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Merrywood Coal Company Pty. Ltd.

E.L. 3/91 - Mt. Puzzler

Annual Report

Year 3 (6/12/93 - 6/12/94)

K.C. Morrison
November 1994

INTRODUCTION AND TENEMENT DETAILS

E.L. 3/91 is a 4 km^2 coal exploration tenement in the upper St Pauls River Valley, N.E. Tasmania (Figure 1), approximately 12 km east of the Merrywood Coal Mine.

The E.L. was originally 12 km^2 and was reduced to 4 km^2 at the end of Licence Year 1 (6/12/1992).

Land tenure comprises approximately 90% State Forest and 10% freehold forest. The State Forest component includes the S.E. corner of the Mt. Puzzler Forest Reserve.

The E.L. is held 100% by Merrywood Coal Company Pty Ltd.

PREVIOUS EXPLORATION

Geological mapping identified the areas prospective for Upper Triassic coal during Year 1 (Figure 2) and consequently the non-prospective portion of the E.L. was relinquished at the end of Year 1.

The main prospect is considered to be on the lower, northwesterly slopes of Mt St John and two exposures of outcropping coal were located in the bank of Coal Rivulet at the faulted northeasterly strike limit to this prospect.

No field exploration was conducted during Year 2.

During March 1994 three cored holes were drilled on the main prospect and the remainder of this report deals with the results of the drilling.

YEAR 3 EXPLORATION

In March 1994 three vertical NQ cored holes, totalling 104.4 metres, were drilled by contractors, HJ Stacpoole, using a truck-mounted Mobile B80 rig. Water was pumped from Coal Rivulet to the three sites.

Drill hole locations are shown on Figure 2 and the post-drilling collar survey on Figure 3 (note that the surveyor has arbitrarily labelled the boreholes in the reverse order).

Drill log sheets, photographs of the coal intersections and proximate analyses of the coal (together with data from Royal George coal analyses) are enclosed in Appendix 1. Graphic logs of the main seam and a higher seam encountered in MP-2 are shown on Figures 4 to 7.

The target main seam was intersected by all three holes and the top coal RLs suggest moderate fault dislocation of the seam along strike. Faults bounding at the NE and SW ends of the prospect correspond to stream

