE: Dark grey, silty, carbonaceous, abundant carbonized plant debris. Gradational.
15 ^Q	359.58	1.94		MUDSTONE: Dark grey, very silty, burrowed with siltstone laminae, near base. Patchily calcareous. Core Loss in this unit - 0.46 m.

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SHEET No. 80

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	359.60	0.02		MUDSTONE: Black, carbonaceous to canneloid, abundant bright coal bands. Stick.	
					=====
	359.64	0.04		COAL: Dull, lustrous, sheared, stick.	SN80/4/10/1
	359.68	0.04		COAL: Dull, lustrous.	
	359.69	0.01		COAL: Bright	
	359.70	0.01		COAL: Dull, lustrous. Stick.	
	359.79	0.09		COAL: Dull banded, lustrous. Stick.	
	359.88	0.09		COAL: Dull and bright, lustrous. Broken stick.	
	359.91	(0.03)		CORE LOSS - COAL	
	359.93	0.02		COAL: Bright	=====
	360.00	0.07		MUDSTONE: Black, canneloid, abundant very thin bright coal bands.	

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SHEET No. 81

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	360.73	0.73		SANDSTONE: Very fine-grained, light grey; silty, particularly at top. Rippled at base. Patchily calcareous. Abrupt. Stick.
	361.04	0.31		SILTSTONE: Dark grey, argillaceous phases; massive-looking with possible burrows. Non-calcareous; gradational.
	363.45	2.41		SILTSTONE/SANDSTONE, very fine-grained/MUDSTONE: Interbedded and interlaminated, locally intensely bioturbated. Light grey silty sandstone, medium grey siltstone, and dark grey silty mudstone. Sandy phases commonly rippled. Locally abundant burrows. Slickensides and calcite (85° CA) at 0.51; partially calcite-recemented breccia from 0.64 to 0.70; slickensides and calcite (70° CA) at 0.91; slickensides and calcite (70°- 90° CA) at 0.97. Moderately to strongly calcareous. Abrupt.
	363.71	0.26		SILTSTONE/MUDSTONE(50:50): Interlaminated, slumped argillaceous siltstone and silty mudstone; carbonaceous in basal 0.05 m. Abrupt.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	363.78	0.07		MUDSTONE: Black, carbonaceous, silty, slightly listricated. Abundant plant fragments. Some thick bright coal bands. Abrupt, sheared.
	363.81	0.03		COAL: Dull, lustrous.
	363.86	0.05		MUDSTONE: Black, carbonaceous, gradational.
	364.17	0.31		MUDSTONE: Dark grey to black, silty, abundant carbonized plant fragments. Locally listricated, rooty. Calcite associated with larger plant fragments. Base of Box 121 Top of Box 122
5°	365.00	0.83		MUDSTONE: Dark grey/black, silty, abundant carbonized plant debris, lacking lamination, calcite-filled fracture at top; broken stick.
	367.30	2.30		SILTSTONE: Medium grey, sporadically argillaceous, finely broken. Carbonaceous plant debris, calcareous; few lenses of very fine-grained sands; broken stick: Core Loss - 0.25 m.

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SHEET No. 83

COM BCA*	DEPTH m (GEOH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	367.85	0.55		MUDSTONE: Black, carbonaceous, broken and carbonized plant debris, listricated, tiny calcite fracture; broken core, silty at base.
	369.33	1.48		SILTSTONE: Dark grey to black, highly argillaceous, top 0.18 m with abundant very fine-grained sand lenses (appear to have resulted from collapse of soft sediments (witness their highly irregular outlines and "inclusion" of mudstones lithology). Lower 0.30 m black with abundant finely broken and carbonized plant matter; gradational below, broken stick.
	371.11	1.78		SANDSTONE: Medium grey, very fine-grained, much argillaceous/silty laminae and layers, sporadic cross-lamination. Some tiny ripples, sporadic burrowing, calcareous, broken stick.
7° - 8°	372.03	0.92		SILTSTONE: Medium grey, argillaceous, 0.30 m top sequence very finely sandy with mildly disturbed laminae and few burrows, calcareous at top, gradational; broken core.

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SHEET No. 84

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	375.22	3.19		SANDSTONE: Light/medium grey, dominantly very fine-grained, silty bands in certain intervals, abundant cross-lamination, some darker laminae; 0.45 m siltstone bed, sparse burrows throughout, calcareous, gradational, broken stick.
	376.24	1.02		MUDSTONE: Dark grey, very silty and tiny layers of sand, occasionally vaguely banded; broken stick.
	377.22	0.98		MUDSTONE: Top half black, carbonaceous, fragmented (pieces highly listricated), remainder dark grey, highly silty with finely broken plant debris, several shears. Basal contact fragmented.
	381.35	4.13		SANDSTONE: Light/medium grey, fine/medium-grained, dominance of cherts, generally well-washed and well-sorted, cross-bedded throughout; basal 0.32 m with coal spars, sporadically weakly calcareous, large calcite filled fractures near-parallel to core axis. Abrupt and listricated basal contact. Broken stick. Core Loss in this unit - 0.80 m.
	381.60	0.25		MUDSTONE: Dark grey, top 2 cm carbonaceous, very silty

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SHEET No. 85

COM BCA*	DEPTH m (GEOH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				lower half, gradational.
	382.35	0.75		SANDSTONE: Top 0.10 m medium grey, highly argillaceous, very fine-grained, vaguely discernible cross-lamination, micro-erosional contacts, few burrows; remainder fine-grained, clean sandstones, cross-laminated, calcareous, a large near-vertical fracture. Erosional at base.
	382.89	0.54		MUDSTONE: Black, mostly carbonaceous, 4 cm sheared coal 0.14 m from base, gradational; fragmented core.
8°- 9°	384.01	1.12		SANDSTONE: Medium grey, very fine-grained, frequently inter-laminated with thin siltstone layers and generally the passage is one of gradation (graduating to muddy laminae), tiny ripples and small-scale cross-lamination is found throughout. Calcareous, very gradational, broken core.
	387.50	3.49		MUDSTONE: Dark grey/black, locally very silty, a small sandy band ; basal 0.80 m locally highly carbonaceous and bands of hard dirty coal, much finely broken plant debris (carbonized). Broken stick and fragmented core.

Core Loss in this unit - 0.51 m.

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SHEET No. 86

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	387.90	0.40		SILTSTONE: Medium grey, highly argillaceous, plant fragments, devoid of lamination. Broken stick.
	388.22	0.32		MUDSTONE: Black, carbonaceous to thin coaly bands, fragmented. Core Loss in this unit - 0.20 m.
	389.07	0.85		MUDSTONE: Top half medium grey, silty, remainder black with some dirty ^{coal} bands, gradational. Broken core.
	391.20	2.13		SILTSTONE: Medium/dark grey, middle section very argillaceous, carbonized leaves, some rewetting (presumably by plants). Basal 0.38 m with frequent very fine-grained sandy lenses and ripples, calcareous throughout, gradational. Stick.
	391.56	0.36		MUDSTONE: Dark grey, breaks with conchoidal fracture, carbonaceous basal section, calcareous, gradational.
	392.72	1.16		SILTSTONE: Medium grey, argillaceous, calcareous, rooty, vaguely discernible local lamination, 0.25 m dark grey mudstone, 0.20 m from base.

