K - FORDING RIVER 84A

APPENDIX III

DRILL HOLE SAMPLE ANALYSES

ii) PETROGRAPHIC ANALYSES

ii) Petrographic Analyses

INTRODUCTION

This report describes the petrography of the following coals:-

PG-84-071	PG-84-085
PG-84-072	PG-84-086
PG-84-073	PG-84-087
PG-84-074	PG-84-088
PG-84-076	PG-84-089
PG-84-077	PG-84-090
PG-84-078	PG-84-091
PG-84-079	PG-84-092
PG-84-080	PG-84-093
PG-84-081	PG-84-101
PG-84-082	PG-84-102
PG-84-083	PG-84-103
PG-84-084	PG-84-104

SAMPLE PREPARATION

Each coal sample was coned and quartered and reduced to provide sufficient material for two pellets. This coal was then placed in 25 mm plastic moulds and mixed with cold-set epoxy resin, to which had been added a portion of hardener. The coal-mixture was gently pressure-compacted to concentrate coal grains and allowed to set. This is the preferred method of sample preparation for all ranks of coal, as it does not affect the reflectance of vitrinites nor the fluorescence of exinites. The pellets were subsequently ground and polished on Beuhler equipment.

The polished samples were then immersed in a bath containing a solution of organic dye and potassium hydroxide. Oxidized coal becomes stained an olive-green, whereas unoxidized coal does not.

PETROGRAPHIC EXAMINATION

The polished samples were examined using a Leitz Orthoplan Compact-model microscope-photometer. The control panel of the microscope and a Swift Automated Point Counter are interfaced to a Hewlett-Packard 85 microcomputer, which both captures and processes the data. An Epson MX-80 printer, a Hewlett-Packard 7225A plotter and a Hewlett-Packard 9816 microcomputer are used for electronic

computation, tabulation and draughting of results.

The reflectances of one hundred individual vitrinite 'A' grains were measured in the rank analysis. Standardization of photometer-readout was performed before and after the analysis, if neccessary. Maximum reflectance values were retained by the computer.

Five hundred grains were counted on each of the two pellets for the maceral analysis, at a traverse interval of 0.5 mm.

In this report, the following approach was used to identify reactive semifusinite.

Final results of some recent research done in this laboratory on coking coals from Quintette, Line Creek, and Fording Coal, suggest that semifusinites should be regarded as reactive if their random reflectance is less than the mean random reflectance of the associated vitrinite 'A', plus 0.22%. The actual threshold is determined by the following relationship:-

$$\text{Threshold reflectance (\%)} = 0.987\ R_{o}max + 0.236$$

By using this threshold value, predicted levels of Inertinite macerals are closest to those considered to have been present in the above-described coking coals when they were carbonized in CANMET's Laboratory in Ottawa. And by using such a threshold value among similar coals, confidence in predicted rheological and coking parameters should be improved.

The reflectance of each semifusinite maceral encountered during the maceral analysis was measured, and depending upon the result, was assigned to either the inert or reactive category. In the Appendix, this method of assigning reactive semifusinite is described as that of Pearson.

At the end of one thousand readings, the mean, standard deviation, variance and a correction for the mineral-matter content were electronically computed and printed.

In addition, the reflectance values of all macerals encountered in the maceral analysis were measured, to construct a reflectogram, which is the "fingerprint" of a coal sample.

RESULTS

The results of all analyses are contained in the Appendix, and are shown in the Summary of Petrographic Analysis.

For these coals, the reported results are:-

* Reflectance values
* Reflectance statistics
* Vitrinite-type histogram
* 1000 Maceral counts
* Maceral statistics
* Maceral-distribution diagram
* 1000-point Reflectogram
* Predicted Strength & Balance Index
* Predicted coke strength
* Predicted free swelling index
* Percentage oxidized coal

Fording Coal Limited
Sample PG-84-011
Pellet #1860/1
RH. #1917 Seam "5 Lower

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.29
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	3.86
VARIANCE	0.0025
STANDARD DEVIATION	0.0499
SKEWNESS	-0.0007
KURTOSIS	2.8163

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.15	3	3.00
3	1.20	13	13.00
4	1.25	36	36.00
5	1.30	32	32.00
6	1.35	15	15.00
7	1.40	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	3.00
V12	49.00
V13	47.00
V14	1.00

Fording Coal Limited
Sample PG-84-012
Pellet #1861/1
R.H. #1921 Seam "A upper

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.32
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.58
VARIANCE	0.0037
STANDARD DEVIATION	0.0605
SKEWNESS	-0.3347
KURTOSIS	4.3945

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.10	1	1.00
4	1.15	4	4.00
5	1.20	4	4.00
6	1.25	18	18.00
7	1.30	43	43.00
8	1.35	20	20.00
9	1.40	7	7.00
10	1.45	3	3.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	5.00
V12	22.00
V13	63.00
V14	10.00

Fording Coal Limited
Sample PG-84-013
Pellet #1862/1

R.H "1921 Seam "4

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.35
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.38
VARIANCE	0.0035
STANDARD DEVIATION	0.0591
SKEWNESS	-0.1118
KURTOSIS	2.3681

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.20	4	4.00
4	1.25	15	15.00
5	1.30	24	24.00
6	1.35	36	36.00
7	1.40	17	17.00
8	1.45	4	4.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V12	19.00
V13	60.00
V14	21.00

Fording Coal Limited
Sample PG-84-014
Pellet #1863/1
R.H. #1922 Seam #9

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.30
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.28
VARIANCE	0.0067
STANDARD DEVIATION	0.0817
SKEWNESS	5.8241
KURTOSIS	49.3792

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.15	2	2.00
3	1.20	7	7.00
4	1.25	49	49.00
5	1.30	27	27.00
6	1.35	12	12.00
7	1.40	2	2.00
18	1.95	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	2.00
V12	56.00
V13	39.00
V14	2.00
V19	1.00

Fording Coal Limited
Sample PG-84-015
Pellet #1864/1
R.H #1924 Seam #4 upper

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.31
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.31
VARIANCE	0.0032
STANDARD DEVIATION	0.0564
SKEWNESS	-0.5199
KURTOSIS	4.9138

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.05	1	1.00
5	1.20	8	8.00
6	1.25	29	29.00
7	1.30	33	33.00
8	1.35	27	27.00
9	1.40	1	1.00
10	1.45	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V10	1.00
V12	37.00
V13	60.00
V14	2.00

Fording Coal Limited
Sample PG-84-016
Pellet #1865/1
RH 1924 Seam #4

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.32
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	3.94
VARIANCE	0.0027
STANDARD DEVIATION	0.0520
SKEWNESS	0.2212
KURTOSIS	2.7249

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.20	7	7.00
4	1.25	25	25.00
5	1.30	36	36.00
6	1.35	25	25.00
7	1.40	6	6.00
8	1.45	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V12	32.00
V13	61.00
V14	7.00

Fording Coal Limited
Sample PG-84-017
Pellet #1866/1

RH "1924.

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.37
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	3.74
VARIANCE	0.0026
STANDARD DEVIATION	0.0512
SKEWNESS	-0.4532
KURTOSIS	4.4814

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.15	1	1.00
3	1.20	1	1.00
4	1.25	4	4.00
5	1.30	26	26.00
6	1.35	40	40.00
7	1.40	22	22.00
8	1.45	6	6.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	1.00
V12	5.00
V13	66.00
V14	28.00

Fording Coal Limited
Sample PG-84-018
Pellet #1867/1
RH #1928 Seam #2

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.27
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	3.72
VARIANCE	0.0022
STANDARD DEVIATION	0.0472
SKEWNESS	-0.0201
KURTOSIS	2.4755

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.15	5	5.00
3	1.20	26	26.00
4	1.25	40	40.00
5	1.30	23	23.00
6	1.35	6	6.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	5.00
V12	66.00
V13	29.00

Fording Coal Limited
Sample PG-84-019
Pellet #1868/1
RH "1928 Seam 199

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.25
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	7.36
VARIANCE	0.0085
STANDARD DEVIATION	0.0920
SKEWNESS	5.2647
KURTOSIS	43.0866

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.10	3	3.00
4	1.15	17	17.00
5	1.20	32	32.00
6	1.25	33	33.00
7	1.30	10	10.00
8	1.35	3	3.00
9	1.40	1	1.00
20	1.95	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	20.00
V12	65.00
V13	13.00
V14	1.00
V19	1.00

Fording Coal Limited
Sample PG-84-020
Pellet #1869/1
RH #1930 Seam #4

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.30
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	3.97
VARIANCE	0.0027
STANDARD DEVIATION	0.0518
SKEWNESS	-0.8261
KURTOSIS	3.9215

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.10	1	1.00
4	1.15	3	3.00
5	1.20	8	8.00
6	1.25	23	23.00
7	1.30	45	45.00
8	1.35	18	18.00
9	1.40	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	4.00
V12	31.00
V13	63.00
V14	2.00

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....	M1870	
Description.....	PG-84-021	RH "1883 Seam L
Ash	9.5%	Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	14
V-8.....%	73
V-9.....%	13
V-10.....%	
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	68.8
* Reactive Semifusinite.....%	3.1
Exinite.....%	5.7
Total Reactives.....%	77.6

INERT COMPONENTS

* Inert Semifusinite.....%	10.3
Macrinite.....%	0.9
Fusinite.....%	3.3
Inertodetrinite.....%	2.6
Mineral-Matter.....%	5.3
Total Inerts.....%	22.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.84
Calculated Balance Index.....	0.81
Calculated Strength Index.....	3.01
Calculated Stability Index.....	34.0
Predicted Free Swelling Index...	7

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1871
Description..... PG-84-022 RH 1883 Seam K
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7	%	1
V-8	%	53
V-9	%	44
V-10	%	2
V-11	%	

REACTIVE COMPONENTS

Vitrinite	%	
* Reactive Semifusinite	%	
Exinite	%	
Total Reactives	%	81.2

INERT COMPONENTS

* Inert Semifusinite	%	
Macrinite	%	
Fusinite	%	
Inertodetrinite	%	
Mineral-Matter	%	5.3
Total Inerts	%	18.8