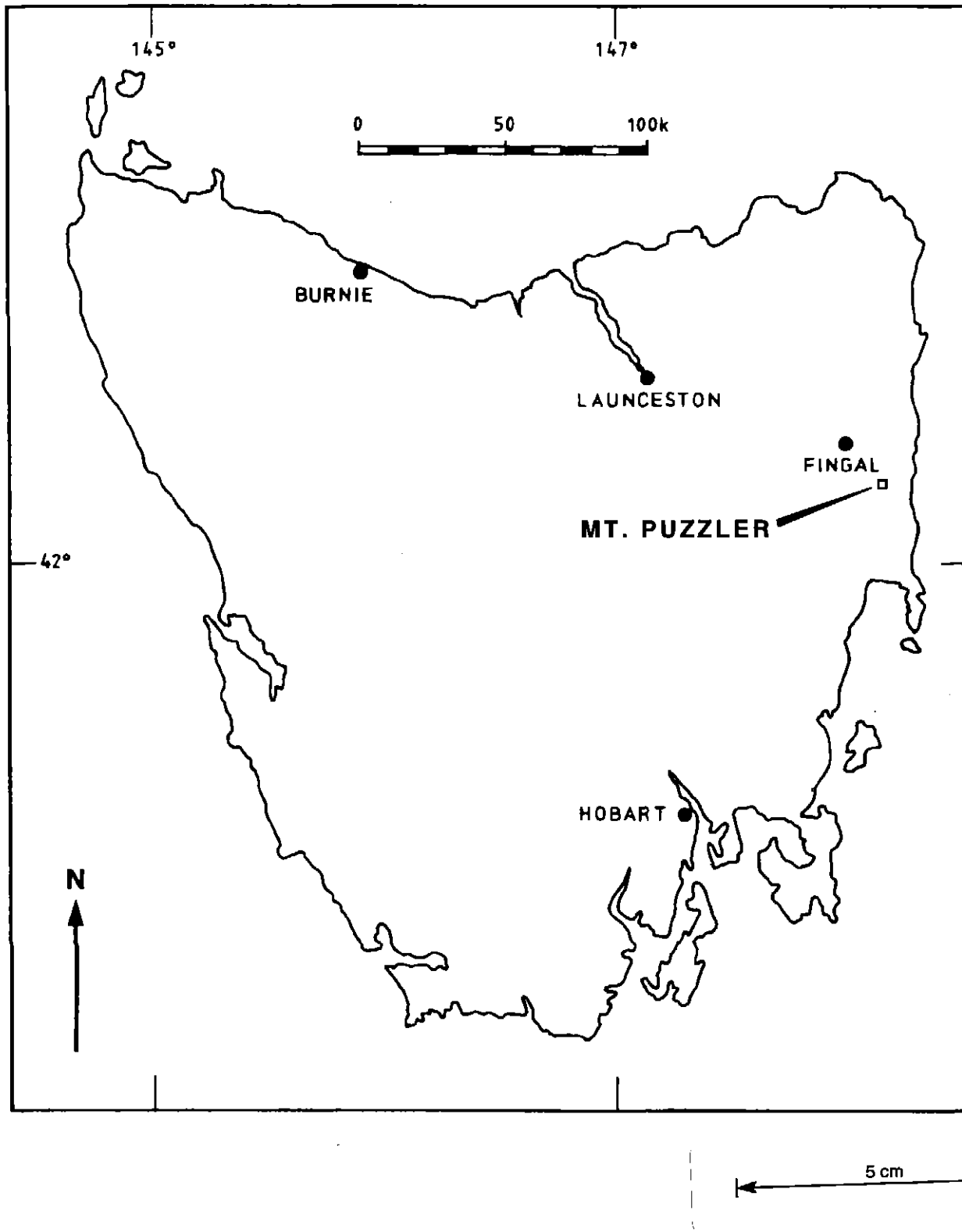
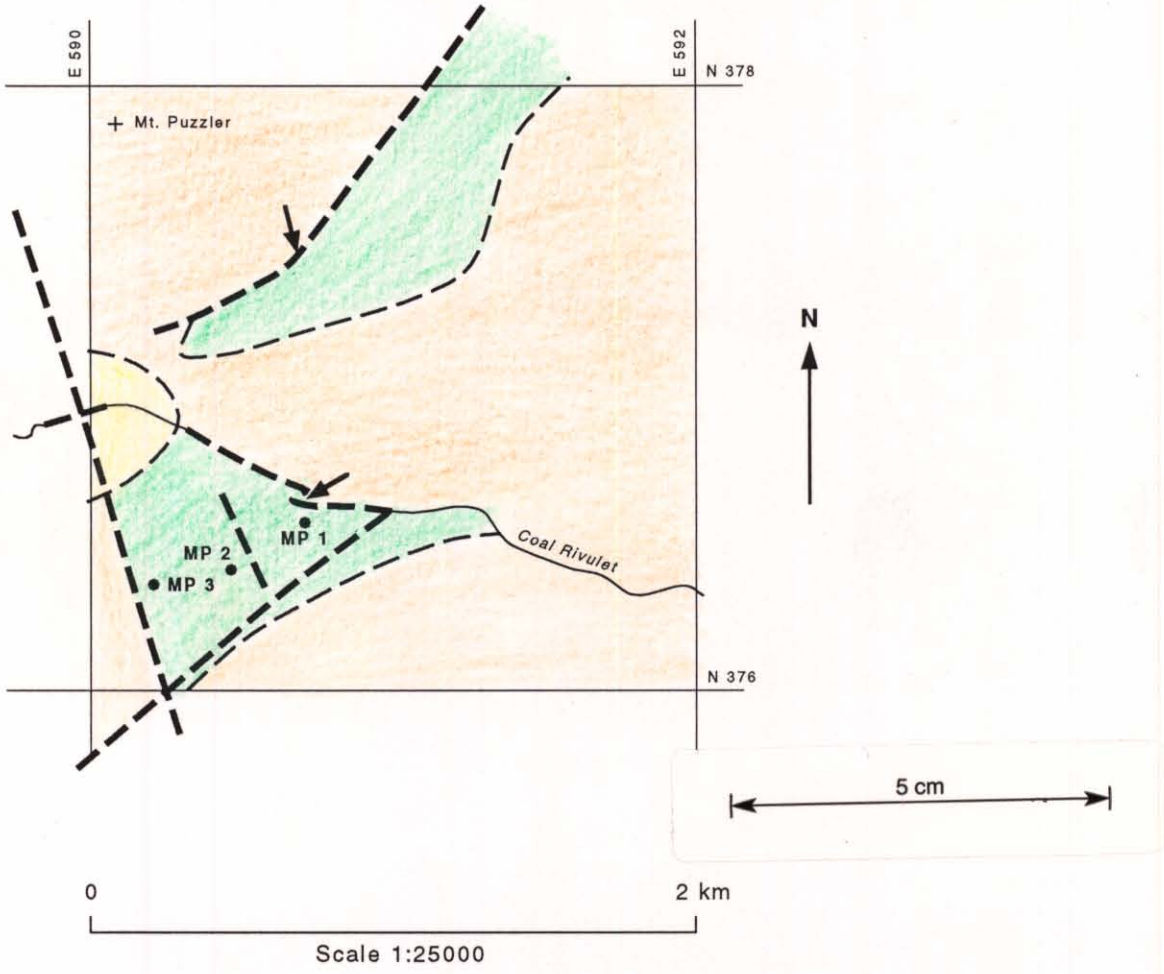


Figure 1 - Location Map EL 3/91



Drill Hole Coordinates

MP 1	E 590704	
	N 5376544	
MP 2	E 590470	
	N 5376394	
MP 3	E 590321	
	N 5376366	

Outcrop/Subcrop Geology

- Quaternary Alluvium
- Jurassic Dolerite
- Upper Triassic Sandstone and Coal Measures
- Coal Outcrop
- Fault
- MP 3 — Drill Hole Location