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SHEET No. 87

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	395.81	3.09		SANDSTONE: Light grey, fine-grained, vague to absent lamination, generally clean, calcareous, tiny coal spars in basal 0.10 m, erosional below, one large vertical fracture (no mineralization), one mineralized fracture (along bedding).
	395.94	0.13		MUDSTONE: Black, carbonaceous, silty at base, erosional.
	396.58	0.64		SILTSTONE: Medium grey, abundantly argillaceous, laminated, lenses and layers of very fine-grained argillaceous sandstones, patchily calcareous, gradational.
	396.67	0.09		MUDSTONE: Upper half medium grey, silty carbonized lenses, grading below to black hard carbonaceous mudstone with streaks of coal throughout, contact with coal(below). Lustricated.
	396.81	0.14		COAL: Broken stick to highly fragmented. Coal: dull banded and dull and bright.
	396.87	0.06		COAL: Dull lustrous, banded.

M 4/11/1

BOREHOLE PAGE

BP CANADA
COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 1980

SHEET No. 88

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	396.90	0.03		COAL: Dull and with minor bright band.
	396.95	0.05		COAL: Dull and bright.
	397.01	0.06		COAL: Bright banded. Contact of coal at base listricated and somewhat grounded.
	397.12	(0.11)		CORE LOSS - COAL AND ROCK
	397.24	0.12		MUDSTONE: Dark grey/black, top few cm very carbonaceous, very silty bottomward. Broken stick.
	397.60	0.36		SILTSTONE: Dark grey, very argillaceous, carbonaceous specks, devoid of lamination, very gradational.
	399.68	2.08		SANDSTONE: Light grey, dominantly very fine-grained, cross-laminated throughout, some wavy-ripple lamination, brief silty laminae, calcareous.
10°	400.70	1.02		SANDSTONE: Light grey, medium-grained (0.12 m very fine-grained), clean and well-sorted, vaguely cross-laminated.

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BP CANADA
COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 1980

SHEET No. 89

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				Few silty/rusty intraclasts, calcareous, erosional at base. Core Loss in this unit - 0.11 m.
	400.82	0.12		MUDSTONE: Dark grey, dense, hard, ferruginous, listricated, gradational.
	401.20	0.38		SILTSTONE: Medium grey, tiny plant fragments, argillaceous at top, very gradational. Stick core.
	401.61	0.41		SANDSTONE: Medium grey, very fine-grained, cross-laminated but locally blurring of laminae due to repeated burrowing, weakly calcareous, gradational.
	402.22	0.61		SANDSTONE: Light grey, fine/medium-grained, one band of fine-grained sands, cross-bedded, tiny coal spars, generally clean and sorted, strongly calcareous, sharp basal contact; broken stick.
	402.38	0.16		SANDSTONE: Medium grey, very fine-grained, cross-laminated and rippled, top 2 cm mudstone. Sandstone strongly calcareous. Erosional at base.

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 1980

SHEET No. 90

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
5 ⁰	403.62	1.24		SILTSTONE/MUDSTONE: Medium grey, top half dominantly silty with frequent thin laminae of very fine-grained sandstone. Remainder silty mudstone, basal 0.22 m black and slightly carbonaceous. Erosional at base. Broken stick.
	404.90	1.28		SANDSTONE: Dominantly medium grey and very fine-grained, numerous thick siltstone bands, discontinuous lamination, much syndepositional slumping, vertical sand-filled burrows (within silty lithology or sandstones but admixed with finer fractions), gradational to erosional contacts. Moderately to strongly calcareous, broken stick.
	405.13	0.23		MUDSTONE: Dark grey, silty, basal 0.05 m carbonaceous with coal bands, fragmented at base.
	405.19	0.06		COAL: Dull and dull lustrous banded, fragmented.
	405.85	0.66		MUDSTONE: Medium/dark grey, silty, structureless, erosional.
	410.31	4.46		SANDSTONE: Medium grey, very fine-grained, frequently grading to siltstones, also numerous discrete muddy/silty

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 1980

SHEET No. 91

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				bands, interval rippled and cross-laminated and a substantial
				amount of it slumped (steeply) burrows; sands generally
				argillaceous; minor graded intervals punctuated by zones
				with micro-erosional contacts. Strongly calcareous
				throughout, broken stick. Core Loss in this unit - 0.24 m.
	410.70	0.39		MUDSTONE: Dark grey, homogeneously silty, finely comminuted
				fragments of plants, irregular basal contact.
	411.70	1.00		SANDSTONE: Medium grey, very fine-grained, 7 cm thick
				dark grey siltstone layer, rippled, lamination highly
				clastic due to slumping, muddy/silty bottomward, isolated
				burrows. Strongly calcareous, erosional base.
	412.46	0.76		MUDSTONE: Dark grey to black, top 0.1 m very silty, rest
				moderately silty with abundant finely broken plant debris.
				Gradational at base.
	413.26	0.80		SILTSTONE: Dark grey, small-scale cross-lamination, thin
				argillaceous laminae, finely divided carbonaceous plant
				debris; slightly disturbed laminae by roots; broken stick.

Core Loss in this unit - 0.40 m.

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BOREHOLE No. BP-4-80

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DATE August 1980

SHEET No. 92

COM BCA*	DEPTH. m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	413.60	0.34		MUDSTONE: Black, homogeneously silty, finely macerated carbonaceous matter in addition to larger fractions, slightly ferruginous, listric surface. Gradational at base.
2 ⁰ - 3 ⁰	414.48	0.88		SANDSTONE: Medium grey, very fine-grained, silty, cross-laminated and rippled, abundant silty laminae, sporadically burrowed, intervals with disturbed laminae (syn-depositional). Calcareous, gradual.
	416.60	2.12		SANDSTONE: Light/medium grey, dominantly fine-grained but brief intervals straddle very fine grade as well as fine/medium grade, low-angle cross-bedding to small-scale cross-lamination, few silty(dark grey) intraclasts but these are particularly concentrated within basal 0.10 m zone; sorting good within a given interval, calcareous throughout, one calcite-filled fracture zone (2 cm thick); highly scoured and channelled basal contact. Broken stick. Core Loss in this unit - 0.40 m.
	416.81	0.21		SILTSTONE: Medium/dark grey, highly argillaceous, locally very carbonaceous with streaks of bright coal; gradational

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 1980

SHEET No. 93

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
5 ⁰	417.68	0.87		SANDSTONE: Medium grey, essentially very fine-grained rippled and cross-laminated but top 2/3 section with abundant burrowing and obliteration of lamination, strongly calcareous; passage by interbedding. Broken stick.
	418.02	0.34		SILTSTONE: Dark grey, top half richly argillaceous, rest slightly argillaceous, sporadic discontinuous lamination, calcareous, gradational.
	418.45	0.43		SANDSTONE: Medium grey, very fine-grained, argillaceous, sparsely laminated and rippled, brief silty laminae, calcareous, very gradual at base.
	418.54	0.09		SILTSTONE: Dark grey, argillaceous, calcareous, transitional.
	419.70	1.16		SANDSTONE: Medium grey, top 0.40 m essentially very fine-grained sandstone or coarse siltstone with substantial amount of silty mudstone, remainder frequently interbedded silts and sands (very fine-grained and predominant), few burrows, mostly rippled, calcareous. Very gradational.

