

APPENDIX 31A

**COAL BANK SAMPLE**

**COAL:DAW MILL**

BCC COAL RANK CODE:802

**GRADE:SINGLES**

ECE / ISO CLASSIFICATION:711

**SEAM:THICK COAL**

PROXIMATE ANALYSIS (% a.d.)		ULTIMATE ANALYSIS (%)		ASH ANALYSIS (% on ash)	
Moisture	6.1	Carbon (dmmf)	81.3	Na <sub>2</sub> O	1.5
Ash	4.4	Hydrogen (dmmf)	4.8	K <sub>2</sub> O	0.5
Volatile matter	35.7	Oxygen (dmmf)	11.5	CaO	12.0
Fixed carbon	53.8	Nitrogen (dmmf)	1.28	MgO	2.5
Volatile matter (dmmf)	40.4			Fe <sub>2</sub> O <sub>3</sub>	11.2
HARDGROVE INDEX	35	Organic sulphur (db)	1.12	Al <sub>2</sub> O <sub>3</sub>	23.9
		Sulphate as S (db)	<0.1	SiO <sub>2</sub>	36.8
CAKING PROPERTIES		Pyritic sulphur as S (db)	0.28	SO <sub>3</sub>	12.9
Swelling Index	1			TiO <sub>2</sub>	1.1
Gray-King Coke Type	C	Chlorine (db)	0.21	Mn <sub>3</sub> O <sub>4</sub>	0.4
		Carbon dioxide (db)	0.45	P <sub>2</sub> O <sub>5</sub>	<0.3
		Mineral matter (db)	5.84		
CALORIFIC VALUE kJ / kg (daf)	32820	MACERAL ANALYSIS (% by volume , mmf)			
		Vitrinite	66		
ASH FUSION RANGE (°C) *		Exinite	13		
Deformation temp.	1240	Inertinite	21		
Hemisphere temp.	1270				
Flow temp.	1320				

\*Test atmosphere: reducing (50% CO<sub>2</sub> / 50% H<sub>2</sub>)

This analysis is typical of this specially selected sample, but there may be slight variations between the data given above and that of the actual sample supplied.

ad: as analysed

db: dry basis

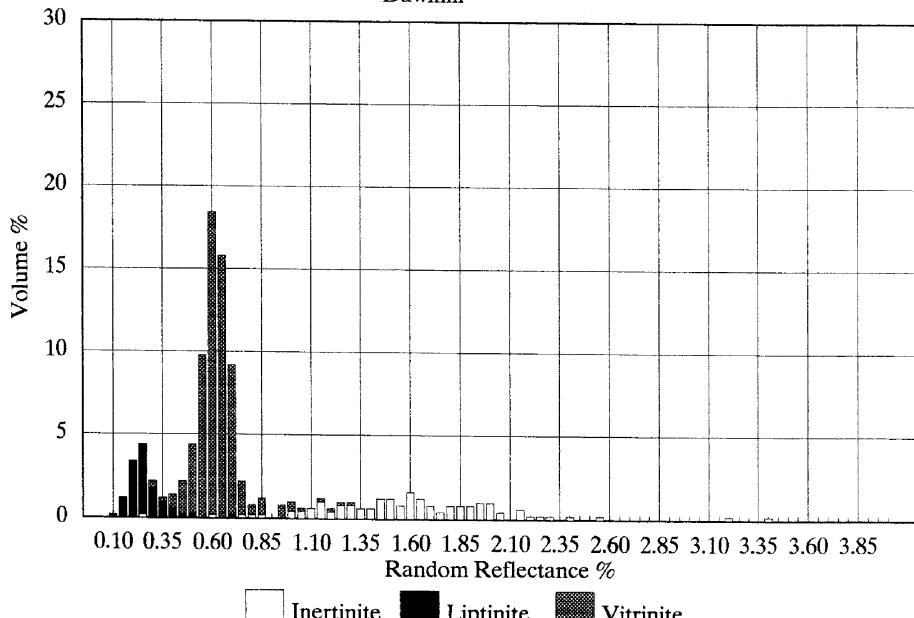
daf: dry , ash free

dmmf: dry , mineral matter free

mmf: mineral matter free

APPENDIX 31B

**INTERACTIVE REFLECTANCE HISTOGRAM**  
Dawmill



Mean random vitrinite reflectance 0.60  
Vitrinite Standard Deviation 0.12

APPENDIX 32A

COAL BANK SAMPLE

COAL:LEA HALL

GRADE:SINGLES

SEAM:

BCC COAL RANK CODE:802

ECE / ISO CLASSIFICATION:811

PROXIMATE ANALYSIS (% a.d.)		ULTIMATE ANALYSIS (%)		ASH ANALYSIS (% on ash)	
Moisture	8.6	Carbon (dmmf)	81.1	Na <sub>2</sub> O	8.6
Ash	3.0	Hydrogen (dmmf)	5.8	K <sub>2</sub> O	0.2
Volatile matter	35.2	Oxygen (dmmf)	10.2	CaO	17.6
Fixed carbon	53.2	Nitrogen (dmmf)	1.63	MgO	1.2
Volatile matter (dmmf)	40.0			Fe <sub>2</sub> O <sub>3</sub>	11.0
		Organic sulphur (db)	0.78	Al <sub>2</sub> O <sub>3</sub>	16.4
		Sulphate as S (db)	<0.01	SiO <sub>2</sub>	19.0
CAKING PROPERTIES		Pyritic sulphur as S (db)	0.18	SO <sub>3</sub>	22.9
Swelling Index	1.5			TiO <sub>2</sub>	0.7
Gray-King Coke Type	D	Chlorine (db)	0.89	Mn <sub>3</sub> O <sub>4</sub>	0.1
		Carbon dioxide (db)	0.11	P <sub>2</sub> O <sub>5</sub>	2.2
		Mineral matter (db)	3.80		
CALORIFIC VALUE kJ / kg (daf)	33480	MACERAL ANALYSIS (% by volume , mmf)			
		Vitrinite	76		
ASH FUSION RANGE (°C) *		Exinite	13		
Deformation temp.	1080	Inertinite	11		
Hemisphere temp.	1130				
Flow temp.	1180				

\*Test atmosphere: reducing (50% CO<sub>2</sub> / 50% H<sub>2</sub>)

This analysis is typical of this specially selected sample, but there may be slight variations between the data given above and that of the actual sample supplied.