Figure 2 - EL 3/91 Geology and Drill Hole Location Map

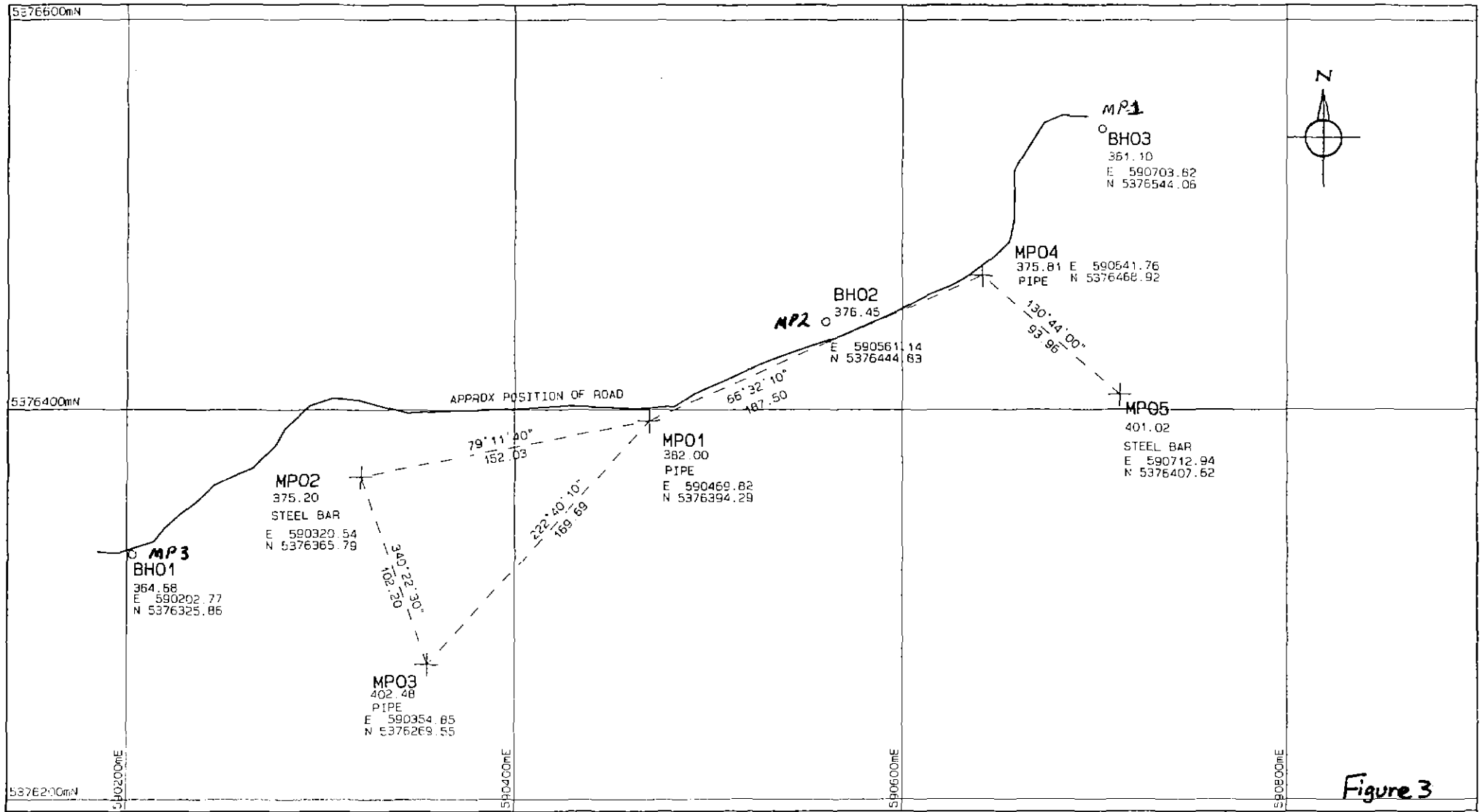
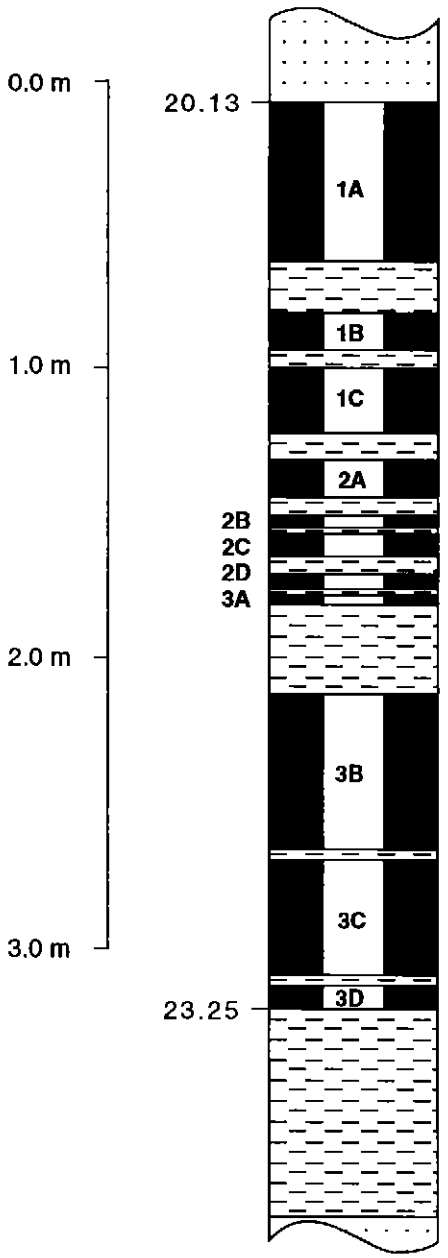