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY Dr. Chowdry

DATE August 1980

SHEET No. 94

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				Broken stick. Core Loss in this unit - 0.25 m.
	420.18	0.48		SILTSTONE: Dark grey/black, abundantly argillaceous and with large amount of finely broken carbonaceous matter uniformly dispersed throughout matrix, interval fragmented; ferruginous basal 0.15 m.
	422.10	1.92		MUDSTONE: Top 0.2 m black, carbonaceous, with 3 cm thin clean coal. Rest medium grey; very uniform looking, silty (homogeneously), broken plant debris, singularly devoid of lamination, gradational. Broken stick.
6°- 8°	423.35	1.25		SILTSTONE: Medium grey, argillaceous, much very fine-grained sandy laminae (also 0.25 sandstone zone), much blurring of laminae because of presumed bioturbation, weakly calcareous. Broken stick. Gradational.
	423.82	0.47		SANDSTONE/SILTSTONE: Medium/dark grey, frequently inter-bedded very fine-grained argillaceous, laminated sandstone with abundant burrows and dark grey argillaceous siltstone; much slumped lamination, calcareous throughout, broken stick.

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY P. Lee

DATE August 12, 1980 SHEET No. 95

COM BCA*	DEPTH. m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	424.54	0.72		SANDSTONE: Very fine to fine-grained, medium grey, with long and dark interbeds, strongly calcareous, abundant silty interbeds, calcite infilling along fracture surface, bedding; very irregular to thin even 11 lamination, irregular parts being slumped & high energy as in ripple and wave bedding, cross sets, cross-bedding, dip $\approx 25^{\circ}$; broken stick core.
	425.31	0.77		SANDSTONE/SILTSTONE: Medium grey, sandstone very fine-grained, dark grey siltstone laminations, calcareous in part, minor calcite laminae, bioturbated?, irregular bedding; slumped with cross-sets, dirty, minor muddy clasts, broken stick core.
	426.16	0.85		SANDSTONE: Medium grey, fine to medium-grained, slightly calcareous throughout, minor thin coaly laminae throughout, minor plant and root impressions throughout, muddy in part, bedding; even with cross-sets, parallel in part, minor calcite laminae near top, minor muddy clasts, stick core to very badly broken at base.

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY P. Lee

DATE August 15, 1980 SHEET No. 96

COM BCA*	DEPTH. m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	429.60	3.44		SILTSTONE: Muddy at top grading to very fine sandstone at base, medium grey, abundant plant and rootlet impressions at top, slightly calcareous in part, massive throughout, trace mica flakes in part, dirty. Broken stick core. Core Loss in this unit - 0.14 m.
	430.43	0.83		SANDSTONE: Medium grey, very fine to fine-grained, strongly calcareous, minor listricated surfaces, bedding; massive to very thin even bands, evidence of small-scale slumping in part. Very silty throughout, broken stick core. NOTE: Geophysical log ends at 430 m.
	433.46	3.03		SANDSTONE: Medium grey, minor dark grey, very silty throughout, abundant muddy silty bands up to 1 cm thick (top 14 cm and a section 17 cm thick (2 cm up from 430.53 point) very fine-grained sandstone/siltstone, non-calcareous, massive, dark grey). Scattered calcite veins (up to 5 mm thick) throughout, bedding; even and parallel, calcareous to strongly calcareous in part and at base, listricated surfaces, some ripple/wave bedding, broken stick core.

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BOREHOLE No. BP-4-80

LOGGED BY P. Lee

DATE August 15, 1980

SHEET No. 97

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	434.59	1.13		SANDSTONE/SILTSTONE: Medium to minor dark grey, very fine-grained sandstone, scattered thin muddy laminae throughout, non-calcareous, bedding even and parallel, with abundant cross-sets and scattered cross-beds, bioturbated? Sandstone grading to nil at base, trace calcite veins, listricated surfaces. Broken stick core.
	436.11	1.52		SILTSTONE: Medium to dark grey, muddy at top, with muddy intraclasts lower down in section becoming very fine to argillaceous sandstone at base, listricated surfaces. Trace very thin coaly laminae, trace thin calcite laminae, non-calcareous, minor carbonized plant and rootlet impressions throughout, broken stick to broken in part core.
	436.75	0.64		SANDSTONE: Medium grey, very fine to fine-grained, massive at top, strongly calcareous throughout, highly bioturbated, bedding irregular and undefined and contact below massive sequence.
	437.84	1.09		MUDSTONE: Medium to dark grey, silty throughout, top half strongly calcareous, lower half only slightly calcareous.

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COAL DIVISION

BOREHOLE No. BP-4-80

LOGGED BY P. Lee

DATE August 15, 1980 SHEET No. 98

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				Listricated surfaces, trace thin calcite veins, scattered carbonized plant and rootlet impressions throughout, dirty throughout, sandy near base, broken to broken stick core.
	438.46	0.62		SANDSTONE: Medium to minor dark grey, strongly calcareous throughout, abundant thin dark grey muddy silty laminae throughout, bioturbated, bedding; very irregular, slumping, cross-beds and cross-sets, trace very thin coaly laminae (1-3 mm thick). Stick core.
	439.06	0.60		SANDSTONE: Medium grey, fine to medium grained, calcareous throughout, scattered thin coaly laminae throughout (1 mm thick), trace listricated surfaces, scattered mica flakes, minor carbonized debris throughout, bedding; thin, even parallel, with scattered cross-sets throughout, dip $\approx 12^{\circ}$, stick core and ground at base.
	439.70	0.64		SILTSTONE: Medium to dark grey, non-calcareous, sandy at base, abundant carbonized debris throughout, soft and dirty, listricated surfaces, trace mica flakes, core ground at top, broken remainder of section.