ad: as analysed

db: dry basis

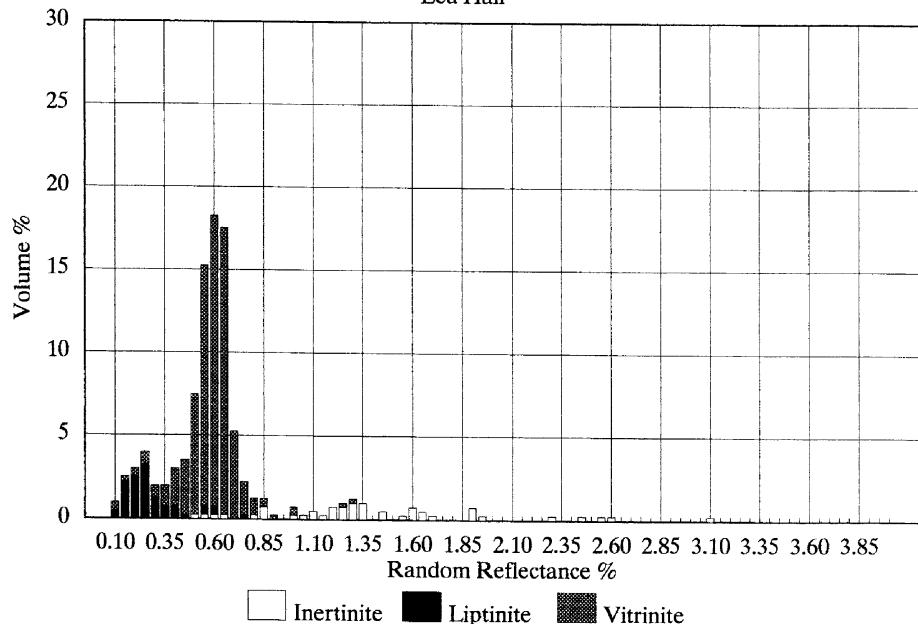
daf: dry , ash free

dmmf: dry , mineral matter free

mmf: mineral matter free

APPENDIX 32B

INTERACTIVE REFLECTANCE HISTOGRAM  
Lea Hall



APPENDIX 33A

COAL BANK SAMPLE

COAL: KALTIM PRIMA

GRADE: SMALLS

BCC COAL RANK CODE: 802

PROXIMATE ANALYSIS		ULTIMATE ANALYSIS		ASH ANALYSIS		ASH FUSION RANGE (Deg.C)
(% a.d.)	(%)	Carbon (dmmf)	80.7	Na2O	1.0	
Loss on Ignition (db)	95.0	Hydrogen (dmmf)	6.2	K2O	2.3	
Moisture	4.6	Oxygen (dmmf)	10.6	CaO	2.0	
Ash	4.8	Total Nitrogen (dmmf)	1.85	MgO	1.4	Reducing atmosphere
Volatile matter	41.4	Total Sulphur (db)	1.64	Fe2O3	17.0	(50% CO2 / 50% H2)
Fixed carbon	49.3	Chlorine (db)	0.02	Al2O3	22.1	Deformation temp.
Volatile matter (dmmf)	46.1	Mineral matter (db)	6.02	SiO2	51.1	Hemisphere temp.
<b>HARDGROVE INDEX</b>		Carbon dioxide (db)	0.06	TiO2	0.9	Flow temp
		Forms of Sulphur		SO3	0.9	
<b>CAKING PROPERTIES</b>		Organic Sulphur (db)	1.24	P2O5	1.1	Oxidising atmosphere
Swelling Index	2.5	Sulphate as S (db)	0.07	Mn3O4	<0.1	
Gray-King Coke Type	C	Pyritic Sulphur as S (db)	0.34			Deformation temp.
		Forms of Nitrogen*				Hemisphere temp.
<b>MACERAL ANALYSIS</b>		Pyridinic Nitrogen (db)	23			Flow temp
(% by volume, mmf)		Pyrolytic Nitrogen (db)	62			1430
Vitrinite	94.8	Quaternary Nitrogen (db)	14	<b>KEY</b>	as analysed	
Liptinite	1.4			ad:	dry basis	
Inertinite	3.8			db:	dry, ash free	
Mean Random Vitrinite Reflectance	0.63	<b>CALORIFIC VALUE</b>	31539	dmmf:	dry, mineral matter free	
Vitrinite Reflectance Standard Deviation	0.09	kJ / kg (db)	33212	mmf:	mineral matter free	
		kJ / kg (daf)				

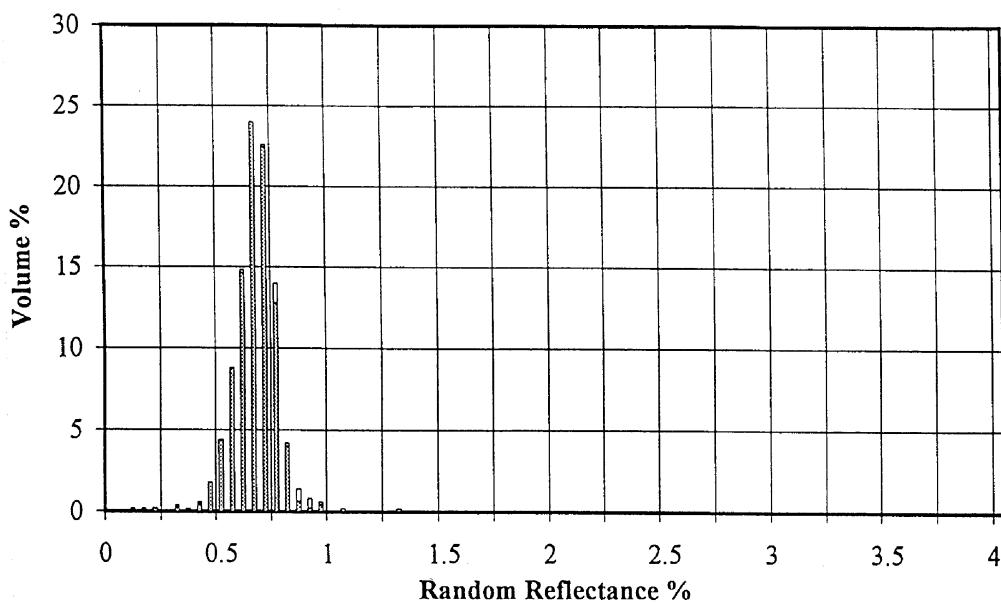
This analysis is typical of the selected sample but there may be slight variations between the data given and that of actual samples supplied.

\* It is generally accepted that <10% of coal-N is bound in amino groups and that the inclusion of amino-N tends to make the fit worse when resolving N 1s spectra.

Where two sets of "Forms of Nitrogen" values have been given (the second set in brackets), the spectral curve fitting is inconclusive.