Figure 3

EAST COAST SURVEYING CONSULTING SURVEYORS AND LAND PLANNERS 88 TASMAN HIGHWAY ST HELENS 7216 PHONE (003) 761972 FAX (003) 761262	MERRYWOOD COAL CO. PTY. LTD. MT PUZZLER MINE - CONTROL	Scale : 1:2000 Plot : CONTROL Date : 8 AUG 1994 Job : 9424

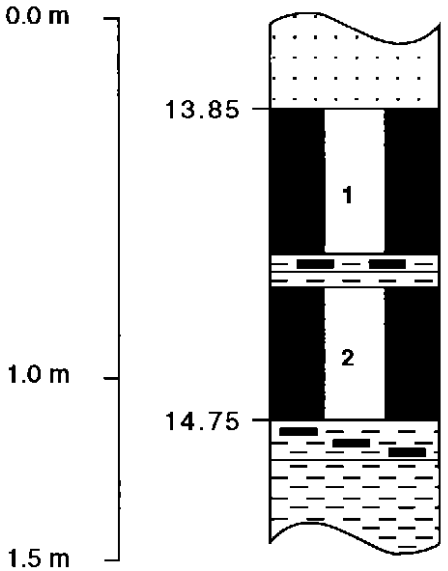
DDH MP-1



	Ash %	Volatiles %	Fixed C %	S %	S. E. MJ/kg
1 (A+B+C)	28.1	25.0	40.3	0.46	21.5
2 (A+B+C+D)	27.8	29.1	36.8	0.52	21.6
3 (A+B+C+D)	38.4	21.8	34.2	0.34	17.5

Figure 4 - Coal Seam Core Log & Proximate Analyses

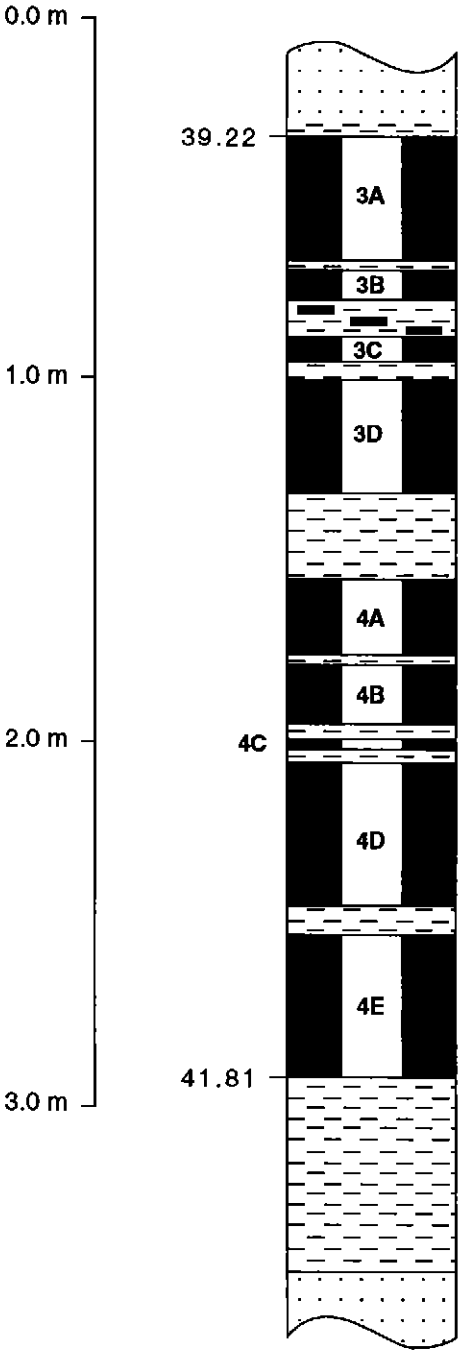
DDH MP-2 Upper Seam



	Ash %	Volatiles %	Fixed C %	S %	S. E. MJ/kg
1	43.8	21.4	30.0	0.29	15.7
2	25.7	26.2	42.5	0.41	22.9