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BP CANADA
COAL DIVISION

BOREHOLE No. BP 80-05

LOGGED BY Corey Bickford

DATE 16 August 1980

SHEET No. 1

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	1.52	1.52		Casing; NO CORE.
	1.84	(0.32)		CORE LOST - ROCK
	6.00	4.16		SANDSTONE - medium to coarse-grained, clean, moderately cemented. Light grey; rusty orange-weathering along joints and throughout top 0.31 m. Large scale low-angle cross-laminated, with occasional coal spars. Generally weakly calcareous, except in weathered zones which are moderately to strongly calcareous. Abrupt.
	6.08	0.08		MUDSTONE - dark brown, carbonaceous, sheared.
	6.13	0.05		MUDSTONE - dark brownish-grey, slightly carbonaceous, abundant plant debris.
	6.77/	(0.64)		CORE LOSS - ROCK
	7.90	1.13		MUDSTONE - dark grey, silty. Occasional concentrations of plant debris. Patchily weakly calcareous; gradational.
	8.20	(0.30)		CORE LOSS - COAL.
	8.53	0.33		MUDSTONE - dark grey, slightly carbonaceous. Abundant plant fragments. Abrupt.

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BP CANADA
COAL DIVISION

BOREHOLE No. BP 80-05 LOGGED BY Corey Bickford DATE 16 August 1980 SHEET No. 2

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	9.57	1.04		SILTSTONE - medium to dark grey; argillaceous at top, becoming sandy towards base. Rootlets and plant debris in top 0.31 m; large sand-filled burrows near base. Ripples common in lower part. Strongly calcareous. Abrupt.
	10.13	0.56		SANDSTONE, very fine-grained/SILTSTONE (70:30 grading down to 50:50 at base) - interlaminated, rippled light grey sandstone and medium grey siltstone; strongly calcareous; abrupt.
	10.35	0.22		MUDSTONE - dark grey to brown; slightly carbonaceous in centre; carbonaceous at top and base. Abundant finely broken plant debris. Abrupt.
11 ^o	12.20	1.85		SILTSTONE/MUDSTONE/SANDSTONE, -very fine-grained (65:25:10) interlaminated, locally intensely bioturbated medium-grey siltstone, dark grey silty mudstone (minor brown carbonaceous mudstones) and light grey sandstone. Common medium and large burrows. From 0.26 to 0.69, scattered roots and concentrations of plant fragments. Strongly calcareous, gradational.

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BOREHOLE No. BP 80-05

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SHEET No. 3

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	14.32	2.12		SANDSTONE - very fine-grained, silty. Abundant ripples. Light grey, with a few thin bands of dark grey, very silty mudstone. Common vertical burrows. Strongly calcareous. Gradational.
3° to 5°	16.08	1.76		MUDSTONE/SILTSTONE (60:40) - thinly interbedded, fining-upward sequences of dark grey mudstone (silty in top 0.48; slightly carbonaceous below) and medium, grey siltstone. Common medium burrows; some crumpled (? compactional), also abundant microerosional features. Some large ripples in siltstones. Top 0.48 moderately calcareous; remainder non-calcareous.
	16.19	0.11		MUDSTONE - black, carbonaceous, slightly listricated, scattered plant debris. Slumped basal contact.
	16.83	0.64		SILTSTONE/MUDSTONE (80:20) - interlaminated medium grey, argillaceous siltstone and dark grey, silty mudstone. Very strongly calcareous; abrupt.

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SHEET No. 4

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	17.25	0.42		MUDSTONE - black, carbonaceous, abundant carbonized plant debris.	
	17.40	(0.15)		CORE LOSS - ROCK	
	17.57	0.17		COAL - dull and bright, lustrous, sheared, broken.	===== MK80 5/1/1 =====
	17.60	0.03		COAL - sheared, stick.	
	17.62	0.02		MUDSTONE - black, canneloid, broken stick.	
	17.75	0.13		MUDSTONE - dark grey to black, carbonaceous; abundant plant debris. Abrupt.	
	18.14	0.39		SILTSTONE - grading down to MUDSTONE, silty - dark grey. Pelocypod (MK80/5-F1) at 0.36 m below top. Very strongly calcareous; gradations..	
	19.20	1.06		MUDSTONE - dark grey to black, carbonaceous. Some thick bright coal bands and pyrite. Gradational. Core loss in this unit 0.75 m.	

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SHEET No. 5

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	21.70	2.50		SANDSTONE - fine to very fine-grained/SILTSTONE - (20:80 at top, rapidly grading down to 80:20) - interlaminated, rippled, commonly rooty light grey sandstone and medium grey siltstone. Minor bands of dark grey, carbonaceous mudstone containing plant debris. Basal 0.70 m is dominated by clean, rippled sandstone. Strongly calcareous; abrupt.
3 ⁰	22.66	0.96		SILTSTONE/SANDSTONE, very fine-grained/MUDSTONE (60:30:10, grading down to 10:50:40 at base) - interlaminated medium grey siltstone, light grey sandstone and dark grey silty mudstone. Sands commonly as rippled lenticles, showing microerosional features. Burrowed in basal half. Pyrite flecks near top. Strongly calcareous. Abrupt.
	23.40	0.74		MUDSTONE - dark grey, silty in middle; black, carbonaceous at top and base. Abundant plant fragments. Rooty; gradational.

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SHEET No. 7

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	28.07	0.99		SANDSTONE, very fine-grained/SILTSTONE (50:50) - interbedded locally slumped or intensely bioturbated dark grey, generally argillaceous siltstone and light grey silty sandstone. Some ripples in sandstones. Unit is carbonaceous and rooty at top. Scattered burrows. Some narrow plant stems. Patchily moderately calcareous. Gradational.
	29.97	1.90		SANDSTONE - fine-grained with abundant silty laminae in top 1.04; remainder medium-grained, clean; moderately cemented and light to medium grey. Top 1.04 is rippled, with minor laminae of dark grey, carbonaceous mudstone, and some rootlets. Remainder is massive-appearing with scattered pebbles at base (max. 30 mm). Weakly calcareous, abrupt.
2 ⁰	32.67	2.70		MUDSTONE/SILTSTONE/SANDSTONE, very fine-grained (50:45:5; grading down to 95:5:0 at base) - interlaminated dark grey silty mudstone and medium grey siltstone with ripples and laminae of light grey silty sandstone. Overall a fining-downward unit with scattered small burrows at top. From 0.43 to 0.55, sandstone, light grey, medium-grained,

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SHEET No. 8

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				rusty orange-weathered and cut by calcite filled fractures. Sheared and slickensided top contact (55° CA); base marked by slickensides and calcite (90° CA). In top 0.63, occasional slickensides and calcite at 75° to 90° CA, other than those in the rusty sandstone already noted. No sign of dip changes. Locally abundant plant debris towards base. Top 1.15 m strongly calcareous; remainder of unit is patchily calcareous, with muds non-calcareous. Gradational.
	33.32	0.65		SILTSTONE/SANDSTONE, very fine-grained (50:50 grading down to 100:0 at base) - interlaminated and interbedded, generally intensely bioturbated dark grey argillaceous siltstone and light grey silty sandstone. Abundant medium horizontal and vertical burrows. Some ripples, in sandy phases. Pyrite at top and very hard. Weakly calcareous; abrupt.
	34.02	0.70		SANDSTONE - very fine to fine-grained, rippled, with occasional dark silty laminae. Light grey, with scattered plant fragments. Moderately calcareous; abrupt.