PETROGRAPHIC INDICES

Mean Reflectance	%	0.90
Calculated Balance Index		0.63
Calculated Strength Index		3.19
Calculated Stability Index		36.2
Predicted Free Swelling Index		7.5

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1872
Description..... PG-84-023 RH #1883 Seam J3
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	49
V-9.....%	47
V-10.....%	4
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	61.1
* Reactive Semifusinite.....%	6.0
Exinite.....%	5.3
Total Reactives.....%	72.4

INERT COMPONENTS

* Inert Semifusinite.....%	16.6
Macrinite.....%	1.0
Fusinite.....%	2.7
Inertodetrinite.....%	2.0
Mineral-Matter.....%	5.3
Total Inerts.....%	27.6

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.90
Calculated Balance Index.....	1.02
Calculated Strength Index.....	3.32
Calculated Stability Index.....	41.9
Predicted Free Swelling Index...	6.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1873
Description..... PG-84-024 RH #1883 Seam J_2
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	1
V-8.....%	37
V-9.....%	57
V-10.....%	5
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	64.4
* Reactive Semifusinite.....%	6.4
Exinite.....%	7.1
Total Reactives.....%	77.9

INERT COMPONENTS

* Inert Semifusinite.....%	11.5
Macrinite.....%	0.9
Fusinite.....%	2.3
Inertodetrinite.....%	2.1
Mineral-Matter.....%	5.3
Total Inerts.....%	22.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.91
Calculated Balance Index.....	0.76
Calculated Strength Index.....	3.35
Calculated Stability Index.....	41.5
Predicted Free Swelling Index...	7.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1874
Description..... PG-84-025 RH #1883 Seam I_U
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	13
V-9.....%	78
V-10.....%	9
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	70.3
* Reactive Semifusinite.....%	4.9
Exinite.....%	2.7
Total Reactives.....%	77.9

INERT COMPONENTS

* Inert Semifusinite.....%	12.0
Macrinite.....%	0.1
Fusinite.....%	3.6
Inertodetrinite.....%	1.1
Mineral-Matter.....%	5.3
Total Inerts.....%	22.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.94
Calculated Balance Index.....	0.74
Calculated Strength Index.....	3.52
Calculated Stability Index.....	45.2
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....	M1875	
Description.....	PG-84-026 RH #1883 Seam I	
Ash	9.5%	Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	20
V-9.....%	69
V-10.....%	11
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	58.2
* Reactive Semifusinite.....%	4.3
Exinite.....%	3.5
Total Reactives.....%	66.0

INERT COMPONENTS

* Inert Semifusinite.....%	21.6
Macrinite.....%	0.7
Fusinite.....%	4.0
Inertodetrinite.....%	2.4
Mineral-Matter.....%	5.3
Total Inerts.....%	34.0

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.94
Calculated Balance Index.....	1.35
Calculated Strength Index.....	3.45
Calculated Stability Index.....	41.0
Predicted Free Swelling Index...	5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1876
Description..... PG-84-027 Castle Mtn. B1
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	4
V-8.....%	80
V-9.....%	14
V-10.....%	2
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	51.9
* Reactive Semifusinite.....%	6.4
Exinite.....%	21.3
Total Reactives.....%	79.6

INERT COMPONENTS

* Inert Semifusinite.....%	10.8
Macrinite.....%	0.4
Fusinite.....%	0.8
Inertodetrinite.....%	3.1
Mineral-Matter.....%	5.3
Total Inerts.....%	20.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.86
Calculated Balance Index.....	0.71
Calculated Strength Index.....	3.04
Calculated Stability Index.....	33.5
Predicted Free Swelling Index...	7

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1877
Description..... PG-84-028 Castle Mtn. D-3
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	17
V-10.....%	69
V-11.....%	14
V-12.....%	

REACTIVE COMPONENTS

Vitrinite.....%	81.3
* Reactive Semifusinite.....%	3.4
Exinite.....%	3.9
Total Reactives.....%	88.6

INERT COMPONENTS

* Inert Semifusinite.....%	2.7
Macrinite.....%	0.3
Fusinite.....%	2.1
Inertodetrinite.....%	1.0
Mineral-Matter.....%	5.3
Total Inerts.....%	11.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.04
Calculated Balance Index.....	0.32
Calculated Strength Index.....	3.59
Calculated Stability Index.....	36.0
Predicted Free Swelling Index...	8.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1878
Description..... PG-84-029 Castle Mtn. B-6
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-8	%	2
V-9	%	75
V-10	%	23
V-11	%	

REACTIVE COMPONENTS

Vitrinite	%	
* Reactive Semifusinite	%	
Exinite	%	
Total Reactives	%	86.8

INERT COMPONENTS

* Inert Semifusinite	%	
Macrinite	%	
Fusinite	%	
Inertodetrinite	%	
Mineral-Matter	%	5.3
Total Inerts	%	13.2

lnl:cnl

PETROGRAPHIC INDICES

Mean Reflectance	%	0.96
Calculated Balance Index		0.39
Calculated Strength Index		3.39
Calculated Stability Index		34.8
Predicted Free Swelling Index		8.0

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1879
Description..... PG-84-030 Castle Mtn. B-4
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	1
V-8.....%	65
V-9.....%	21
V-10.....%	10
V-11.....%	3

REACTIVE COMPONENTS

Vitrinite.....%	72.9
* Reactive Semifusinite.....%	3.4
Exinite.....%	12.7
Total Reactives.....%	89.0

INERT COMPONENTS

* Inert Semifusinite.....%	4.1
Macrinite.....%	0.1
Fusinite.....%	0.3
Inertodetrinite.....%	1.2
Mineral-Matter.....%	5.3
Total Inerts.....%	11.0

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.90
Calculated Balance Index.....	0.34
Calculated Strength Index.....	3.00
Calculated Stability Index.....	20.6
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....	M1880	
Description.....	PG-84-031 Castle Mtn. B-2	
	Ash 9.5%	Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	15
V-8.....%	83
V-9.....%	2
V-10.....%	

REACTIVE COMPONENTS

Vitrinite.....%	55.8
* Reactive Semifusinite.....%	4.9
Exinite.....%	13.9
Total Reactives.....%	74.6

INERT COMPONENTS

* Inert Semifusinite.....%	14.5
Macrinite.....%	0.4
Fusinite.....%	1.1
Inertodetrinite.....%	4.1
Mineral-Matter.....%	5.3
Total Inerts.....%	25.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.83
Calculated Balance Index.....	0.97
Calculated Strength Index.....	2.95
Calculated Stability Index.....	33.2
Predicted Free Swelling Index...	6.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....	M1881	
Description.....	PG-84-032	Castle Mtn. B-25 A,B,C.
Ash	9.5%	Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	39
V-10.....%	58
V-11.....%	3
V-12.....%	

REACTIVE COMPONENTS

Vitrinite.....%	69.3
* Reactive Semifusinite.....%	9.7
Exinite.....%	1.9
Total Reactives.....%	80.9

INERT COMPONENTS

* Inert Semifusinite.....%	7.8
Macrinite.....%	1.8
Fusinite.....%	2.1
Inertodetrinite.....%	2.1
Mineral-Matter.....%	5.3
Total Inerts.....%	19.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.01
Calculated Balance Index.....	0.59
Calculated Strength Index.....	3.68
Calculated Stability Index.....	46.5
Predicted Free Swelling Index...	8.5

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....		M1882	
Description.....		PG-84-033	Repeater Rd. Needle Coal
	Ash	9.5%	Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-5.....%	36
V-6.....%	62
V-7.....%	2
V-8.....%	

REACTIVE COMPONENTS

Vitrinite.....%	59.7
* Reactive Semifusinite.....%	2.6
Exinite.....%	31.8
Total Reactives.....%	94.1

INERT COMPONENTS

* Inert Semifusinite.....%	0.2
Macrinite.....%	0.0
Fusinite.....%	0.2
Inertodetrinite.....%	0.2
Mineral-Matter.....%	5.3
Total Inerts.....%	5.9

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.61
Calculated Balance Index.....	0.23
Calculated Strength Index.....	2.38
Calculated Stability Index.....	0.00
Predicted Free Swelling Index...	3

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-034
Pellet #1883/1
RH #1880 Seam J3

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.91
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	5.39
VARIANCE	0.0024
STANDARD DEVIATION	0.0492
SKEWNESS	0.1287
KURTOSIS	3.3711

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	9	9.00
4	0.85	24	24.00
5	0.90	43	43.00
6	0.95	22	22.00
7	1.00	1	1.00
8	1.05	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	33.00
V 9	65.00
V10	2.00

Fording Coal Limited
Sample PG-84-035
Pellet #1884/1
RH #1880 Seam J1

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.93
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.57
VARIANCE	0.0027
STANDARD DEVIATION	0.0516
SKEWNESS	0.3956
KURTOSIS	4.0895

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	4	4.00
4	0.85	24	24.00
5	0.90	39	39.00
6	0.95	25	25.00
7	1.00	6	6.00
8	1.05	1	1.00
9	1.10	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	28.00
V 9	64.00
V10	7.00
V11	1.00

Fording Coal Limited
Sample PG-84-036
Pellet #1885/1

RH "1880 Seam I

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.96
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	4.92
VARIANCE	0.0022
STANDARD DEVIATION	0.0472
SKEWNESS	-0.1275
KURTOSIS	3.4308

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	1	1.00
4	0.85	7	7.00
5	0.90	27	27.00
6	0.95	45	45.00
7	1.00	17	17.00
8	1.05	3	3.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	8.00
V 9	72.00
V10	20.00

Fording Coal Limited
Sample PG-84-037
Pellet #1886/1
R.H 1880 Seam H

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.97
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.12
VARIANCE	0.0035
STANDARD DEVIATION	0.0594
SKEWNESS	-0.4281
KURTOSIS	2.9026

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	2	2.00
4	0.85	8	8.00
5	0.90	19	19.00
6	0.95	37	37.00
7	1.00	23	23.00
8	1.05	11	11.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	10.00
V 9	56.00
V10	34.00

Fording Coal Limited
Sample PG-84-038
Pellet #1887/1
RH #1881 Seam K.