APPENDIX 33B

INTERACTIVE REFLECTANCE HISTOGRAM  
KALTIM PRIMA COAL



<input type="checkbox"/> Inertinite
<input checked="" type="checkbox"/> Liptinite
<input type="checkbox"/> Vitrinite

## APPENDIX 34A

## COAL BANK SAMPLE

COAL:BADDESLEY

GRADE:SINGLES

SEAM:

BCC COAL RANK CODE:802

ECE / ISO CLASSIFICATION:811

PROXIMATE ANALYSIS (% a.d.)		ULTIMATE ANALYSIS (%)		ASH ANALYSIS (% on ash)	
Moisture	6.5	Carbon (dmmf)	80.4	Na <sub>2</sub> O	1.3
Ash	4.0	Hydrogen (dmmf)	5.7	K <sub>2</sub> O	2.2
Volatile matter	37.6	Oxygen (dmmf)	10.9	CaO	4.2
Fixed carbon	51.9	Nitrogen (dmmf)	1.37	MgO	1.5
Volatile matter (dmmf)	42.5			Fe <sub>2</sub> O <sub>3</sub>	9.3
		Organic sulphur (db)	1.37	Al <sub>2</sub> O <sub>3</sub>	26.7
		Sulphate as S (db)	<0.01	SiO <sub>2</sub>	49.7
CAKING PROPERTIES	1	Pyritic sulphur as S (db)	0.27	SO <sub>3</sub>	2.9
Swelling Index	C			TiO <sub>2</sub>	1.2
Gray-King Coke Type		Chlorine (db)	0.28	Mn <sub>3</sub> O <sub>4</sub>	0.1
		Carbon dioxide (db)	0.25	P <sub>2</sub> O <sub>5</sub>	0.7
		Mineral matter (db)	5.37		
CALORIFIC VALUE					
kJ / kg (daf)	33000				
		MACERAL ANALYSIS (% by volume , mmf)			
		Vitrinite	75		
ASH FUSION RANGE (°C) *		Exinite	10		
Deformation temp.	1240	Inertinite	15		
Hemisphere temp.	1260				
Flow temp.	1290				

\*Test atmosphere: reducing (50% CO<sub>2</sub> / 50% H<sub>2</sub>)

This analysis is typical of this specially selected sample, but there may be slight variations between the data given above and that of the actual sample supplied.

ad: as analysed

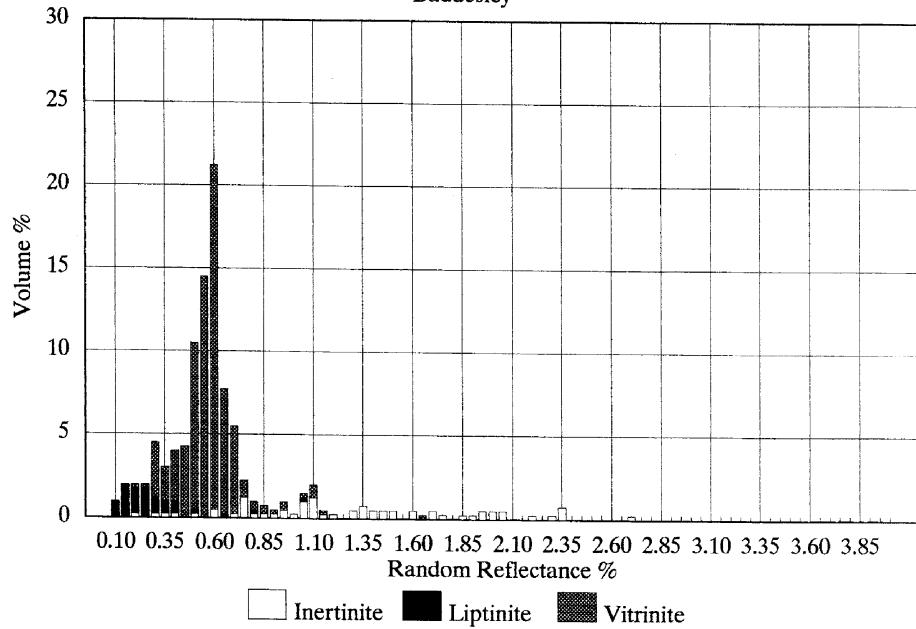
db: dry basis

daf: dry , ash free

dmmf: dry , mineral matter free

mmf: mineral matter free

## APPENDIX 34B

INTERACTIVE REFLECTANCE HISTOGRAM  
Baddesley

## APPENDIX 35A

## COAL BANK SAMPLE

COAL:NADINS (OPEN CAST)