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SHEET No. 9

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	35.77	1.75		MUDSTONE - dark grey, silty, with abundant (50%) siltstone laminae in top 0.20; remainder with less than 2% ripples and lenticles of siltstone and very fine-grained silty sandstone. From 0.92 to 1.25, abundant pelecypods; MK80/5-F2 at 1.00. Slightly carbonaceous at base. Non-calcareous; gradational.
	36.06	0.29		MUDSTONE - black, carbonaceous. Two thin bands of very fine-grained, silty sandstone (0.07 to 0.09; 0.26 to base), with abundant small coal spars in the basal band. Erosional?
	36.18	(0.12)		CORE LOSS - COAL
	36.25	0.07		COAL - <u>dull lustrous and dull and bright</u> , fragments mixed in box; broken and ground. MK80 5/2/1
	36.30	0:05		COAL - dull banded, lustrous, pyrite flecks, stick.
	36.45	0.15		MUDSTONE - black, carbonaceous, very silty, gradational.
	37.28	0.83		SANDSTONE - very fine-grained /SILTSTONE (50:50) - interbedded locally slumped; generally appears intensely bioturbated; non-calcareous at top, weakly to moderately

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SHEET No. 10

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				calcareous at base. Gradational.
	40.00	2.72		SILTSTONE - medium grey, mostly argillaceous, with local vague sandy laminae. From 1.94 to 2.35 m mudstone, dark grey, silty, crumbly, grading at base back to rooty siltstone. Core ground at 0.68 to 1.17 m; core loss in this interval 0.35 m. Locally abundant plant fragments. basal 0.34 m very sandy. Patchily calcareous; gradational.
	51.98	11.98		SANDSTONE - fine-grained with abundant silty laminae in top 0.64; medium-grained, grading down to fine-grained from 0.64 to 0.83 m; dark grey silty mudstone from 0.83 to 0.87m; fine-grained sandstone from 0.87 to 1.00 m; remainder of unit is medium to coarse-grained, with local concentrations of coal spars and pebbles, and is generally clean and well sorted. Near base, a single quartzite cobble, cut on all sides by edge of core, therefore original size in excess of 0.065 m. From 9.21 m to base, unit is distinctly conglomeratic. Locally, vague low-angle cross-lamination, although unit as a whole appears massive. Weakly calcareous. Abrupt.

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BOREHOLE No. BP 80-05

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SHEET No. 11

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	52.00	0.02		MUDSTONE - dark grey, carbonaceous, listricated.	=====
					MK80 5/3/R
				MUDSTONE - dark grey, slightly carbonaceous.	
	52.05	0.05		MUDSTONE - dark grey to black, carbonaceous, broken and ground.	=====
	52.28	(0.23)		CORE LOSS - ROCK	
	53.10	(0.82)		CORE LOSS - COAL	
	53.31	0.21		COAL - sheared, broken.	MK80 5/3/1
	53.36	0.05		COAL - dull and bright, sheared. Stick.	MK80 5/3/2
	53.38	0.02		COAL - dull and bright. Stick.	
	53.41	0.03		COAL - bright banded, sheared. Stick.	
	53.43	0.02		COAL - dull lustrous.	=====
	53.44	0.01		COAL - bright, sheared. Stick.	MK80 5/3/2
					=====

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COAL DIVISION

BOREHOLE No. BP 80-05

LOGGED BY Ali Chowdry

DATE 17 August 1980

SHEET No. 14

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	56.02	0.56		SANDSTONE/MUDSTONE - interlaminated sequence of light grey very fine-grained sandstone (laminated) and darker grey silty, somewhat banded mudstone. Mudstone/Sandstone boundaries indented and highly erosive, abundant funnelling of sands into mudstone as wide vertical burrows. (? by Pelecypods). Lower 0.20 m mine thinly interlaminated and silt/mud grade; calcareous, interbedded below.
4 ⁰ to 5 ⁰	59.90	3.88		SILTSTONE/MUDSTONE: (20:80), dark grey silty mudstone with frequent interlaminae of very fine -grained sands (minor component) and silts - finely laminated, these are lenticular pinch and small and often have abrupt contacts; much micrograding and banding evident, also concomitant erosion and deposition. Locally are zones rich in finely carbonaceous plant debris and admixed with argillaceous content, pyrite (generally finely disseminated) is evident. At intervals, shells of Pelecypods - varying from whole to fragmented are discernable - these appear to be particularly rife in zones rich in carbonaceous matter. 0.25 m discrete dark grey siltstone larger and strongly calcareous, next weakly calcareous to non-calcareous. Top of 0.70 m with

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SHEET No. 15

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				abundant 50% laminated silt, and closely laminated-parallel to low-angle cross-lamination, bands of slightly wavy and crinkly laminae quite common (perhaps resulting from compacting mud). Contact with coal (below) is listricated but appears to be abrupt. Core loss in this unit 0.39 m. Basal 0.03 m of sand well-laminated and incorporating substantial amount of coaly laminae - thus appearing black. No muddy component between sandstone and coal.	
	60.04	0.14		COAL - badly fragmented into small pieces but appear to comprise very hard dull coal fragments with dull lustrous and bright coal also occur. Topmost few cm have thin pyrite lenses, also disseminated, listricated surfaces.	MK80 5/3A/1
	60.23	0.19		MUDSTONE - black, carbonaceous, rich in large amounts of carbonized plant matter, Core loss in this unit 0.14 m.	
	60.30	0.07		SILTSTONE - dark grey, highly argillaceous and carbonized plant matter, some of these might be rootlets; gradational at base, stick.	