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.92
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.56
VARIANCE	0.0026
STANDARD DEVIATION	0.0513
SKEWNESS	0.4889
KURTOSIS	3.4744

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	6	6.00
4	0.85	29	29.00
5	0.90	31	31.00
6	0.95	25	25.00
7	1.00	8	8.00
9	1.10	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	35.00
V 9	56.00
V10	8.00
V11	1.00

Fording Coal Limited
Sample PG-84-039
Pellet #1888/1

RH #1881 Seam J3

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.90
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.86
VARIANCE	0.0028
STANDARD DEVIATION	0.0527
SKEWNESS	0.2276
KURTOSIS	3.0941

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.75	2	2.00
3	0.80	13	13.00
4	0.85	32	32.00
5	0.90	35	35.00
6	0.95	13	13.00
7	1.00	4	4.00
8	1.05	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 7	2.00
V 8	45.00
V 9	48.00
V10	5.00

Fording Coal Limited
Sample PG-84-040
Pellet #1889/1
RH #1801 Seam I

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.93
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.67
VARIANCE	0.0028
STANDARD DEVIATION	0.0528
SKEWNESS	0.4855
KURTOSIS	3.8984

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	4	4.00
4	0.85	19	19.00
5	0.90	36	36.00
6	0.95	33	33.00
7	1.00	4	4.00
8	1.05	3	3.00
9	1.10	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	23.00
V 9	69.00
V10	7.00
V11	1.00

Sample PG-84-041
Pellet #1890/1
RH 1881 Seam H?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.02
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	7.06
VARIANCE	0.0052
STANDARD DEVIATION	0.0720
SKEWNESS	1.5535
KURTOSIS	12.1830

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	1	1.00
4	0.85	2	2.00
5	0.90	4	4.00
6	0.95	32	32.00
7	1.00	27	27.00
8	1.05	25	25.00
9	1.10	8	8.00
15	1.40	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	3.00
V 9	36.00
V10	52.00
V11	8.00
V14	1.00

Fording Coal Limited
Sample FG-84-042
Pellet #1891/1
RH 1882 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.93
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.69
VARIANCE	0.0028
STANDARD DEVIATION	0.0530
SKEWNESS	0.0374
KURTOSIS	2.3013

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	2	2.00
4	0.85	25	25.00
5	0.90	31	31.00
6	0.95	31	31.00
7	1.00	10	10.00
8	1.05	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	27.00
V 9	62.00
V10	11.00

Fording Coal Limited
Sample PG-84-043
Pellet #1892/1
RH #1882 Seam Km ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.93
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.54
VARIANCE	0.0027
STANDARD DEVIATION	0.0517
SKEWNESS	0.1070
KURTOSIS	3.2558

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	3	3.00
4	0.85	18	18.00
5	0.90	37	37.00
6	0.95	32	32.00
7	1.00	7	7.00
8	1.05	3	3.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	21.00
V 9	69.00
V10	10.00

Fording Coal Limited
Sample PG-84-044
Pellet #1893/1
RH #1882 Seam

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.01
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.13
VARIANCE	0.0039
STANDARD DEVIATION	0.0622
SKEWNESS	0.2254
KURTOSIS	2.7890

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.85	1	1.00
3	0.90	12	12.00
4	0.95	27	27.00
5	1.00	29	29.00
6	1.05	24	24.00
7	1.10	4	4.00
8	1.15	3	3.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	1.00
V 9	39.00
V10	53.00
V11	7.00

Fording Coal Limited
Sample PG-84-045
Pellet #1894/1

RH #1882 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.10
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.25
VARIANCE	0.0033
STANDARD DEVIATION	0.0576
SKEWNESS	-0.8043
KURTOSIS	3.9769

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.90	4	4.00
4	0.95	3	3.00
5	1.00	4	4.00
6	1.05	33	33.00
7	1.10	37	37.00
8	1.15	15	15.00
9	1.20	4	4.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 9	7.00
V10	37.00
V11	52.00
V12	4.00

Fording Coal Limited
Sample PG-84-046
Pellet #1895/1
RH 1884 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.90
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.02
VARIANCE	0.0030
STANDARD DEVIATION	0.0543
SKEWNESS	0.0690
KURTOSIS	2.1628

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.75	1	1.00
3	0.80	15	15.00
4	0.85	34	34.00
5	0.90	24	24.00
6	0.95	22	22.00
7	1.00	4	4.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 7	1.00
V 8	49.00
V 9	46.00
V10	4.00

Fording Coal Limited
Sample PG-84-047
Pellet #1896/1

RH #1884 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.90
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	5.52
VARIANCE	0.0025
STANDARD DEVIATION	0.0497
SKEWNESS	0.5420
KURTOSIS	3.7128

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.75	1	1.00
3	0.80	10	10.00
4	0.85	38	38.00
5	0.90	31	31.00
6	0.95	17	17.00
7	1.00	2	2.00
8	1.05	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 7	1.00
V 8	48.00
V 9	48.00
V10	3.00

Fording Coal Limited
Sample PG-84-048
Pellet #1897/1
RH #1884 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.96
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	5.02
VARIANCE	0.0023
STANDARD DEVIATION	0.0480
SKEWNESS	-0.0634
KURTOSIS	3.5108

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	1	1.00
4	0.85	6	6.00
5	0.90	31	31.00
6	0.95	41	41.00
7	1.00	19	19.00
8	1.05	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	7.00
V 9	72.00
V10	21.00

Fording Coal Limited
Sample PG-84-049
Pellet #1898/1

RH 1885 Seam Km2

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.84
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.30
VARIANCE	0.0028
STANDARD DEVIATION	0.0532
SKEWNESS	0.0288
KURTOSIS	2.0787

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.70	3	3.00
4	0.75	15	15.00
5	0.80	32	32.00
6	0.85	32	32.00
7	0.90	17	17.00
8	0.95	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 7	18.00
V 8	64.00
V 9	18.00

Fording Coal Limited
Sample PG-84-051A
Pellet #1900A
R.H "1885 Seam K

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.94
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.39
VARIANCE	0.0026
STANDARD DEVIATION	0.0506
SKEWNESS	1.1844
KURTOSIS	7.6052

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.85	18	18.00
3	0.90	40	40.00
4	0.95	33	33.00
5	1.00	7	7.00
6	1.05	1	1.00
8	1.15	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	18.00
V 9	73.00
V10	8.00
V11	1.00

Fording Coal Limited
Sample PG-84-051B
Pellet #1900B
RH #1885 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.90
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.90
VARIANCE	0.0029
STANDARD DEVIATION	0.0534
SKEWNESS	-0.0457
KURTOSIS	2.1249

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.75	2	2.00
3	0.80	15	15.00
4	0.85	24	24.00
5	0.90	34	34.00
6	0.95	23	23.00
7	1.00	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 7	2.00
V 8	39.00
V 9	57.00
V10	2.00

Fording Coal Limited
Sample PG-84-052
Pellet #1901/1
RH #1885 Seam ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.93
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	5.23
VARIANCE	0.0024
STANDARD DEVIATION	0.0488
SKEWNESS	0.2389
KURTOSIS	2.7802

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	4	4.00
4	0.85	19	19.00
5	0.90	37	37.00
6	0.95	30	30.00
7	1.00	9	9.00
8	1.05	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	23.00
V 9	67.00
V10	10.00

Fording Coal Limited
Sample PG-84-053
Pellet #1902/1
RH "1885" Seam I

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.99
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.27
VARIANCE	0.0039
STANDARD DEVIATION	0.0621
SKEWNESS	0.0729
KURTOSIS	2.8510

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.85	8	8.00
3	0.90	16	16.00
4	0.95	31	31.00
5	1.00	28	28.00
6	1.05	13	13.00
7	1.10	3	3.00
8	1.15	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	8.00
V 9	47.00
V10	41.00
V11	4.00

Fording Coal Limited
Sample PG-84-054
Pellet #1903/1

R.H. #1885 Seam H ?

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.03
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.54
VARIANCE	0.0033
STANDARD DEVIATION	0.0573
SKEWNESS	-0.1805
KURTOSIS	2.9969

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.80	1	1.00
6	0.95	31	31.00
7	1.00	20	20.00
8	1.05	35	35.00
9	1.10	12	12.00
10	1.15	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	1.00
V 9	31.00
V10	55.00
V11	13.00

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number..... M1904
Description..... PG-84-055 7 seam grab 7-36
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	
V-12.....%	51
V-13.....%	49
V-14.....%	
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	57.6
* Reactive Semifusinite.....%	12.5
Exinite.....%	0.0
Total Reactives.....%	70.1

INERT COMPONENTS

* Inert Semifusinite.....%	18.5
Macrinite.....%	0.4
Fusinite.....%	3.8
Inertodetrinite.....%	1.9
Mineral-Matter.....%	5.3
Total Inerts.....%	29.9

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.30
Calculated Balance Index.....	1.51
Calculated Strength Index.....	5.26
Calculated Stability Index.....	60.5
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....	M1905
Description.....	PG-84-056 "L" Seam Clean
	Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	38
V-9.....%	61
V-10.....%	1

REACTIVE COMPONENTS

Vitrinite.....%	72.5
* Reactive Semifusinite.....%	5.9
Exinite.....%	5.1
Total Reactives.....%	83.5

INERT COMPONENTS

* Inert Semifusinite.....%	8.4
Macrinite.....%	0.2
Fusinite.....%	1.3
Inertodetrinite.....%	1.3
Mineral-Matter.....%	5.3
Total Inerts.....%	16.5

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.91
Calculated Balance Index.....	0.53
Calculated Strength Index.....	3.24
Calculated Stability Index.....	35.2
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

SAMPLE IDENTIFICATION

Laboratory Number.....	M1906
Description.....	PG-84-057 "M" Seam "1" Clean.
	Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	2
V-8.....%	38
V-9.....%	58
V-10.....%	2
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	73.9
* Reactive Semifusinite.....%	5.2
Exinite.....%	5.8
Total Reactives.....%	84.9

INERT COMPONENTS

* Inert Semifusinite.....%	7.0
Macrinite.....%	0.0
Fusinite.....%	1.2
Inertodetrinite.....%	1.6
Mineral-Matter.....%	5.3
Total Inerts.....%	15.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.91
Calculated Balance Index.....	0.48
Calculated Strength Index.....	3.19
Calculated Stability Index.....	33.0
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-059
Pellet #2032/1

RH # 923

1.0m Seam @ 213.5 m.