GRADE:SINGLES

SEAM:

BCC COAL RANK CODE:902

ECE / ISO CLASSIFICATION:801

PROXIMATE ANALYSIS (% a.d.)		ULTIMATE ANALYSIS (%)		ASH ANALYSIS (% on ash)	
Moisture	13.3	Carbon (dmmf)	80.1	Na <sub>2</sub> O	0.3
Ash	7.4	Hydrogen (dmmf)	5.1	K <sub>2</sub> O	2.4
Volatile matter	34.9	Oxygen (dmmf)	12.0	CaO	8.7
Fixed carbon	44.4	Nitrogen (dmmf)	1.9	MgO	2.8
Volatile matter (dmmf)	45.1			Fe <sub>2</sub> O <sub>3</sub>	27.5
HARDGROVE INDEX	35	Organic sulphur (db)	0.82	Al <sub>2</sub> O <sub>3</sub>	17.1
		Sulphate as S (db)	0.08	SiO <sub>2</sub>	31.5
CAKING PROPERTIES		Pyritic sulphur as S (db)	1.34	SO <sub>3</sub>	7.1
Swelling Index	0.5			TiO <sub>2</sub>	0.6
Gray-King Coke Type	B	Chlorine (db)	0.03	Mn <sub>3</sub> O <sub>4</sub>	0.4
		Carbon dioxide (db)	0.84	P <sub>2</sub> O <sub>5</sub>	0.8
CALORIFIC VALUE		Mineral matter (db)	10.78		
kJ / kg (daf)	32420				
ASH FUSION RANGE (°C) *		MACERAL ANALYSIS (% by volume , mmf)			
Deformation temp.	1100	Vitrinite	76	ad: as analysed	
Hemisphere temp.	1120	Exinite	10	db: dry basis	
Flow temp.	1240	Inertinite	14	daf: dry , ash free	

\*Test atmosphere: reducing (50% CO<sub>2</sub> / 50% H<sub>2</sub>)

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ad: as analysed

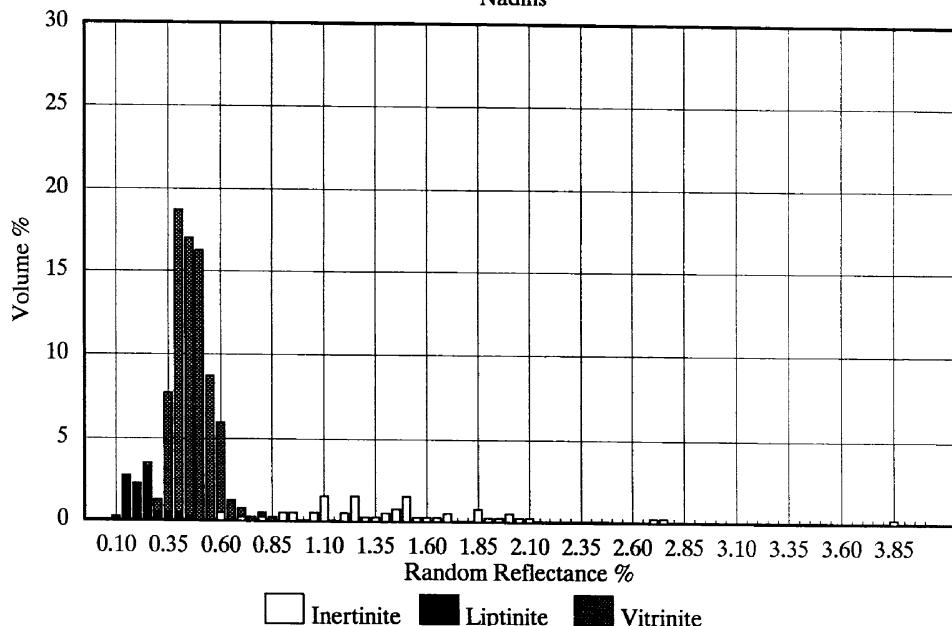
db: dry basis

daf: dry , ash free

dmmf: dry , mineral matter free

mmf: mineral matter free

## APPENDIX 35B

INTERACTIVE REFLECTANCE HISTOGRAM  
NadinsMean random vitrinite reflectance 0.44  
Vitrinite Standard Deviation 0.08