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SHEET No. 16

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
6 ⁰ -7 ⁰	69.17	8.87		SANDSTONE - light grey, fine to fine-grained, cross-laminated and low-angle cross-lamination and locally rippled, generally clean and sorted. 0.22 m zone in middle with interbeds of dark grey mudstone with tiny sand filled burrows, and mud/sand contacts erosional. Basal. 0.90 m intermittently burrowed and strongly calcareous, rest moderately calcareous. Change below occurs with appearance of thin mudstone bands. Broken stick. Core loss in this unit 0.26 m.
	70.90	1.73		SANDSTONE/MUDSTONE (65:35) interlaminated fine to very fine-grained, light to medium grey laminated sandstone frequently with tiny muddy tubules (pin pricks) and sometimes in great concentration. Black silty mudstone layers often with erosional tops and floors, mudstone at times contain a good deal of finely particulate and carbonaceous debris; calcareous throughout.
	71.05	0.15		MUDSTONE - black, carbonaceous, bands of very hard muddy coal, fragmented, listricated, gradual.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	71.77	0.72		SILTSTONE/SANDSTONE (85:15), medium to dark grey, sandstone very fine-grained, argillaceous, finely laminated, and frequently interlayered with argillaceous siltstones. The sequence characterised by wavy, chaotic lamination resulting from extensive bioturbation. Plant debris - large pieces to finely broken (carbonized) plant debris, strongly calcareous, gradual diminution of silts below.
	73.30	1.53		SILTSTONE/MUDSTONE (65:35) medium to dark grey, bands of argillaceous siltstones imperceptably pass to layers of silty mudstones, few coal spars; much carbonized plant matter, brief intervals of black highly carbonaceous mudstones, strongly calcareous, fractured stick.
	73.50	0.20		MUDSTONE - black, richly carbonaceous, silty lower end.
8°-10°	75.20	1.70		SANDSTONE/SILTSTONE/MUDSTONE - medium to dark grey, dominantly sandy, very fine-grained, argillaceous, laminated, banded to micrograding; 0.25 m silty mudstone with chaotic lamination (some of it due to undoubted bioturbation and rest resulting from slumping); while interval is one of

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SHEET No. 18

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				very frequently interlaminated sand, siltstone and mudstone with ripples and lamination syndepositionally disturbed, mostly calcareous, bottom 0.65 m essentially a mixture of siltstone/mudstone with 4 cm sandy zone rich in coal spars; broken stick.
	76.68	1.48		SANDSTONE - top 0.35 m very fine-grained medium grey sandstones, rest fine-grained, light to medium grey, cross-laminated, few silty laminae, a large coal spar, sand 0.13 m rippled with small coal spars, calcareous throughout, abrupt at base, broken stick. Core loss in this unit 0.22 m.
	76.69	0.01		MUDSTONE - black, richly carbonaceous and with coal bands. (attached to the sandstone above).
	76.85	0.16		COAL - mostly fragments.
	76:87	0.02		COAL - dull lustrous, minor vitrinite fragmentation, into small peices, some of these listricated.
				MK80 5/4/1

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DATE 17 August 1980 SHEET No. 19

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	77.01	0.14		COAL - dull lustrous and dull and bright, appears clean, low angle, fragmented.	MK80 5/4/1
	77.06	0.05		MUDSTONE - dark grey to black, carbonaceous, listricated	MK80 5/4/2
	77.09	0.03		COAL - fragmented into small pieces, dull lustrous and some bands.	MK80 5/4/3
	78.09	1.00		MUDSTONE - dark grey to black, abundant carbonized plant debris, locally carbonaceous, one 5 cm thick zone with coal, sporadically silty and slightly ferruginous; listricated contact with coal below, fragmented core.	
	78.41	0.32		COAL - mostly broken core; mostly dull and dull lustrous; sporadically coal shows packing of needles and other plant debris (carbonized) and there are thin stringers and impregnation of pyrite.	MK80 5/4/4
	78.49	(0.08)		CORE LOSS - COAL	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	83.59	0.74		SANDSTONE - light grey, fine to medium-grained, clean and well sorted, barely perceptible cross-bedding, calcareous; interbedded below. Stick.
	83.83	0.24		SANDSTONE - medium grey, very fine-grained with frequent silty to muddy laminae, rippled, microerosional contacts, calcareous, interbedding below.
	85.00	1.17		MUDSTONE/SILTSTONE - medium to dark grey, interbeds, laminae commonly under 5 mm in thickness, pinching and swelling and lenticular with irregular boundaries due to erosional. Within certain zones laminae very closely spaced and when ended and burrowed, these appear to be wavy to crumbly, some zones abundantly burrowed and displacing and puncturing laminae. One 0.08 cm sandstone zone with carbonaceous matter. Calcareous throughout, broken stick, abrupt at base. Core loss in this unit 0.06 m.
	85.14	(0.14)		CORE LOSS - COAL.

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SHEET No. 22

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	85.30	0.16		COAL - mostly dull lustrous with frequent but tiny vitrin- ite laminae and/or dull and banded large pieces, basal contact listricate.
	85.64	0.34		SILTSTONE - dark grey, bright argillaceous, carbonaceous plant fragments, structureless, gradational, stick; erosional.
	86.05	0.41		SANDSTONE - medium brownish grey, very fine-grained with frequent thin silty laminae (gradational), compactional features, rippled and cross-laminated, strongly calcareous, erosional, stick.
	86.11	0.06		MUDSTONE - dark grey to black, carbonaceous (especially lower half) fragmented at base.
	86.25	(0.14)		CORE LOSS (Rock)
	86.36	(0.11)		CORE LOSS (Coal)
	86.46	0.10		COAL - dull lustrous border and dull bright fragmented into small pieces.

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	87.85	1.39		SILTSTONE - Top 0.12 m black, richly carbonaceous, remainder variably argillaceous, sporadic carbonaceous debris, locally vaguely banded calcareous, gradual.
	89.24	1.39		SANDSTONE/SILTSTONE - medium grey, tip half dominantly sandy, very fine-grained, with local wavy lamination and cross lamination rest argillaceous silts, mostly devoid of lamination A near-vertical juxtaposition of silts and sand with well-defined contact with 20 cm depth and stretching to entire width of core - ? Channel or slump, strongly calcareous throughout, passage by interbedding.
	89.80	0.56		SANDSTONE - medium to light grey, very fine-grained, frequent silty laminae within top 6 and 0.27 m, wavy lamination, intraclasts and microerosional features, sporadic burrows, calcareous, broken stick.
				END OF BOX 29 (Bx 30 & 31 logged by)