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.88
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.60
VARIANCE	0.0034
STANDARD DEVIATION	0.0579
SKEWNESS	0.8709
KURTOSIS	4.2529

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.75	5	5.00
3	0.80	28	28.00
4	0.85	28	28.00
5	0.90	30	30.00
6	0.95	5	5.00
7	1.00	2	2.00
8	1.05	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 7	5.00
V 8	56.00
V 9	35.00
V10	4.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #1932

14,

SAMPLE IDENTIFICATION

Laboratory Number..... M2033
Description..... PG-84-060
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	2
V-9.....%	70
V-10.....%	26
V-11.....%	2
V-12.....%	
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	69.4
* Reactive Semifusinite.....%	6.3
Exinite.....%	5.9
Total Reactives.....%	81.6

INERT COMPONENTS

* Inert Semifusinite.....%	9.0
Macrinite.....%	0.9
Fusinite.....%	2.1
Inertodetrinite.....%	1.1
Mineral-Matter.....%	5.3
Total Inerts.....%	18.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.97
Calculated Balance Index.....	0.58
Calculated Strength Index.....	3.57
Calculated Stability Index.....	44.0
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

702

Fording Coal Limited
Sample PG-84-061
Pellet #2034/1

RM1932 14 Lower

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	0.99
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	4.84
VARIANCE	0.0023
STANDARD DEVIATION	0.0477
SKEWNESS	0.5149
KURTOSIS	4.4786

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.85	2	2.00
3	0.90	15	15.00
4	0.95	46	46.00
5	1.00	30	30.00
6	1.05	5	5.00
7	1.10	1	1.00
8	1.15	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 8	2.00
V 9	61.00
V10	35.00
V11	2.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH 1932
* 13

SAMPLE IDENTIFICATION

Laboratory Number..... M2035
Description..... PG-84-062
Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	27
V-10.....%	56
V-11.....%	17
V-12.....%	

REACTIVE COMPONENTS

Vitrinite.....%	69.1
* Reactive Semifusinite.....%	6.5
Exinite.....%	1.8
Total Reactives.....%	77.4

INERT COMPONENTS

* Inert Semifusinite.....%	12.5
Macrinite.....%	0.2
Fusinite.....%	2.7
Inertodetrinite.....%	1.9
Mineral-Matter.....%	12.5
Total Inerts.....%	22.6

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.04
Calculated Balance Index.....	0.73
Calculated Strength Index.....	3.87
Calculated Stability Index.....	52.3
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #1932
#12

SAMPLE IDENTIFICATION

Laboratory Number.....	M2036
Description.....	PG-84-063

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	5
V-10.....%	47
V-11.....%	47
V-12.....%	1
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	61.5
* Reactive Semifusinite.....%	8.3
Exinite.....%	2.1
Total Reactives.....%	71.9

INERT COMPONENTS

* Inert Semifusinite.....%	18.5
Macrinite.....%	0.9
Fusinite.....%	2.0
Inertodetrinite.....%	1.4
Mineral-Matter.....%	5.3
Total Inerts.....%	28.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.09
Calculated Balance Index.....	1.00
Calculated Strength Index.....	4.16
Calculated Stability Index.....	57.3
Predicted Free Swelling Index...	8

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #1932
Upper

SAMPLE IDENTIFICATION

Laboratory Number.....	M2037
Description.....	PG-84-064

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	1
V-10.....%	21
V-11.....%	75
V-12.....%	3
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	62.4
* Reactive Semifusinite.....%	7.6
Exinite.....%	0.5
Total Reactives.....%	70.5

INERT COMPONENTS

* Inert Semifusinite.....%	16.7
Macrinite.....%	0.7
Fusinite.....%	2.9
Inertodetrinite.....%	3.9
Mineral-Matter.....%	5.3
Total Inerts.....%	29.5

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.13
Calculated Balance Index.....	1.11
Calculated Strength Index.....	4.33
Calculated Stability Index.....	59.0
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH 4921
48-57m.

SAMPLE IDENTIFICATION

Laboratory Number.....	M2038
Description.....	PG-84-065

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	16
V-11.....%	52
V-12.....%	22
V-13.....%	10
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	56.0
* Reactive Semifusinite.....%	9.1
Exinite.....%	1.5
Total Reactives.....%	66.6

INERT COMPONENTS

* Inert Semifusinite.....%	21.7
Macrinite.....%	0.2
Fusinite.....%	3.7
Inertodetrinite.....%	2.5
Mineral-Matter.....%	5.3
Total Inerts.....%	33.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.17
Calculated Balance Index.....	1.42
Calculated Strength Index.....	4.50
Calculated Stability Index.....	56.2
Predicted Free Swelling Index...	7

*** Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #921

112 - 117.5 m

SAMPLE IDENTIFICATION

Laboratory Number..... M2039
Description..... PG-84-066
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	1
V-11.....%	20
V-12.....%	71
V-13.....%	8
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	58.7
* Reactive Semifusinite.....%	12.2
Exinite.....%	0.7
Total Reactives.....%	71.6

INERT COMPONENTS

* Inert Semifusinite.....%	14.6
Macrinite.....%	0.4
Fusinite.....%	2.4
Inertodetrinite.....%	5.7
Mineral-Matter.....%	5.3
Total Inerts.....%	28.4

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.23
Calculated Balance Index.....	1.24
Calculated Strength Index.....	4.77
Calculated Stability Index.....	60.7
Predicted Free Swelling Index...	8

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #921

2105 to 2125

SAMPLE IDENTIFICATION

Laboratory Number..... M2040
Description..... PG-84-067
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	12
V-12.....%	27
V-13.....%	56
V-14.....%	5
V-15.....%	

REACTIVE COMPONENTS

Vitrinite.....%	49.2
* Reactive Semifusinite.....%	9.9
Exinite.....%	0.0
Total Reactives.....%	59.1

INERT COMPONENTS

* Inert Semifusinite.....%	24.7
Macrinite.....%	1.0
Fusinite.....%	3.7
Inertodetrinite.....%	6.2
Mineral-Matter.....%	5.3
Total Inerts.....%	40.9

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.30
Calculated Balance Index.....	2.49
Calculated Strength Index.....	5.15
Calculated Stability Index.....	51.0
Predicted Free Swelling Index...	6

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #921

232.5 – 2360

SAMPLE IDENTIFICATION

Laboratory Number.....	M2041
Description.....	PG-84-068

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	3
V-12.....%	28
V-13.....%	66
V-14.....%	3
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	40.2
* Reactive Semifusinite.....%	12.6
Exinite.....%	0.0
Total Reactives.....%	52.8

INERT COMPONENTS

* Inert Semifusinite.....%	33.8
Macrinite.....%	0.6
Fusinite.....%	3.8
Inertodetrinite.....%	3.7
Mineral-Matter.....%	5.3
Total Inerts.....%	47.2

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.31
Calculated Balance Index.....	3.32
Calculated Strength Index.....	5.04
Calculated Stability Index.....	41.5
Predicted Free Swelling Index... ln2	4

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

921

247 - 251.5

SAMPLE IDENTIFICATION

Laboratory Number..... M2042
Description..... PG-84-069
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	1
V-12.....%	20
V-13.....%	70
V-14.....%	9
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	46.3
* Reactive Semifusinite.....%	14.2
Exinite.....%	0.0
Total Reactives.....%	60.5

INERT COMPONENTS

* Inert Semifusinite.....%	25.8
Macrinite.....%	0.6
Fusinite.....%	4.0
Inertodetrinite.....%	3.8
Mineral-Matter.....%	5.3
Total Inerts.....%	39.5

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.33
Calculated Balance Index.....	2.53
Calculated Strength Index.....	5.45
Calculated Stability Index.....	52.5
Predicted Free Swelling Index...	6.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #917
Seam 5U

SAMPLE IDENTIFICATION

Laboratory Number..... M2072
Description..... PG-84-071
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10....%	
V-11....%	
V-12....%	13
V-13....%	64
V-14....%	23
V-15....%	
V-16....%	

REACTIVE COMPONENTS

Vitrinite....%	29.3
• Reactive Semifusinite....%	19.5
Exinite....%	0.0
Total Reactives....%	48.8

INERT COMPONENTS

* Inert Semifusinite....%	36.9
Macrinite....%	1.2
Fusinite....%	4.6
Inertodetrinite....%	3.2
Mineral-Matter....%	5.3
Total Inerts....%	51.2

PETROGRAPHIC INDICES

Mean Reflectance....%	1.36
Calculated Balance Index....	4.28
Calculated Strength Index....	5.32
Calculated Stability Index....	35.5
Predicted Free Swelling Index...	<4

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #917
Seam 5 Lower

SAMPLE IDENTIFICATION

Laboratory Number.....	M2073
Description.....	PG-84-072
	Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	2
V-12.....%	11
V-13.....%	62
V-14.....%	25
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	34.3
* Reactive Semifusinite.....%	17.9
Exinite.....%	0.0
Total Reactives.....%	52.2

INERT COMPONENTS

* Inert Semifusinite.....%	34.0
Macrinite.....%	0.9
Fusinite.....%	5.0
Inertodetrinite.....%	2.6
Mineral-Matter.....%	5.3
Total Inerts.....%	47.8