Figure 5 - Coal Seam Core Log & Proximate Analyses

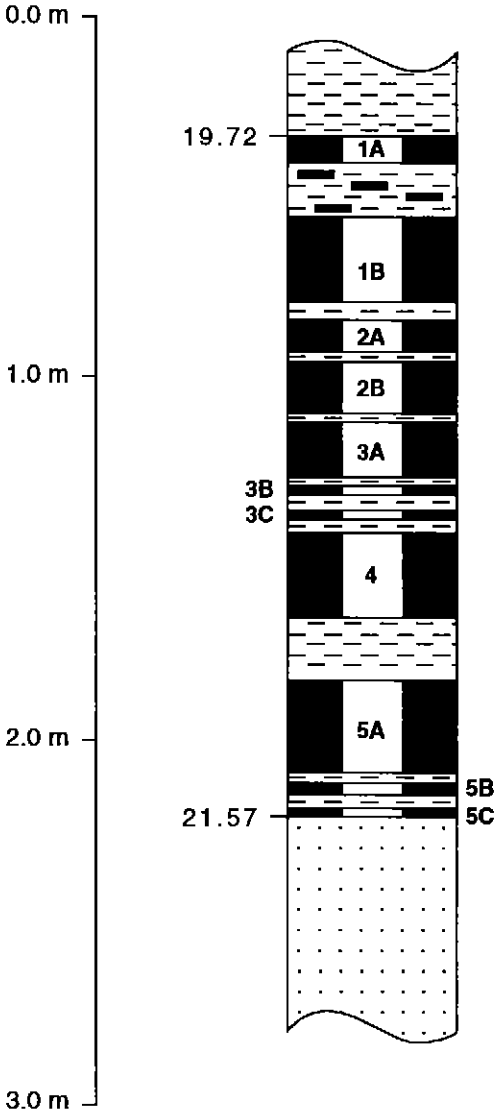
DDH MP-2 Main Seam



	Ash %	Volatiles %	Fixed C %	S %	S. E. MJ/kg
3 (A+B+C+D)	31.6	23.6	39.0	0.38	20.1
4 (A+B+C+D+E)	42.5	21.8	29.7	0.36	16.3

Figure 6 - Coal Seam Core Log & Proximate Analyses

DDH MP-3



	Ash %	Volatiles %	Fixed C %	S %	S. E. MJ/kg
1 (A+B)	50.8	19.8	24.1	0.28	13.7
2 (A+B)	17.6	26.0	50.9	0.41	25.8
3 (A+B+C)	29.2	26.2	38.2	0.40	20.9
4	54.8	19.0	19.8	0.25	10.9
5 (A+B+C)	38.4	20.4	34.6	0.30	17.4

Figure 7 - Coal Seam Core Log & Proximate Analyses

drainage and the uplift of the MP-2 site relative to MP-1 is probably due to a fault along which a creek has incised, approximately 50 metres east of MP-2.

Gross seam (and nett coal) thickness decreases to the SW, from 3.12 metres at MP-1 to 1.85 metres at MP-3 (Table 1).

Table 1

Hole	Collar RL (m)	Top Main Seam RL (m)	Gross Coal Thickness (m)	Nett Coal (m)
MP-1	361.10	340.97	3.12	2.20
MP-2	376.45	337.23	2.59	1.62
MP-3	364.48	344.96	1.85	1.26

The seam consists of from 9 to 11 plys with multiple thin dirt bands and overall is of low to marginal quality. More detailed, ply by ply analyses are required together with washability trials, before the viability of the coal can be determined.

FUTURE EXPLORATION

Geological and tenement boundaries limit the potential for significant additional coal on the EL. The coal discovered to date requires a program of bulk sampling and washing trials at Merrywood, plus a costing of road transport alternatives between Mt. Puzzler and Merrywood, to evaluate the economics of this prospect.

No further exploration is warranted but the resource has potential in future to add reserves to the Merrywood operation if viable washability and transport costs can be achieved.

Future work with its economic bias and dependency on timing would best be done via a Retention Licence.

APPENDIX 1

MERRYWOOD COAL COMPANY PTY. LTD. DRILLING LOG SHEET.

Comment DDH site MP-1 is wrongly labelled on BH0-3 in Fig. 3

TENEMENT: EL 3/91	LOCATION / SITE. DDH MP-1 590704 E ~~5376xx~~ N	SAMPLE TYPE. DRILL CORE NQ INCLIN. -90°	SAMPLED BY : KM (DATE) 30-3-94	COAL SECTIONS. 20.13 to 23.25 m.
PROJECT : MT PUZZLER			LOGGED BY : KM (DATE) 22-3-94	

SAMPLE No.	5376564 DESCRIPTION.	INTERVAL (m.)	DESCRIPTION.
0.0 - 9.10	SANDSTONE : brown, oxid. weathered med. lithic SST. common flasers wisps coaly debris, minor coarsening-up cycles within overall fining-up trend. Coaly debris enriched at base.		Open Hole Blade Bit 0.0 - 2.8 m.
9.0 - 20.13	SANDSTONE: grey, fresh med. lithic SST, common basal mdst pebble/ Coarse SST units in fining-up cycles (especially 11.6 - 11.9 m) Common slickensides on fracture partings with coal frags. Fault with ferroy cement and intense carbonate alteration 12.33 - 12.78		Oxid - Fresh transition 8.1 - 9.1 m. BASE OXIDATION 9.1 m
20.13 - 20.64	COAL : Dull, minor bright bands (5mm), concentrated in middle of ply minor white carbonate in cleats, no sulphide visible, dirt band 20.50 - 20.51. Low density coal		Abrupt roof contact
20.64 - 20.86	CLAYSTONE: banded, beige/white indurated CLYST (? tuffaceous), black-grey Carb. mudst.		
20.86 - 20.98	COAL : Dull/bright 50/50 quality coal grading down to lower grade.		
20.98 - 21.04	DIRT BAND: brown, cream speckled, indurated, clayey		
21.04 - 21.27	COAL : Dull/bright 60/40 in upper 9cm, grading down to dull heavier coal with minor carb mdst. dirt bands < 1cm.		
21.27 - 21.37	MUDSTONE: Carb mdst, laminated dirty coal		
21.37 - 21.50	COAL : Dull/bright 50/50, low density quality coal minor pyrite, calcite on fractures. clay films on laminae in dull coal		
21.50 - 21.55	DIRT BAND: grey laminated mdst.		
21.55 - 21.58	COAL : Dull/bright 50/50		
21.58 - 21.61	DIRT BAND: cream grey indurated claystone.		
21.61 - 21.68	COAL : Dull/bright 60/40, med. density.		
21.68 - 21.77	DIRT BAND: cream grey, indurated claystone, ? tuffaceous.		
21.77 - 21.80	COAL: Bright, blocky fracture, low density quality coal.		
21.80 - 22.17	MUDSTONE: grey laminated carb. mdst, part indurated. Abund. coaly flasers at top. pyrite on fractures, partings. Bright coal band 21.83 - 21.85		
22.17 - 22.53	COAL : Dull, heavy, minor dirt bands < 1cm.		