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SHEET No. 24

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	91.59	1.79		SANDSTONE, fine to very fine-grained/SILTSTONE (80:20) - interbedded, generally slumped light grey, rippled sand- stone and dark grey, argillaceous siltstone. Rare muddy interclasts. 0.03 m calcite band (60° CA) at 0.81 to 0.84. Silty at base.	
	91.63	0.04		COAL - bright, hard, "needles" or rods visible in coal, may indicate derived nature of this coal. "Needles" up to 12 mm long, 0.8 mm diameter, and appear to be cylindri- cal. Broken stick.	MK80 5/7/1
	91.68	0.05		COAL - dull banded, lustrous; sheared in part. Broken.	MK80 5/7/2
	91.81	(0.13)		CORE LOSS - COAL	
	91.92	0.11		COAL - dull, lustrous, sheared. Stick.	
	91.96	0.04		COAL - dull, lustrous, listricated.	MK80 5/7/3
	91.97	0.01		MUDSTONE - black, canneloid, listricated.	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	92.01	0.04		COAL - dull banded, lustrous, sheared.	
					MK80 5/7/3
	92.04	0.03		COAL - dull and bright lustrous, sheared.	
	92.08	0.04		COAL - dull banded, lustrous, sheared.	=====
	92.12	0.04		COAL - dull, lustrous, sheared.	MK80 5/7/3
	92.14	0.02		COAL - dull and bright, lustrous, sheared. Stick.	=====
	92.22	(0.08)		CORE LOSS - COAL	=====
	92.24	0.02		COAL - dull banded, lustrous, sheared.	
	92.25	0.01		COAL - bright, slightly sheared.	
	92.31	0.06		COAL - bright banded, lustrous.	MK80 5/7/4
	92.35	0.04		COAL - dull banded, lustrous, sheared, with pyrite flecks.	
	92.38	0.03		COAL - dull banded, lustrous, stick.	
	92.39	0.01		COAL - bright, badly broken.	
	92.40	0.01		COAL - dull, metallic lustre, very hard, broken:	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	92.47	(0.07)		CORE LOSS - COAL	=====
	92.48	0.01		COAL/MUDSTONE (50:50) - interlaminated black, canneloid mudstone and bright coal.	MK80 5/7/5
	92.50	0.02		MUDSTONE - black, canneloid, abundant very thin bright coal bands. Broken stick.	=====
	93.66	1.16		SILTSTONE, grading down to SANDSTONE, very fine-grained, silty - medium grey; abundant tiny plant fragments. Top 0.54 m non-calcareous; remainder strongly calcareous. Gradational.	
	94.71	1.05		MUDSTONE - dark grey, silty, with abundant plant debris including some long, parallel-rippled leaves that resemble those of eel-grass. Moderately calcareous. Abrupt.	
	94.74	(0.03)		CORE LOSS - COAL	
	94.81	0.07		COAL - dull banded, lustrous. Stick.	MK80 5/8/1

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	94.83	0.02		COAL - bright.	
	94.86	0.03		COAL - dull banded, lustrous, sheared. Stick.	MK80 5/8/1 =====
	94.88	0.02		MUDSTONE - dark grey, listricated, thin bright coal bands. Stick.	
	94.91	0.03		MUDSTONE - dark grey, listricated, abundant plant fragments Stick.	
	94.97	(0.06)		CORE LOSS - ROCK	
	95.04	(0.07)		CORE LOSS - COAL	
	95.14	(0.10)		CORE LOSS - ROCK	
	95.28	(0.14)		CORE LOSS - COAL	
	95.30	0.02		COAL - dull lustrous, listricated. Stick.	
	95.47	0.17		MUDSTONE - black, carbonaceous with thin bright coal bands at top; dark grey, slightly carbonaceous at base. Listricated; gradational.	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
				TOP OF BOX 32	
	96.61	0.57		MUDSTONE - black to dark grey, abundant silty (35%) lacking lamination, finely broken plant debris, gradational.	
	97.49	0.88		SILTSTONE - dark grey, richly argillaceous, sporadic discontinuous lamination, vaguely microerosional contacts, strongly calcareous, gradual at base. Stick.	
	98.08	0.59		SANDSTONE - medium grey, fine to medium-grained, high concentration of finely comminuted carbonaceous matter (interlaminae) cross-laminated, strongly calcareous, sharp at base.	
	99.68	1.60		SILTSTONE/MUDSTONE - dark grey, top 1/3 argillaceous, silts, structureless, remainder traces mudstone, ferruginous locally; strongly calcareous throughout, stick.	
	99.75	0.07		COAL - dominantly dull banded, fragmented.	MK80 5/9/1
	99.84	(0.09)		CORE LOSS - COAL	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	99.89	0.05		MUDSTONE - black, fragments of light listricated carbona- ceous mudstone.	MK80 5/9/2
	99.98	(0.09)		CORE LOSS - ROCK	
	100.04	0.06		COAL - dull lustrous, pine needles visible in one piece. fragments, basal contact fragmented.	MK80 5/9/3
	100.18	(0.14)		CORE LOSS - COAL	
	100.81	0.63		MUDSTONE - black to dark grey, 0.08 in thick very fine- grained argillaceous sandstone, coal spars; 0.13 m thick ferruginous bands; basal 7 cm very silty, slightly erosional at base, stick.	
5°	101.72	0.91		SANDSTONE - light grey, fine to medium-grained, generally clean, well-sorted, top 2/3 rippled and cross-laminated; coal spars in basal 1/3 associated with slightly coarser fractures, weakly calcareous, sharp and slightly irregular contact.	

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COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	102.32	0.60		SILTSTONE/MUDSTONE - top half brownish grey siltstone, argillaceous, strongly calcareous with a ferruginous nodule; remainder black, rich in finely broken and carbonized plant fragments; abrupt at base. Stick.
	102.83	0.51		SANDSTONE - light grey, fine to very fine-grained with thick silty laminae, microerosional contacts, sporadic burrows, calcareous; gradual at base.
	103.60	0.77		SILTSTONE - dark grey, richly argillaceous, dislocation fracturation of lamination due to bioturbation, mildly calcareous, fractures at top and base, broken core. Core loss in this unit: 0.34 m.
	105.50	1.90		SANDSTONE - light to medium grey, fine-grained, some silty laminae, zones of darker laminae (concentration of fine carbonaceous matter) cross-bedded, locally tiny coal spars, calcareous, sharp basal contacts.
3°	105.98	0.48		SANDSTONE - medium grey, very fine-grained, laminated and rippled, silty/mostly laminae, strongly calcareous.

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SHEET No. 32

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				sharp and slightly erosive at base.
	107.20	1.22		SANDSTONE - light grey, fine-grained, cross-laminated throughout, 4 cm thick zone of silty/muddy (black and rusty) intraclasts, much vertical burrowing (funnelling of dark matter along the structure), calcareous, passage below by interbedding.
3° to 4°	107.46	0.26		SANDSTONE/MUDSTONE - light to dark grey, frequent interbeds of very fine sand and silt mudstones with sharp tops and floors. There is slight banding/grading within mudstone layers, few burrows, slightly calcareous, erosional at base.
	107.62	0.16		MUDSTONE - dark grey, highly silty - (homogeneously), gradual.
	108.41	0.79		SANDSTONE/SILTSTONE - medium to dark grey, interbeds, dominance of silts, gradational to erosive passages, flaser structures; basal 0.12 m essentially argillaceous siltstone with severe slumping of laminae. Some