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.36
Calculated Balance Index.....	3.74
Calculated Strength Index.....	5.43
Calculated Stability Index.....	42.0
Predicted Free Swelling Index...	4

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #917
part Scan 4 Lower

SAMPLE IDENTIFICATION

Laboratory Number..... M2074
Description..... PG-84-073
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10....%	
V-11....%	1
V-12....%	1
V-13....%	26
V-14....%	63
V-15....%	9
V-16....%	

REACTIVE COMPONENTS

Vitrinite....%	45.7
* Reactive Semifusinite....%	18.0
Exinite....%	0.0
Total Reactives....%	63.7

INERT COMPONENTS

* Inert Semifusinite....%	23.4
Macrinite....%	0.4
Fusinite....%	4.4
Inertodetrinite....%	2.7
Mineral-Matter....%	5.3
Total Inerts....%	36.3

PETROGRAPHIC INDICES

Mean Reflectance....%	1.42
Calculated Balance Index....	2.77
Calculated Strength Index....	6.41
Calculated Stability Index....	56.5
Predicted Free Swelling Index...	7

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 917
part. 4 lower

SAMPLE IDENTIFICATION

Laboratory Number..... M2075
Description..... PG-84-074
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	
V-12.....%	5
V-13.....%	37
V-14.....%	50
V-15.....%	8
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	51.7
* Reactive Semifusinite.....%	14.6
Exinite.....%	0.0
Total Reactives.....%	66.3

INERT COMPONENTS

* Inert Semifusinite.....%	22.2
Macrinite.....%	0.5
Fusinite.....%	4.3
Inertodetrinite.....%	1.4
Mineral-Matter.....%	5.3
Total Inerts.....%	33.7

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.41
Calculated Balance Index.....	2.36
Calculated Strength Index.....	6.30
Calculated Stability Index.....	58.7
Predicted Free Swelling Index...	7

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #920
35.5 to 400-

SAMPLE IDENTIFICATION

Laboratory Number..... M2081
Description..... PG-84-080
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-8....%	1
V-9....%	1
V-10....%	26
V-11....%	69
V-12....%	3
V-13....%	
V-14....%	

REACTIVE COMPONENTS

Vitrinite....%	59.9
* Reactive Semifusinite....%	6.7
Exinite....%	1.6
Total Reactives....%	68.2

INERT COMPONENTS

* Inert Semifusinite....%	19.7
Macrinite....%	0.9
Fusinite....%	3.0
Inertodetrinite....%	2.9
Mineral-Matter....%	5.3
Total Inerts....%	31.8

PETROGRAPHIC INDICES

Mean Reflectance....%	1.12
Calculated Balance Index....	1.22
Calculated Strength Index....	4.24
Calculated Stability Index....	56.2
Predicted Free Swelling Index...	7.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #920
64.5 - 68.5

SAMPLE IDENTIFICATION

Laboratory Number.....	M2082
Description.....	PG-84-081
	Ash 34.4% Sulphur 0.53%

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	2
V-10.....%	2
V-11.....%	68
V-12.....%	26
V-13.....%	2
V-14.....%	
V-15.....%	

REACTIVE COMPONENTS

Vitrinite.....%	43.8
* Reactive Semifusinite.....%	7.7
Exinite.....%	0.3
Total Reactives.....%	51.8

INERT COMPONENTS

* Inert Semifusinite.....%	22.9
Macrinite.....%	1.1
Fusinite.....%	4.0
Inertodetrinite.....%	1.5
Mineral-Matter.....%	18.7
Total Inerts.....%	48.2

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.17
Calculated Balance Index.....	2.63
Calculated Strength Index.....	4.02
Calculated Stability Index.....	35.0
Predicted Free Swelling Index...	<4

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-082
Pellet #2083/1

RA #920

73 to 75

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.18
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.92
VARIANCE	0.0034
STANDARD DEVIATION	0.0582
SKEWNESS	0.3141
KURTOSIS	5.6055

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.95	1	1.00
4	1.05	5	5.00
5	1.10	11	11.00
6	1.15	46	46.00
7	1.20	30	30.00
8	1.25	3	3.00
9	1.30	2	2.00
10	1.35	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 9	1.00
V10	5.00
V11	57.00
V12	33.00
V13	4.00

Fording Coal Limited
Sample PG-84-083
Pellet #2084/1

RH 920

96 to 97.5

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.22
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	6.59
VARIANCE	0.0065
STANDARD DEVIATION	0.0804
SKEWNESS	0.1173
KURTOSIS	5.6347

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	0.90	1	1.00
4	0.95	1	1.00
6	1.05	2	2.00
7	1.10	9	9.00
8	1.15	20	20.00
9	1.20	35	35.00
10	1.25	22	22.00
11	1.30	3	3.00
12	1.35	4	4.00
13	1.40	1	1.00
14	1.45	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 9	2.00
V10	2.00
V11	29.00
V12	57.00
V13	7.00
V14	3.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH "920

99 to 101.5m

SAMPLE IDENTIFICATION

Laboratory Number.....	M2085
Description.....	PG-84-084

Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	2
V-11.....%	24
V-12.....%	69
V-13.....%	5
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	45.9
* Reactive Semifusinite.....%	14.4
Exinite.....%	0.1
Total Reactives.....%	60.4

INERT COMPONENTS

* Inert Semifusinite.....%	24.7
Macrinite.....%	1.2
Fusinite.....%	3.9
Inertodetrinite.....%	4.5
Mineral-Matter.....%	5.3
Total Inerts.....%	39.6

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.23
Calculated Balance Index.....	2.02
Calculated Strength Index.....	3.74
Calculated Stability Index.....	38.0
Predicted Free Swelling Index...	6

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-076
Pellet #2077/1

RH #918

27.0 to 28.5 m

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.23
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.63
VARIANCE	0.0033
STANDARD DEVIATION	0.0570
SKEWNESS	-0.0875
KURTOSIS	2.8857

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.05	1	1.00
3	1.10	6	6.00
4	1.15	15	15.00
5	1.20	36	36.00
6	1.25	27	27.00
7	1.30	13	13.00
8	1.35	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V10	1.00
V11	21.00
V12	63.00
V13	15.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #918
78.5 to 82.5

SAMPLE IDENTIFICATION

Laboratory Number.....	M2078	
Description.....	PG-84-077	
	Ash 9.5%	Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	3
V-12.....%	45
V-13.....%	47
V-14.....%	5
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	51.1
* Reactive Semifusinite.....%	11.8
Exinite.....%	0.0
Total Reactives.....%	62.9

INERT COMPONENTS

* Inert Semifusinite.....%	22.3
Macrinite.....%	0.6
Fusinite.....%	4.4
Inertodetrinite.....%	4.5
Mineral-Matter.....%	5.3
Total Inerts.....%	37.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.30
Calculated Balance Index.....	2.12
Calculated Strength Index.....	5.18
Calculated Stability Index.....	53.0
Predicted Free Swelling Index...	7

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-078
Pellet #2079/1

RH 918

88.5 to 90.5m.

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.28
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.12
VARIANCE	0.0043
STANDARD DEVIATION	0.0655
SKEWNESS	-0.6700
KURTOSIS	3.2961

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.05	1	1.00
3	1.10	4	4.00
4	1.15	5	5.00
5	1.20	13	13.00
6	1.25	34	34.00
7	1.30	28	28.00
8	1.35	15	15.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V10	1.00
V11	9.00
V12	47.00
V13	43.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH# 918

Sam 5

SAMPLE IDENTIFICATION

Laboratory Number..... M2080
Description..... PG-84-079
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	1
V-12.....%	4
V-13.....%	44
V-14.....%	47
V-15.....%	4
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	35.8
* Reactive Semifusinite.....%	13.5
Exinite.....%	0.0
Total Reactives.....%	49.3

INERT COMPONENTS

* Inert Semifusinite.....%	36.6
Macrinite.....%	1.3
Fusinite.....%	3.4
Inertodetrinite.....%	4.1
Mineral-Matter.....%	5.3
Total Inerts.....%	50.7

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.39
Calculated Balance Index.....	4.63
Calculated Strength Index.....	5.68
Calculated Stability Index.....	36.7
Predicted Free Swelling Index...	<4

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #2001
Seam 7U

SAMPLE IDENTIFICATION

Laboratory Number.....	M2087
Description.....	PG-84-086
	Ash 26.0% Sulphur 0.46%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	1
V-11.....%	24
V-12.....%	72
V-13.....%	3
V-14.....%	
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	45.4
* Reactive Semifusinite.....%	14.1
Exinite.....%	0.0
Total Reactives.....%	59.5

INERT COMPONENTS

* Inert Semifusinite.....%	27.6
Macrinite.....%	0.7
Fusinite.....%	4.3
Inertodetrinite.....%	2.6
Mineral-Matter.....%	5.3
Total Inerts.....%	40.5

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.23
Calculated Balance Index.....	2.09
Calculated Strength Index.....	4.42
Calculated Stability Index.....	46.2
Predicted Free Swelling Index...	5.5

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #2081
Seam 7

SAMPLE IDENTIFICATION

Laboratory Number..... M2088
Description..... PG-84-087
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	3
V-11.....%	31
V-12.....%	61
V-13.....%	5
V-14.....%	
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	45.2
* Reactive Semifusinite.....%	13.7
Exinite.....%	0.0
Total Reactives.....%	58.9

INERT COMPONENTS

* Inert Semifusinite.....%	30.0
Macrinite.....%	0.4
Fusinite.....%	4.4
Inertodetrinite.....%	1.0
Mineral-Matter.....%	5.3
Total Inerts.....%	41.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.22
Calculated Balance Index.....	2.11
Calculated Strength Index.....	4.40
Calculated Stability Index.....	45.6
Predicted Free Swelling Index...	5.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-088
Pellet #2089/1