MERRYWOOD COAL COMPANY PTY. LTD. DRILLING LOG SHEET.

TENEMENT: EL3/91	LOCATION / SITE.	SAMPLE TYPE.	SAMPLED BY : (DATE)	COAL SECTIONS.
PROJECT : Mt. Pozzer	DDH MP-1		LOGGED BY : (DATE)	

SAMPLE No.	DESCRIPTION.	INTERVAL (m.)	DESCRIPTION.
22.53-22.70	COAL : Dull/bright 50/50, banded, low density		
22.70-22.73	DIRTBAND: brown indurated claystone, ? ash		
22.73-23.13	COAL: Dull minor bright uniform low density coal		
23.13-23.17	MUDSTONE: Carb. mudstone within coal seam.		
23.17-23.25	COAL : Dull minor bright uniform low density coal		
23.25-23.37	MUDSTONE: Carb. heavy. Clayey		
23.37-23.80	MUDSTONE : grey laminated grading down to fine lithic SST.		CORE LOSS IN TOP SECTION.
23.80-25.88	SANDSTONE: grey. med. lithic in multiple fining-up cycles.		
	EOH		

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MERRYWOOD COAL COMPANY PTY. LTD. DRILLING LOG SHEET.

Note: collar is at BH 02 on Fig. 3 Unknown 11/4/95

TENEMENT: EL 3/91	LOCATION / SITE.	SAMPLE TYPE.	SAMPLED BY : KM (DATE) 30-3-94.	COAL SECTIONS.
PROJECT : MT. PUZZLER	PDH MP-2 590561 E 5376444 N	DRILL CORE, NQ INCLIN. -90°	LOGGED BY : KM (DATE) 23-3-94	13.85 to 14.85 m 39.22 to 41.81 m.

SAMPLE No.	DESCRIPTION.	INTERVAL (m)	DESCRIPTION.
00 - 13.5	SCREE: brown soil, decomp. SST dolerite talus		Open Hole Blade Bit
13.5 - 13.85	MUDSTONE: laminated grey > carb. mdst, soft, frest. - Core Loss		0.0 - 13.5m
13.85 - 14.09	COAL: Dull heavy coal with several 2 cm dirt bands		Casing 0 - 6 m.
14.09 - 14.29	COAL: Dull/bright 50/50, less dense towards base, blocky fractures, minor calcite in veins/cleats.		Base Oxidation ~ 13.5m. erosional top coal contact.
14.29 - 14.34	COAL: interlaminated med. density coal/carb mdst.		
14.34 - 14.38	DIRT BAND: beige dense indurated claystone		
14.38 - 14.75	COAL: Dull/bright 50/50 clean quality coal, minor calcite in cleats		
14.75 - 14.85	COAL: interlam. dull/bright 50/50 coal in 1cm bands with soft grey brown mdst bands		
14.85 - 16.12	MUDSTONE: grey clayey grading down to Sltst.		Core Loss
16.12 - 20.05	SANDSTONE: grey fine lithic SST in fining-up cycles with sltst, mdst tops.		
20.05 - 20.65	SANDSTONE: interbedded med, fine lithic SST with common coaly laminae.		
20.65 - 21.20	SANDSTONE: fining-up cycles of fine SST - sltst. - mdst.		
21.20 - 23.38	SANDSTONE: grey massive med-coarse lithic SST		
23.38 - 24.20	SANDSTONE: fining-up cycles of fine lithic SST - sltst. - mdst.		
24.20 - 38.44	SANDSTONE: grey med-coarse lithic SST in thick beds, fining-up cycles, mdst pebbles, concentrations of coaly flasers common at base cycles conglom. bands 24.90 - 25.2, 26.20 - 26.85, 30.95 - 31.05, 34.67 - 34.70 coaly flaser-rich band 28.70 - 29.70 mdst lens 32.30 - 32.44 zone of coaly laminae 31.20 - 31.50, 32.40, 32.90		
38.44 - 39.19	SANDSTONE: fining-up cycle of fine lithic SST, sltst, muddy sltst.		erosional top coal contact.
39.19 - 39.20	COAL: Dull minor bright ? band (? disrupted).		
39.20 - 39.22	MUDSTONE: grey clayey with grit, sand, clay pellets		
39.22 - 39.56	COAL: Dull minor bright uniform medium density, minor dirt bands at 39.40, 39.41, 39.52.		TOP Coal Seam 39.22
39.56 - 39.58	CLAYSTONE: beige cream laminated indurated, with coaly flasers.		
39.58 - 39.67	COAL: Dull/bright 60/40, quality coal, low calcite.		
39.67 - 39.77	COAL: interlaminated dull heavy coal/indurated clayey, ? tuffaceous dirt bands. lenses of claystone with sed. deformation structures.		

