GCR1986/01

CARBON CONSULTING INTERNATIONAL PTY. LTD.

CCI/4765/86

ANALYSIS & TESTING OF SAMPLES FROM CATOS CREEK AND HUNTSMAN CREEK

January 1986

CARBON CONSULTING INTERNATIONN. PTY. LTD.

HEAD OFFICE:
6 CALLISTEMON CLOSE, WARABROOK NEWCASTLE, NSW, 2304
TEL. (049) 67 4477 TELEX: 28245 (CCIAUS)
P.O. BOX 281, MAYFIELD, NSW, 2304, AUSTRALIA
INCORPORATED IN NEW SOUTH WALES

This Laboratory is registered by the National Association of Testing Authorities Australia. The test(s) herein have been performed in accordance with its terms of registration and in accordance with the following standards:-

Methods for the sampling of Hard Coal	AS1676 (1975)
Methods for Float & Sink Testing of Hard Coal and Presentation of Results	AS1661 (1979)
Size Analysis of Coal	BS1016-17 (1979) ISO1953 (1972)
Free Moisture of Coal & Total Moisture of Hard Coal	AS1038-1 (1980)
Apparent Relative Density (Coal)	AS1038-21 (1983)
Determination of the Relative Density of Hard Coal	AS1038-21 (1983)
Moisture in the Analysis Sample	AS1038-3 (1979)
Determination of Ash	AS1038-3 (1979)
Determination of Volatile Matter	AS1038-3 (1979)
Gross Specific Energy of Coal	AS1038-5 (1979)
Carbon & Hydrogen	AS1038-6 (1971)
Nitrogen	AS1038-6 (1971)
Carbon Dioxide	AS1038-6 (1971)
Total Sulphur	AS1038-6 (1971)
Total Sulphur in Coal (Leco High Temperature)	C.C.I. DIA Sept. 1981
Chlorine in Coal	AS1038-8 (1980)
Forms of Sulphur	AS1038-11 (1982)
Fusibility of Coal & Coke Ash	AS1038-15 (1972)
Analysis of Coal Ash (Bomb Digestion-Flame Atomic Absorption Spectrometric Method)	AS1038-14.1 (1981)
Phosphorus in Coal (Bomb Digestion)	AS1038-9 (1977)
Method for Determining the Hardgrove Grindability Index of Hard Coal	AS1038-20 (1981)
Crucible Swelling Number	AS1038-12.1 (1979)
Gray King Coke Type	AS1038-12.2 (1980)
AA Dilatometer	ISO349 (1975)
Gieseler Plastometer	AS2137 (1981)

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ORIGIN: Department of Mines, Tasmania

JOB NO. 4765

DESCRIPTION: Three coal samples from Seams of Permian Age

DATE REC'D 16/1/86

REPORTED TO: Ms. C. Bacon

C.C.

SAMPLE NO	MASS (kg)	DESCRIPTION
10633	1.876	Catos Creek, Upper Seam
10635	1.862	Catos Creek, Bottom Seam
10634	3.826	Huntsmans Creek Seam

REPORTED BY D Gallagher

DATE 5/2/86

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ANALYSIS REPORT

SAMPLE NO.		10633	10635	10634
Relative Density				
Total Moisture (as)	%			
Moisture (ad)	%	3.6	4.6	4.3
ANALYSIS BASIS		ad	ad	ad
Ash	%	8.8	11.1	10.1
Volatile Matter	%	40.3	40.1	48.9
Fixed Carbon	%	47.3	44.2	36.7
Total Sulphur	%	3.75	2.41	2.91
Chlorine	%			
Phosphorus	%			
Specific Energy	MJ/kg	29.36	27.88	29.60
Carbon	%			
Hydrogen	%			
Nitrogen	%			
Carbon Dioxide	%			
DRY, ASH-FREE BASIS				
Volatile Matter	%	46.0	47.6	57.1
Specific Energy	MJ/kg	33.52	33.08	34.58
Carbon	%			
Hydrogen	%			
Nitrogen	%			
Sulphur	%			
Oxygen (diff.)	%			
Crucible Swelling Number				
Gray-King Coke Type				
Hardgrove Grindability Index				
ASH FUSION TEMPERATURES (reducing atmosphere)				
Deformation	°C			
Spherical	°C			
Hemisphere	°C			
Flow	°C			

REPORTED BY Gallagher

DATE 5/2/86

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ORIGIN : Department of Mines, Tasmania JOB NO : 4765

DESCRIPTION : Three coal samples from DATE REC'D : 16/1/86

Seams of Permian Age

REPORTED TO : Ms. C. Bacon C.C.

MACERAL & REFLECTIVITY REPORT

Sample No : 4765/10633 MT NICHOLAS CATO UPPER

Vitrinite A	Vitrinite	18.6	19.0	53	54.1
Vitrinite B		34.0	34.8		
Sporinite	Exinite	9.6	9.9		
Cutinite		2.0	2.0		
Resinite		1.3	1.3	13	13.3
Micrinite	Inertinite	1.6	1.6		
Macrinite		0.3	0.3		
Semi - Fusinite		15.6	15.9		
Fusinite		1.6	1.6	32	32.7
Inertodetrinite		13.3	13.6		
Minerals *		2.1		2	