RH #2001
Seam 7 Lower

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.15
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.90
VARIANCE	0.0032
STANDARD DEVIATION	0.0562
SKEWNESS	0.5684
KURTOSIS	3.5637

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.00	2	2.00
4	1.05	12	12.00
5	1.10	41	41.00
6	1.15	29	29.00
7	1.20	11	11.00
8	1.25	3	3.00
9	1.30	2	2.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V10	14.00
V11	70.00
V12	14.00
V13	2.00

Fording Coal Limited
Sample PG-84-089
Pellet #2090/1

R.H. #2001
Seam 5 upper

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.21
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	5.16
VARIANCE	0.0039
STANDARD DEVIATION	0.0626
SKEWNESS	0.4994
KURTOSIS	3.8716

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.05	3	3.00
3	1.10	9	9.00
4	1.15	27	27.00
5	1.20	32	32.00
6	1.25	21	21.00
7	1.30	5	5.00
8	1.35	2	2.00
9	1.40	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V10	3.00
V11	36.00
V12	53.00
V13	7.00
V14	1.00

Fording Coal Limited
Sample PG-84-090
Pellet #2091/1

RH ~2001
Seam 5 Lower

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.37
STANDARD ERROR OF THE MEAN	0.01
COEFFICIENT OF VARIATION .....%	4.29
VARIANCE	0.0034
STANDARD DEVIATION	0.0585
SKEWNESS	-0.1249
KURTOSIS	3.4147

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	1.15	1	1.00
3	1.20	1	1.00
4	1.25	8	8.00
5	1.30	22	22.00
6	1.35	33	33.00
7	1.40	30	30.00
8	1.45	4	4.00
9	1.50	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V11	1.00
V12	9.00
V13	55.00
V14	34.00
V15	1.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH 2005 Seam 5L

SAMPLE IDENTIFICATION

Laboratory Number.....	M2092
Description.....	PG-84-091
	Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	1
V-12.....%	24
V-13.....%	64
V-14.....%	11
V-15.....%	
V-16.....%	

REACTIVE COMPONENTS

Vitrinite.....%	62.7
* Reactive Semifusinite.....%	9.1
Exinite.....%	0.1
Total Reactives.....%	71.9

INERT COMPONENTS

* Inert Semifusinite.....%	15.7
Macrinite.....%	0.4
Fusinite.....%	4.1
Inertodetrinite.....%	2.6
Mineral-Matter.....%	5.3
Total Inerts.....%	28.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.32
Calculated Balance Index.....	1.50
Calculated Strength Index.....	5.69
Calculated Stability Index.....	62.3
Predicted Free Swelling Index...	8.5

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2005
Seam 4

SAMPLE IDENTIFICATION

Laboratory Number..... M2093
Description..... PG-84-092
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10....%	
V-11....%	5
V-12....%	13
V-13....%	69
V-14....%	12
V-15....%	1
V-16....%	

REACTIVE COMPONENTS

Vitrinite....%	46.0
* Reactive Semifusinite....%	15.6
Exinite....%	0.0
Total Reactives....%	61.6

INERT COMPONENTS

* Inert Semifusinite....%	25.4
Macrinite....%	0.6
Fusinite....%	2.9
Inertodetrinite....%	4.2
Mineral-Matter....%	5.3
Total Inerts....%	38.4

XX Stained/Oxidized Grains per 1000 Counts

PETROGRAPHIC INDICES

Mean Reflectance....%	1.34
Calculated Balance Index....	2.43
Calculated Strength Index....	5.56
Calculated Stability Index....	54.0
Predicted Free Swelling Index...	6.5

• **Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2010 19.5 - 22.5 m

SAMPLE IDENTIFICATION

Laboratory Number..... M2189
Description..... PG-84-094
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	3
V-10.....%	22
V-11.....%	63
V-12.....%	12
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	67.8
* Reactive Semifusinite.....%	7.5
Exinite.....%	0.2
Total Reactives.....%	75.5

INERT COMPONENTS

* Inert Semifusinite.....%	15.9
Macrinite.....%	0.5
Fusinite.....%	1.9
Inertodetrinite.....%	0.9
Mineral-Matter.....%	5.3
Total Inerts.....%	24.5

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.13
Calculated Balance Index.....	0.87
Calculated Strength Index.....	4.39
Calculated Stability Index.....	60.5
Predicted Free Swelling Index...	8.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

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SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2010

27.0 - 31.5

SAMPLE IDENTIFICATION

Laboratory Number.....	M2190
Description.....	PG-84-095

Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	23
V-11.....%	63
V-12.....%	14
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	62.1
* Reactive Semifusinite.....%	9.4
Exinite.....%	0.4
Total Reactives.....%	71.9

INERT COMPONENTS

* Inert Semifusinite.....%	18.0
Macrinite.....%	0.5
Fusinite.....%	2.0
Inertodetrinite.....%	2.3
Mineral-Matter.....%	5.3
Total Inerts.....%	28.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.14
Calculated Balance Index.....	1.05
Calculated Strength Index.....	4.39
Calculated Stability Index.....	60.1
Predicted Free Swelling Index...	8

*** Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2010
49.0 - 52.5 m

SAMPLE IDENTIFICATION

Laboratory Number.....	M2191
Description.....	PG-84-96

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	15
V-11.....%	72
V-12.....%	12
V-13.....%	1
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	45.3
* Reactive Semifusinite.....%	13.9
Exinite.....%	0.5
Total Reactives.....%	59.7

INERT COMPONENTS

* Inert Semifusinite.....%	25.6
Macrinite.....%	1.2
Fusinite.....%	4.5
Inertodetrinite.....%	3.6
Oxidized Coal.....%	0.1
Mineral-Matter.....%	5.3
Total Inerts.....%	40.3

1 Stained/Oxidized Grains per 1000 Counts

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.14
Calculated Balance Index.....	1.83
Calculated Strength Index.....	4.17
Calculated Stability Index.....	46.7
Predicted Free Swelling Index...	5

* **Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #2010
Seam #9

SAMPLE IDENTIFICATION

Laboratory Number.....	M2192
Description.....	PG-84-097
	Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	1
V-11.....%	5
V-12.....%	63
V-13.....%	31
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	49.6
* Reactive Semifusinite.....%	16.3
Total Reactives.....%	65.9

INERT COMPONENTS

* Inert Semifusinite.....%	21.8
Macrinite.....%	0.8
Fusinite.....%	4.1
Inertodetrinite.....%	2.1
Mineral-Matter.....%	5.3
Total Inerts.....%	34.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.27
Calculated Balance Index.....	1.74
Calculated Strength Index.....	4.95
Calculated Stability Index.....	55.6
Predicted Free Swelling Index...	7

• **Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2010
#7 Seam

SAMPLE IDENTIFICATION

Laboratory Number.....	M2193
Description.....	PG-84-098

Ash 9.5% **Sulphur 0.50%**

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	1
V-11.....%	15
V-12.....%	63
V-13.....%	20
V-14.....%	1
V-15.....%	

REACTIVE COMPONENTS

Vitrinite.....%	37.4
* Reactive Semifusinite.....%	18.8
Total Reactives.....%	56.2

INERT COMPONENTS

* Inert Semifusinite.....%	31.3
Macrinite.....%	0.9
Fusinite.....%	4.0
Inertodetrinite.....%	2.3
Mineral-Matter.....%	5.3
Total Inerts.....%	43.8

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.24
Calculated Balance Index.....	2.53
Calculated Strength Index.....	4.55
Calculated Stability Index.....	44.0
Predicted Free Swelling Index...	5

*** Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH "2010 Seam" # 5 upper

SAMPLE IDENTIFICATION

Laboratory Number.....	M2194
Description.....	PG-84-099

Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	1
V-11.....%	8
V-12.....%	50
V-13.....%	39
V-14.....%	2

REACTIVE COMPONENTS

Vitrinite.....%	36.7
* Reactive Semifusinite.....%	20.9
Total Reactives.....%	57.6

INERT COMPONENTS

• Inert Semifusinite.....%	30.1
Macrinite.....%	0.4
Fusinite.....%	4.5
Inertodetrinite.....%	2.0
Oxidized Coal.....%	0.1
Mineral-Matter.....%	5.3
Total Inerts.....%	42.4

1 Stained/Oxidized Grains per 1000 Counts

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.28
Calculated Balance Index.....	2.53
Calculated Strength Index.....	4.86
Calculated Stability Index.....	47.5
Predicted Free Swelling Index...	5.5

*** Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #2010

SAMPLE IDENTIFICATION

Laboratory Number..... M2195
Description..... PG-84-100
Ash 9.5% Sulphur 0.50%

'5 lower

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	1
V-10.....%	2
V-11.....%	7
V-12.....%	30
V-13.....%	45
V-14.....%	15
V-15.....%	

REACTIVE COMPONENTS

Vitrinite.....%	35.5
* Reactive Semifusinite.....%	15.5
Total Reactives.....%	51.0

INERT COMPONENTS

* Inert Semifusinite.....%	36.4
Macrinite.....%	1.7
Fusinite.....%	4.0
Inertodetrinite.....%	1.6
Mineral-Matter.....%	5.3
Total Inerts.....%	49.0

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.31
Calculated Balance Index.....	3.52
Calculated Strength Index.....	4.93
Calculated Stability Index.....	38.3
Predicted Free Swelling Index...	4

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

Turnbull Mtn. Outcrop

ST6 - ST7

SAMPLE IDENTIFICATION

Laboratory Number.....	M2196
Description.....	PG-84-101

Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	57
V-9.....%	43
V-10.....%	
V-11.....%	

REACTIVE COMPONENTS

Vitrinite.....%	67.8
* Reactive Semifusinite.....%	6.9
Exinite.....%	8.0
Total Reactives.....%	82.7

INERT COMPONENTS

* Inert Semifusinite.....%	8.3
Macrinite.....%	0.7
Fusinite.....%	1.9
Inertodetrinite.....%	1.1
Mineral-Matter.....%	5.3
Total Inerts.....%	17.3