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SHEET No. 33

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				features, strongly calcareous throughout, broken core, transitional at base. Core loss is this unit: 0.19 m.
	109.24	0.83		MUDSTONE - dark grey to black, locally silty, carbonized plant debris locally concentrated, strongly calcareous throughout, hairline fracturing at base.
	109.36	0.12		MUDSTONE/COAL - badly fragmented, carbonaceous mudstone with chunks of dark dull coal.
	110.00	0.64		MUDSTONE - dark grey, 0.05 m carbonaceous/coaly mudstone in middle, basal 0.15 m highly silty and slightly calcare- ous, gradational.
	111.70	1.70		SANDSTONE - medium to dark grey, 75% sandstone, very fine- grained, laminated with frequent interbeds of siltstones; much of the sequence appears banded (broadly) and the lamination is characteristically crinkly, wavy as if slightly disturbed. Basal 0.25 m essentially argillaceous siltstones with subordinate, very fine-grained

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COM BCA*	DEPTH <i>m</i> (GEOH.)	THICKNESS <i>m.</i>		DESCRIPTION
		MEASURED	APPARENT	
				laminae but this sequence badly slumped, one oblique fracture; strongly calcareous throughout, fragments at base. Core loss in this unit: 0.55 m.
	112.05	0.35		MUDSTONE - black, locally extremely carbonaceous, interval entirely fragmented, listricated
	112.84	0.79		SILTSTONE - medium to dark grey, argillaceous some carbonaceous plant fragments, strongly calcareous throughout, gradational at base; one calcite-lined fracture (along to bedding). fragmented core.
5°	114.07	1.23		SANDSTONE - top 0.54 m very fine-grained, medium grey with chaotic lamination due to slumping, rest fine-grained, generally clean and cross-laminated sandstones, few tiny intraclasts in basal 0.12 m, a vertical fracture (no mineralization) traverses the band 0.65 m sands, strongly calcareous throughout passage below by interbedding, broken core.

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SHEET No. 35

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	114.70	0.63		SILTSTONE/SANDSTONE (40:60) interbeds of very fine-grained laminated sand and argillaceous dark grey siltstones, wavy, erosional laminae, flaser structures, concentration of finely comminuted carbonaceous matter, moderately slumped laminae, local vertical burrows, strongly calcareous, interbedded at base.
	116.60	1.90		MUDSTONE - medium to dark grey, "laminated" (f. interval 57 - 60 m.) essentially 90% dark grey silty mudstone with very frequent (within few mm) wisps and tiny stringers of very fine-grained light coloured sand. Mudstone hard, dense and break with clean slaty fracture. Micrograded bedding common; most interval strongly calcareous; tiny dark grey pelecypods and occasional fragmented shells seen, stick broken, gradual at base.
	118.23	1.63		SANDSTONE/SILTSTONE (65:35) medium to dark grey, sandstone very fine-grained, irregularly rippled to parallel lamination, burrowed (one 0.22 m deep and 1.5 cm wide with some concentric laminae); siltstone dark grey, very argillaceous with tiny ripples of sand; strongly calcareous

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SHEET No. 36

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
				(except silts); passage below by interbedding.
	119.69	1.46		SILTSTONE/MUDSTONE - interbeds, (30:70) dominantly top 0.40 m with substantial very fine sand, tiny ripples and lenticles of sand throughout; basal 0.40 m with high accumulation of carbonized plant matter (mostly large fragments.), strongly calcareous at top, very gradual at base, broken stick.
	120.08	0.39		MUDSTONE - dark grey to black, dense, calcareous in basal 0.07 m, fragmented core.
	120.26	0.18		MUDSTONE - black, smooth appearance, distinctly canneloid, occasional coaly streaks ; fragmented.
	120.32	(0.06)		CORE LOSS - COAL AND ROCK
	120.39	0.07		COAL - bony , hard, streaks of bright coal, fragmented.
	120.56	(0.17)		CORE LOSS - COAL

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SHEET No. 37

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION	
		MEASURED	APPARENT		
	120.70	0.14		MUDSTONE - black; highly carbonaceous, large piece.	
	120.73	(0.03)		CORE LOSS - ROCK	
	120.81	0.08		COAL - badly fragmented, appears to be hard bony coal.	MK80 5/10/1
	121.02	(0.21)		CORE LOSS - COAL	
	121.18	0.16		MUDSTONE - black, highly carbonaceous, stick.	
	121.57	0.39		SILTSTONE - medium grey, top 0.12 m richly argillaceous, occasional plant fragments, slightly erosional at base.	
4 ^o to 6 ^o	125.17	3.60		SANDSTONE - light grey, top 0.21 m very fine-grained, remainder fine to medium-grained, clean, well-sorted, cross-bedded, occasional darker laminae and intraclasts, calcareous, abrupt at base; broken stick.	
	125.65	0.48		SANDSTONE - Light gray, cherty, very coarse-grained and finely gritty, tiny coal spars; large pebbles in pebbles 0.07 m, erosive below. (One 4.5 to 2.5 cm white	

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BP CANADA
COAL DIVISION

BOREHOLE No. BP 80-05

LOGGED BY Ali Chowdry

DATE 18 August 1980

SHEET No. 38

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	125.68	0.03		MUDSTONE - black, very carbonaceous with thin layers of coal; ground at base.
	126.18	0.50		SANDSTONE - light grey, medium to coarse-grained, carbonized plant matter, coal spars; fragmented. Core loss in this unit: 0.42 m.
	126.30	0.12		SANDSTONE - light grey, very fine to fine-grained, very clean, sorted, quartzose, cross-lamination; listric contact at base.
	126.99	0.69		MUDSTONE - dark grey to black, very silty, ferruginous, abundant carbonized plant debris, rooty, calcareous, fragmented at base.
	127.24	0.25		SILTSTONE - medium to dark grey, argillaceous, laminated, band of very fine sand, calcareous, gradational.
	127.52	0.28		SILTSTONE/SANDSTONE: (50:50) interbedded, interlaminated, small scale cross-lamination, graded bedding, microerosional contacts, strongly calcareous, coal spars at base.

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BP CANADA
COAL DIVISION

BOREHOLE No. BP 80-05 LOGGED BY Ali Chowdry DATE 18 August 1980 SHEET No. 39

COM BCA*	DEPTH m (GEOPH.)	THICKNESS m.		DESCRIPTION
		MEASURED	APPARENT	
	127.89	0.37		SILTSTONE - medium grey, blotchy appearance due to ? bioturbation, lenses of very fine-grained sands, strongly calcareous, erosional at base, stick.
	128.26	0.37		SANDSTONE - light to medium grey, very fine-grained lenses of dark grey siltstones, laminated but the laminae moderat- ely slumped (some micro faulting) highly erosional base; calcareous. Stick.
	128.59	0.33		SANDSTONE/SILTSTONE - medium to dark grey, slight dominance of sandstone, - very fine-grained, laminated, broadly interlaminated with siltstones; coal spars throughout; calcareous throughout, gradational.
	129.14	0.55		SILTSTONE - medium to dark grey, chaotic lamination, lenses of very fine sand; the sequence appears to have slumped well-defined consolidation, abundant finely broken broken plant debris, weakly calcareous, gradual at base.

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