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MERRYWOOD COAL COMPANY PTY. LTD. DRILLING LOG SHEET.

TENEMENT: EL 3/91	LOCATION / SITE.	SAMPLE TYPE.	SAMPLED BY : (DATE)	COAL SECTIONS.
PROJECT : MT. AZZLER	DDH MP-2		LOGGED BY : (DATE)	

SAMPLE No.	DESCRIPTION.	INTERVAL (m.)	DESCRIPTION.
39.77 - 39.84	COAL : Dull minor bright, uniform low density.		
39.84 - 39.89	DIRT BAND : Cream - beige indurated clayst.		
39.89 - 40.20	COAL : Dull minor bright, uniform low density trace calcite in cleats		
40.20 - 40.23	DIRT BAND : beige cream clayey, speckled at top (? tuffaceous)		
40.23 - 40.44	MUDSTONE : grey clayey		
40.44 - 40.62	COAL : Dull heavy, common thin clayey dirt bands		
40.62 - 40.65	COAL : Dull, med. density coal		
40.65 - 40.67	DIRT BAND : brown clayst, indurated.		
40.67 - 40.84	COAL : Dull/bright 50/50 interbedded with Dull minor bright - good quality coal.		
40.84 - 40.87	DIRT BAND : Deformed grey mdst with coaly flasers, erosional base		
40.87 - 40.90	COAL : Dull/bright 50/50		
40.90 - 40.94	DIRT BAND : cream, beige clayst with coaly frags		
40.94 - 41.34	COAL : Dull/bright 70/30 interbanded, clean low density coal minor calcite		
41.34 - 41.42	DIRT BAND : beige indurated clayst with coaly top		
41.42 - 41.81	COAL : Dull minor bright, mainly low-med density with dirty section in centre of sty.		Abrupt basal contact
41.81 - 42.38	MUDSTONE : grey clayey laminated.		
42.38 - 43.22	SANDSTONE : fining-up cycles of fine l.thic SST / slst / grey mdstone with coaly laminae		
43.22 - 43.36	CLAYSTONE : pale grey, indurated, hard		
43.36 - 43.60	MUDSTONE : black carb mdst with interlamin. grey deformed mdst.		
43.60 - 44.25	SANDSTONE : fining-up cycles of fine lithic SST, slst, carb. grey mdst with coaly laminae		
44.25 - 44.35	COAL : Dull heavy grading down to carb mdst.		
44.35 - 44.47	MUDSTONE : dk grey carb mdst. interlam. with grey mdst with coaly laminae. Erosional top to massive SST.		
44.47 - 45.45	SANDSTONE : grey massive med. lithic SST.		
	EOH.		

MERRYWOOD COAL COMPANY PTY. LTD. DRILLING LOG SHEET

UTS location of this hole is plotted as BH01 in Fig. 3 only 16/4/95

TENEMENT: EL 3/91	LOCATION / SITE.	SAMPLE TYPE.	SAMPLED BY : KM (DATE) 30-3-94.	COAL SECTIONS.
PROJECT : MT. PUZZLE	DDH MP-3 590203 E 5376326 N	DRILL CORE NQ INCLIN. -90°	LOGGED BY : KM (DATE) 24-3-94	19.72 to 21.57 m