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.89
Calculated Balance Index.....	0.57
Calculated Strength Index.....	3.14
Calculated Stability Index.....	34.0
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

Turnbull Mountain Subarp

ST8 + ST9

SAMPLE IDENTIFICATION

Laboratory Number..... M2197
Description..... PG-84-102
Ash 9.5% Sulphur 0.5

DISTRIBUTION OF VITRINITE TYPES

V-7.....%	17
V-8.....%	65
V-9.....%	18
V-10.....%	
V-11.....%	
V-12.....%	
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	56.7
* Reactive Semifusinite.....%	6.4
Exinite.....%	4.0
Total Reactives.....%	67.1

INERT COMPONENTS

* Inert Semifusinite.....%	17.5
Macrinite.....%	2.6
Fusinite.....%	4.0
Inertodetrinite.....%	3.4
Oxidized Coal.....%	0.1
Mineral-Matter.....%	5.3
Total Inerts.....%	32.9

1 Stained/Oxidized Grains per 1000 Counts

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.85
Calculated Balance Index.....	1.38
Calculated Strength Index.....	2.87
Calculated Stability Index.....	27.0
Predicted Free Swelling Index...	5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

Turnbull Mtn Subcrop
T-10

SAMPLE IDENTIFICATION

Laboratory Number..... M2198
Description..... PG-84-103
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-5....%	2
V-6....%	28
V-7....%	54
V-8....%	13
V-9....%	2
V-10....%	1
V-11....%	

REACTIVE COMPONENTS

Vitrinite....%	72.1
* Reactive Semifusinite....%	3.3
Exinite....%	13.1
Total Reactives....%	88.5

INERT COMPONENTS

* Inert Semifusinite....%	2.4
Macrinite....%	0.8
Fusinite....%	0.9
Inertodetrinite....%	2.1
Mineral-Matter....%	5.3
Total Inerts....%	11.5

PETROGRAPHIC INDICES

Mean Reflectance....%	0.73
Calculated Balance Index....	0.41
Calculated Strength Index....	2.69
Calculated Stability Index....	13.5
Predicted Free Swelling Index...	4?

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

Turnbull Mtn. Subcrop
T.12 - T.13

SAMPLE IDENTIFICATION

Laboratory Number.....	M2199
Description.....	PG-84-104

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-6.....%	18
V-7.....%	35
V-8.....%	28
V-9.....%	19
V-10.....%	
V-11.....%	
V-12.....%	

REACTIVE COMPONENTS

Vitrinite.....%	88.3
* Reactive Semifusinite.....%	1.0
Exinite.....%	3.4
Total Reactives.....%	92.7

INERT COMPONENTS

* Inert Semifusinite.....%	0.9
Macrinite.....%	0.0
Fusinite.....%	0.1
Inertodetrinite.....%	1.0
Mineral-Matter.....%	5.3
Total Inerts.....%	7.3

PETROGRAPHIC INDICES

Mean Reflectance.....%	0.80
Calculated Balance Index.....	0.23
Calculated Strength Index.....	2.69
Calculated Stability Index.....	0.0
Predicted Free Swelling Index...	?

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

CS -84 -027
1 seam

SAMPLE IDENTIFICATION

Laboratory Number..... M2111
Description..... PG-84-107
Ash 5.2% Sulphur 0.51%

DISTRIBUTION OF VITRINITE TYPES

V-8.....%	3
V-9.....%	34
V-10.....%	47
V-11.....%	8
V-12.....%	6
V-13.....%	2

REACTIVE COMPONENTS

Vitrinite.....%	64.6
* Reactive Semifusinite.....%	9.1
Exinite.....%	4.2
Total Reactives.....%	77.9

INERT COMPONENTS

* Inert Semifusinite.....%	14.5
Macrinite.....%	0.7
Fusinite.....%	2.1
Inertodetrinite.....%	1.9
Mineral-Matter.....%	2.9
Total Inerts.....%	22.1

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.03
Calculated Balance Index.....	0.73
Calculated Strength Index.....	3.86
Calculated Stability Index.....	52.0
Predicted Free Swelling Index...	8.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2007
#9 seam.

SAMPLE IDENTIFICATION

Laboratory Number..... M2210
Description..... PG-84-108

Ash 9.5% **Sulphur 0.50%**

DISTRIBUTION OF VITRINITE TYPES

V-8....%	1
V-9....%	1
V-10....%	1
V-11....%	7
V-12....%	65
V-13....%	25
V-14....%	

REACTIVE COMPONENTS

Vitrinite....%	52.2
* Reactive Semifusinite....%	13.5
Exinite....%	0.2
Total Reactives....%	65.9

INERT COMPONENTS

* Inert Semifusinite....%	23.9
Macrinite....%	0.7
Fusinite....%	3.0
Inertodetrinite....%	1.2
Mineral-Matter....%	5.3
Total Inerts....%	34.1

PETROGRAPHIC INDICES

Mean Reflectance....%	1.26
Calculated Balance Index....	1.71
Calculated Strength Index....	4.85
Calculated Stability Index....	55.1
Predicted Free Swelling Index...	7

• Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

Kit # 2007
Seam # 9 ~~Upper~~ Lower

SAMPLE IDENTIFICATION

Laboratory Number..... M2211
Description..... PG-84-109
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-10....%	
V-11....%	4
V-12....%	74
V-13....%	21
V-14....%	1
V-15....%	

REACTIVE COMPONENTS

Vitrinite....%	52.8
* Reactive Semifusinite....%	13.5
Exinite....%	0.1
Total Reactives....%	66.4

INERT COMPONENTS

* Inert Semifusinite....%	22.1
Macrinite....%	0.4
Fusinite....%	4.5
Inertodetrinite....%	1.2
Oxidized Coal....%	0.1
Mineral-Matter....%	5.3
Total Inerts....%	33.6

1 Stained/Oxidized Grains per 1000 Counts

PETROGRAPHIC INDICES

Mean Reflectance....%	1.27
Calculated Balance Index....	1.68
Calculated Strength Index....	4.88
Calculated Stability Index....	55.8
Predicted Free Swelling Index...	7

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2007
Upper

SAMPLE IDENTIFICATION

Laboratory Number..... M2212
Description..... PG-84-110
Ash 9.5% Sulphur 0.50%

DISTRIBUTION OF VITRINITE TYPES

V-9....%	1
V-10....%	1
V-11....%	46
V-12....%	48
V-13....%	4
V-14....%	

REACTIVE COMPONENTS

Vitrinite....%	65.1
* Reactive Semifusinite....%	7.1
Exinite....%	0.1
Total Reactives....%	72.3

INERT COMPONENTS

* Inert Semifusinite....%	17.7
Macrinite....%	0.6
Fusinite....%	2.4
Inertodetrinite....%	1.7
Mineral-Matter....%	5.3
Total Inerts....%	27.7

PETROGRAPHIC INDICES

Mean Reflectance....%	1.20
Calculated Balance Index....	1.13
Calculated Strength Index....	4.65
Calculated Stability Index....	61.3
Predicted Free Swelling Index...	8

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH #2007

SAMPLE IDENTIFICATION

#7

Laboratory Number..... M2213
Description..... PG-84-111
Ash 9.5% Sulphur 0.5%

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	1
V-10.....%	1
V-11.....%	32
V-12.....%	56
V-13.....%	10
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	46.7
* Reactive Semifusinite.....%	11.5
Exinite.....%	0.1
Total Reactives.....%	58.3

INERT COMPONENTS

* Inert Semifusinite.....%	32.4
Macrinite.....%	0.9
Fusinite.....%	1.5
Inertodetrinite.....%	1.6
Mineral-Matter.....%	5.3
Total Inerts.....%	41.7

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.22
Calculated Balance Index.....	2.19
Calculated Strength Index.....	4.43
Calculated Stability Index.....	45.2
Predicted Free Swelling Index...	5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

SUMMARY OF PETROGRAPHIC ANALYSIS

RH 2007

5 Lower

SAMPLE IDENTIFICATION

Laboratory Number.....	M2214
Description.....	PG-84-112

Ash 9.5% **Sulphur 0.5%**

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	
V-11.....%	4
V-12.....%	20
V-13.....%	59
V-14.....%	17
V-15.....%	

REACTIVE COMPONENTS

Vitrinite.....%	43.3
* Reactive Semifusinite.....%	16.9
Total Reactives.....%	60.2

INERT COMPONENTS

* Inert Semifusinite.....%	27.3
Macrinite.....%	1.1
Fusinite.....%	3.8
Inertodetrinite.....%	2.3
Mineral-Matter.....%	5.3
Total Inerts.....%	39.8

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.33
Calculated Balance Index.....	2.57
Calculated Strength Index.....	5.49
Calculated Stability Index.....	52.3
Predicted Free Swelling Index...	6

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-113
Pellet #2215/1

RH " 2018

35 - 36 m

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.08
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	4.50
VARIANCE	0.0024
STANDARD DEVIATION	0.0486
SKEWNESS	0.0971
KURTOSIS	3.9504

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.95	4	4.00
3	1.00	15	15.00
4	1.05	42	42.00
5	1.10	32	32.00
6	1.15	6	6.00
8	1.25	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 9	4.00
V10	57.00
V11	38.00
V12	1.00

Fording Coal Limited
Sample PG-84-114
Pellet #2216/1

RH # 2018

257.5 - 259

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.08
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	4.50
VARIANCE	0.0024
STANDARD DEVIATION	0.0486
SKEWNESS	0.0971
KURTOSIS	3.9504

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
2	0.95	1	1.00
4	1.05	2	2.00
5	1.10	10	10.00
6	1.15	31	31.00
7	1.20	37	37.00
8	1.25	15	15.00
9	1.30	4	4.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V 9	1.00
V10	2.00
V11	41.00
V12	52.00
V13	4.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH # 2018

Seam ?