Remarks * Clay, quartz, pyrite. n - (Macerals). 100

V Step	Reflectance Range - %	Class Midpoints	Vitrinite A	Vitrinite B	Vitrinite A+B	Exinite	Semi Inertinite	Reactives	
3	0.30 - 0.35	0.325							
	0.35 - 0.40	0.375							
4	0.40 - 0.45	0.425		7	7				
	0.45 - 0.50	0.475	2	20	22				
5	0.50 - 0.55	0.525	15	26	41				
	0.55 - 0.60	0.575	11	12	23				
6	0.60 - 0.65	0.625	6		6				
	0.65 - 0.70	0.675	1		1				
7	0.70 - 0.75	0.725							
	0.75 - 0.80	0.775							
8	0.80 - 0.85	0.825							
	0.85 - 0.90	0.875							
9	0.90 - 0.95	0.925							
	0.95 - 1.00	0.975							
10	1.00 - 1.05	1.025							
	1.05 - 1.10	1.075							
Total Number of Readings			35	65	100				
Mean ~~Random~~ Maximum Reflectance			0.56	0.51	0.53	Percentage of Reactives			
Standard Deviation of Distribution			.046	.045	.051	Percentage of Non - Reactives			
Composition Balance Index						Strength Index			
Estimated (ASTM) Coke Stability Index									

Analysed by : A McHugh
Reported by : O'Gallagher
Date : 5/2/86

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ORIGIN : Department of Mines, Tasmania JOB NO : 4765

DESCRIPTION : Three coal samples from DATE REC'D : 16/1/86

Seams of Permian Age

REPORTED TO : Ms. C. Bacon C.C.

MACERAL & REFLECTIVITY REPORT

Sample No : 4765/10634 MT NICHOLAS CATO LOWER

Vitrinite A	Vitrinite	8.3	8.6	41 43.2
Vitrinite B		33.3	34.6	
Sporinite	Exinite	2.6	2.7	25*
Cutinite		2.3	2.4	
Resinite		3.3	3.5	
Micrinite	Inertinite	2.0	2.1	30
Macrinite		1.0	1.0	
Semi - Fusinite		12.0	12.4	
Fusinite		2.3	2.4	
Inertodetrinite		12.3	12.8	
Minerals *		4.0	-	4
		Alginite* 16.6	17.3	

Remarks * Clay, quartz, pyrite. n - (Macerals).

V Step	Reflectance Range - %	Class Midpoints	Vitrinite A	Vitrinite B	Vitrinite A+B	Exinite	Semi Inertinite	Reactives	
3	0.30 - 0.35 0.35 - 0.40	0.325 0.375	1	9	10				
4	0.40 - 0.45 0.45 - 0.50	0.425 0.475	7 10	35 31	42 41				
5	0.50 - 0.55 0.55 - 0.60	0.525 0.575	2	5	7				
6	0.60 - 0.65 0.65 - 0.70	0.625 0.675							
7	0.70 - 0.75 0.75 - 0.80	0.725 0.775							
8	0.80 - 0.85 0.85 - 0.90	0.825 0.875							
9	0.90 - 0.95 0.95 - 1.00	0.925 0.975							
10	1.00 - 1.05 1.05 - 1.10	1.025 1.075							
Total Number of Readings			20	80	100				
Mean ~~Random~~ Maximum Reflectance			0.46	0.45	0.45	Percentage of Reactives			
Standard Deviation of Distribution			.036	.038	.038	Percentage of Non - Reactives			
Composition Balance Index						Strength Index			
Estimated (ASTM) Coke Stability Index									

Analysed by : A McHugh
Reported by : D Gallagher
Date : 5/2/86

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DESCRIPTION : Three coal samples from Seams of Permian Age — DATE REC'D : 16/1/86

REPORTED TO : Ms. C. Bacon — C.C.

MACERAL & REFLECTIVITY REPORT

Sample No : 4765/10635 MT NICHOLAS HUNTSMANS CK

Vitrinite A	Vitrinite		9.1	10.6	42
Vitrinite B			32.6	34.2	
Sporinite	Exinite		7.6	8.0	14
Cutinite			4.0	4.2	
Resinite			3.0	3.1	
Micrinite	Inertinite		2.6	2.7	39
Macrinite			2.6	2.7	
Semi - Fusinite			15.3	16.0	
Fusinite			3.0	3.1	
Inertodetrinite			15.0	15.4	
Minerals *		95.4	4.6	-	5
				100	

Remarks * Clay, quartz, pyrite. n - (Macerals).

V Step	Reflectance Range - %	Class Midpoints	Vitrinite A	Vitrinite B	Vitrinite A+B	Exinite	Semi Inertinite	Reactives	
3	0.30 - 0.35	0.325							
	0.35 - 0.40	0.375		2	2				
4	0.40 - 0.45	0.425	1	24	25				
	0.45 - 0.50	0.475	6	38	44				
5	0.50 - 0.55	0.525	10	14	24				
	0.55 - 0.60	0.575	5		5				
6	0.60 - 0.65	0.625							
	0.65 - 0.70	0.675							
7	0.70 - 0.75	0.725							
	0.75 - 0.80	0.775							
8	0.80 - 0.85	0.825							
	0.85 - 0.90	0.875							
9	0.90 - 0.95	0.925							
	0.95 - 1.00	0.975							
10	1.00 - 1.05	1.025							
	1.05 - 1.10	1.075							
Total Number of Readings			22	78	100				
Mean ~~Random~~ Maximum Reflectance			0.52	0.47	0.48	Percentage of Reactives			
Standard Deviation of Distribution			.041	.037	.044	Percentage of Non - Reactives			
Composition Balance Index						Strength Index			
Estimated (ASTM) Coke Stability Index									

Analysed by : A McHugh
Reported by : [signature]
Date : 5/2/86