SAMPLE No.	DESCRIPTION.	INTERVAL (m.)	DESCRIPTION.
0.0 - 3.0	SCREE: brown clay, decomp. SST, minor dolerite frags		Open Hole Blade Bit 0.0 - 6.24m
3.0 - 6.24	SANDSTONE: yell. brown decomp. lithic SST.		Casing to 6.0m.
6.24 - 14.05	SANDSTONE: brown, grey, med. lithic SST oxid. minor mdst. pebble, coal fragment conglomeratic bands, minor vertical fractures		BASE OXIDATION 14.05m.
14.05 - 15.60	SANDSTONE: grey, fresh massive med. lithic SST minor coaly laminae		
15.60 - 19.72	MUDSTONE: grey, massive, minor silty laminae and locally abundant coaly laminae		Abrupt roof contact
19.72 - 19.77	COAL: Bright/dull top. clean, low density coal with blocky fractures, minor calcite in cleats.		
19.77 - 19.93	COAL: interbedded papery coal / carb mdst, grading down to mainly dull heavy coal		
19.93 - 20.16	COAL: Dull minor bright, medium density, minor 5mm dirt band.		
20.16 - 20.21	MUDSTONE: grey beige, clayey		
20.21 - 20.29	COAL: Dull minor bright, low density clean coal		
20.29 - 20.31	MUDSTONE: grey soft clayey with partings on laminae.		
20.31 - 20.47	COAL: Dull minor bright uniform clean coal		
20.47 - 20.48	DIRT BAND: grey brown mdst.		
20.48 - 20.64	COAL: Dull/bright 50/50, clean uniform, low density coal		
20.64 - 20.66	DIRT BAND: white beige indurated claystone (? tuff), deformed fabric		
20.66 - 20.68	COAL: Dull/bright 50/50 clean, uniform, low density		
20.68 - 20.74	DIRT BAND: brown beige indurated clayst.		
20.74 - 20.75	COAL: Dull minor bright		
20.75 - 20.79	DIRT BAND: interlaminated grey mdst, coaly laminae		
20.79 - 21.03	COAL: Dull minor bright, low density, increased bright bands at top, bottom.		
21.03 - 21.20	MUDSTONE: grey clayey, unstable on drying		
21.20 - 21.46	COAL: Dull minor bright uniform clean coal heavier at top (including minor dirt bands)		
21.46 - 21.48	DIRT BAND: beige soil-like (? ped structures) clayst.		
21.48 - 21.52	COAL: Dull minor bright, 5mm mdst band near base.		
21.52 - 21.56	DIRT BAND: grey mdst.		
21.56 - 21.57	COAL: Dull minor bright		Base coal section 21.57m
21.57 - 23.01	SANDSTONE: grey massive med. lithic SST abund. coaly flasers, cross laminae, cross		

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MERRYWOOD COAL COMPANY PTY. LTD. DRILLING LOG SHEET.

TENEMENT: EL 3/91	LOCATION / SITE.	SAMPLE TYPE.	SAMPLED BY : (DATE)	COAL SECTIONS.
PROJECT : MT. PUZZLER	DDH MP-3		LOGGED BY : (DATE)	

SAMPLE No.	DESCRIPTION.	INTERVAL (m.)	DESCRIPTION.
	Bedding. Common white carbonate cement		
23.01-25.87	SILTSTONE/SANDSTONE: interbedded Slt/fine lithic SST. Coaly laminae, minor grey mdst bands		
25.87-26.52	MUDSTONE: grey clayey, hard brittle, fractured, partly indurated		Core loss
26.52-33.00	SANDSTONE: grey, massive med. lithic SST., bleached white, calcite cement in part. Common cross beds. Coaly wisps.		
	EOH.		

DDH MP-1

DDH MP-2

DDH MP-2

DDH MP-3

SGS SGS Australia Pty. Ltd. (A.C.N. 000 964 278)

ANALYTICAL REPORT

rom: SGS PORT KEMBLA
ur Reference: EP2141

Date: 19.4.94
Client Reference: SLIMLINE CORES
Attn: MR. J. MIEDECKE

Sample Reference	Mass	Total Moisture	Inherent Moisture	Ash	Volatile Matter	Fixed Carbon	Sulphur	Specific Energy
	g	%	%	%	%	%	%	MJ/kg
MPDDH1-S1	1540.7	8.1	5.6	28.1	26.0	40.3	0.46	21.49
MPDDH1-S2	460.4	8.3	6.3	27.6	29.1	36.8	0.52	21.67
MPDDH1-S3	2068.0	7.3	5.6	38.4	21.8	34.2	0.34	17.47
MPDDH2-S1	1005.8	6.3	4.8	43.8	21.4	30.6	0.29	15.68
MPDDH2-S2	927.8	7.4	5.6	25.7	26.2	42.5	0.41	22.88
MPDDH2-S3	1809.4	7.5	6.8	31.6	23.8	39.0	0.36	20.07
MPDDH2-S4	2723.3	6.8	6.0	42.5	21.8	29.7	0.36	16.28
MPDDH3-S1	668.3	7.8	5.5	50.6	19.8	24.1	0.28	13.71
MPDDH3-S2	493.2	7.6	5.5	17.6	26.0	50.9	0.41	25.81
MPDDH3-S3	397.5	7.9	6.4	29.2	26.2	38.2	0.40	20.92
MPDDH3-S4	839.2	6.7	6.4	64.8	19.0	19.8	0.25	10.89
MPDDH3-S5	643.6	9.3	8.6	38.4	20.4	34.6	0.30	17.42
RGDDH1-S1	2387.5	4.4	2.5	29.8	24.8	43.1	0.30	21.92
RGDDH2-S1	2365.5	4.3	3.0	61.8	12.8	22.3	0.16	9.30
RGDDH3-S1	660.7	5.6	3.4	25.6	21.9	49.1	0.40	24.72
RGDDH3-S2	282.5	6.7	3.7	26.2	20.1	47.0	0.36	23.12
RGDDH3-S3	1155.0	9.5	8.8	22.6	22.6	51.2	0.37	25.65
RGDDH3-S4	2087.6	9.1	4.3	22.6	23.3	49.8	0.39	25.16
RGDDH3-S5	2173.5	8.0	3.8	30.7	23.4	42.1	0.35	22.37
Moisture Basis		AR	AD	AD	AD	AD	AD	AD

Regards
John Winterbottom

Fax
(002) 31 1548

Ken,

Please find enclosed from James at Merrywood.

Regards,
Helen