SAMPLE IDENTIFICATION

Laboratory Number.....	M2217
Description.....	PG-84-115

Ash 9.5% **Sulphur 0.50%**

DISTRIBUTION OF VITRINITE TYPES

V-9.....%	1
V-10.....%	7
V-11.....%	45
V-12.....%	42
V-13.....%	5
V-14.....%	

REACTIVE COMPONENTS

Vitrinite.....%	52.3
* Reactive Semifusinite.....%	7.7
Exinite.....%	0.7
Total Reactives.....%	60.7

INERT COMPONENTS

* Inert Semifusinite.....%	29.5
Macrinite.....%	1.0
Fusinite.....%	1.9
Inertodetrinite.....%	1.6
Mineral-Matter.....%	5.3
Total Inerts.....%	39.3

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.19
Calculated Balance Index.....	1.89
Calculated Strength Index.....	4.37
Calculated Stability Index.....	48.0
Predicted Free Swelling Index...	5.5

* Semifusinite typing by Pearson's "Reactive Cutoff Technique"

Fording Coal Limited
Sample PG-84-116
Pellet #2218/1

RH 2018

28 - 29 mm

BASIC STATISTICS

NUMBER OF OBSERVATIONS	100
MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....%	1.12
STANDARD ERROR OF THE MEAN	0.00
COEFFICIENT OF VARIATION .....%	4.34
VARIANCE	0.0024
STANDARD DEVIATION	0.0488
SKEWNESS	1.0171
KURTOSIS	5.5489

CELL STATISTICS

CELL NUMBER	LOWER LIMIT	NUMBER OF OBSERVATIONS	FREQUENCY (%)
3	1.00	2	2.00
4	1.05	30	30.00
5	1.10	38	38.00
6	1.15	26	26.00
7	1.20	1	1.00
8	1.25	2	2.00
9	1.30	1	1.00

VITRINITE TYPE DISTRIBUTION

VITRINITE TYPE	FREQUENCY (%)
V10	32.00
V11	64.00
V12	3.00
V13	1.00

SUMMARY OF PETROGRAPHIC ANALYSIS

RH 2018

Tower

SAMPLE IDENTIFICATION

Laboratory Number..... M2219
Description..... PG-84-117
Ash 9.5% **Sulphur 0.50%**

DISTRIBUTION OF VITRINITE TYPES

V-10.....%	50
V-11.....%	49
V-12.....%	1
V-13.....%	

REACTIVE COMPONENTS

Vitrinite.....%	67.1
* Reactive Semifusinite.....%	6.3
Total Reactives.....%	73.4

INERT COMPONENTS

* Inert Semifusinite.....%	19.5
Macrinite.....%	0.1
Fusinite.....%	1.3
Inertodetrinite.....%	0.4
Mineral-Matter.....%	5.3
Total Inerts.....%	26.6

PETROGRAPHIC INDICES

Mean Reflectance.....%	1.10
Calculated Balance Index.....	0.92
Calculated Strength Index.....	4.20
Calculated Stability Index.....	58.5
Predicted Free Swelling Index...	8

*** Semifusinite typing by Pearson's "Reactive Cutoff Technique"**

K-FORDING RIVER 84A
APPENDIX III
DRILLHOLE SAMPLE
ANALYSES
(iii) FLUIDITY AND
DILATATION TESTS

CONFIDENTIAL

702
3A-3

~~CONFIDENTIAL~~

iii) Fluidity and Dilatation Tests*

* AUDIBERT - ARNU

DOH 1909 51276-297 +9

SAMPLE: DOH wash #001
(RAW CRUSHED -28 +10T CONC ASSAYED)

I.M.	ASH	VCM	F.C.	F.S.I.	S.	Kcal
.4	9.12	21.8	68.5	3½	.35	

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	433
MAXIMUM	5.6	457
FINAL	1.1	473
	RANGE = 40	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
+15	—	20	—

702

51299-03

#7

SAMPLE: DDHWash #002
(RAW CRUSHED - 28 # flot conc assayed)

I.M.	ASH	VCM	F.C.	F.S.I.	S.	Kcal
.5	17.74	19.5	62.3	2½	.54	

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.2	426
MAXIMUM	15.3	459
FINAL	1.1	481
	RANGE = 55	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
419	—	16	—

306-313

#7

SAMPLE: DDH wash #602
(RAW CRUSHED - 28 float conc assumed)

I.M.	ASH	VCM	F.C.	F.S.I.	S.	Heat
.4	17.69	21.4	58.5	6	.48	

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	423
MAXIMUM	78	461
FINAL	1.0	486
	RANGE = 63	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
401	483	24	-11

SAMPLE: DDH Wash #24 (64330-35) Clean -28 Crush Test #1 Core

	T.M.	ASH	VCM	F.C.	F.S.I.	S.	Heat
Core	.7	14.4	20.6	64.3	5½	.34	
Tails		71.0			0		

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	430
MAXIMUM	23	462
FINAL	1.1	483
	RANGE = 53	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
408	NIL	24	NIL

DDH 1912

SAMPLE: DDH wash #31 (1435.0-53.6) Clean -28 crush float #1 coal

F.M.	ASH	VOL	F.C.	F.S.I.	S.	Rel
-4	18.9	20.7	59.3	7½	.51	
	46.4			½		

Seam 2

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.2	416
MAXIMUM	511	464
FINAL	1.6	487
	RANGE = 71	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
388	472	22	43

DDH 1903

SAMPLE: Mhwash #32 (6441-13) Clean-23 Crush Test #1 Conc

	I.M.	ASH	VCM	F.C.	F.S.I.	S.	Hgi
Conc	.5	13.6	21.7	64.2	6½	.41	
ils		54.8			1		

Seam #5U

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	416
MAXIMUM	174	458
FINAL	2.1	481
	RANGE =	65

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
398	480	21	3

DCH 1908

SAMPLE: DCH wash #33 (64417-24) Clean -28 crush Test #1 Conc

I.M.	ASH	VOM	F.C.	F.S.I.	S.	Heat
.7	11.6	19.9	67.8	1½	.39	
	70.0			0		

Seam 5L

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.3	448
MAXIMUM	2	457
FINAL	1.3	463
	RANGE =	15

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
409	NIL	20	NIL

DDH 1908

SAMPLE: DDH 1908 [illegible] (644.27-.30) Clean 28 Crush Test #1 Conc

	I.M.	ASH	VCM	F.C.	F.S.I.	S.	[illegible]
Conc	.6	9.6	20.4	69.4	1½	.42	
Tails		85.2			1		

Seam 4U

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	449
MAXIMUM	1	460
FINAL	1.2	460
	RANGE = 11	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
406	NIL	21	NIL.

LGH 1908

SAMPLE: DDH Wash #35 (1443½-45) Clean 28 crush Test #1 Conc

	I.M.	ASH	VOM	F.C.	F.S.I.	S.	[illegible]
Conc.	.6	8.00	20.9	70.6	2½	.36	
Rus		59.9			0		

Seam #9

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	439
MAXIMUM	2	456
FINAL	1.2	466
	RANGE = 27	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
419	NIL	19	NIL

DDH 1908

SAMPLE: DDH wash #30 (6444B-54) Clean -28 crush Test #1 Core

	I.M.	ASH	VDM	F.C.	F.S.I.	S.	HGI
Conc	.6	7.1	20.4	71.9	6½	.51	
Ls		50.4			1		

Seam 7

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	431
MAXIMUM	52	463
FINAL	1.8	485
	RANGE = 54	

DILATATION TEST			
S.P. (C°)	M.D.T. (C°)	M.C.%	M.D.%
416	482	21	-13

SAMPLE: DDH Wash #37 (DDH 1908) (4458-62) Clean -28 Crush Test 7 Core

	I.M.	ASH	VOL	F.C.	F.S.I.	S.	YIELD
Core	.6	13.9	17.2	68.3	1½	.48	
Ds		47.0			1		

Seam # 5L

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	440
MAXIMUM	2	458
FINAL	1.0	472
	RANGE = 32	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
434	NIL	11	NIL

DDH 1903

SAMPLE: DDH Winch #38 (6443-72) Clean -28 Crush 2nd 1 Conc

	I.M.	ASH	VOM	F.C.	F.S.I.	S.	TOTAL
Conc	.6	11.1	18.7	69.6	6	.42	
Tailings		53.4			1/2		

Seam #4U

GIESELER FLUIDITY TESTS		
	DDPM	DDPM/°C
START	1.3	444
MAXIMUM	5	466
FINAL	1.0	481
	RANGE = 37	

DILATATION TEST			
S.D. (°C)	M.D.D. (°C)	M.C.%	M.D.%
422	NIL	21	NIL

SAMPLE: DDH Wash #39 (64475-79) Clean-28 Crush Dist #1 Cone

	F.M.	ASH	VDM	F.C.	F.S.I.	S.	Yield
Cone	.7	4.7	23.4	71.2	8	.57	
Tails		22.8			6		

Seam 4L

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.3	408
MAXIMUM	1660	461
FINAL	1.5	493
	RANGE = 85	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
388	486	25	126

SAMPLE: DDH Winch #40 (DDH 1903 6-4431-33) Clean -28 crush Test #1

	I.M.	ASH	VOM	F.C.	F.S.I.	S.	Kcal
C %	.3	11.1	19.3	69.3	3	.50	
Tails		44.9			1		

Seam 2

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	442
MAXIMUM	4	465
FINAL	1.5	477
	RANGE = 35	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
424	NIL	21	NIL

[illegible]: DDH Wash #41 (64434-36) Clean 230 crush Test #1 DDH 1908

	[illegible]	ASH	[illegible]	F.C.	F.S.I.	S.	[illegible]
Conc	.7	10.4	20.2	68.7	7	.45	
Tails		41.4			1		

Sem /

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.2	415
MAXIMUM	463	466
FINAL	1.3	494
	RANGE = 79	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
397	484	23	35

SAMPLE: DDH Wash #42 (DDH 1906 / 47031-37) Clean-28 crush Dest #1

I.M.	ASH	VDM	F.C.	F.S.I.	S.	Heat
.6	12.0	19.2	63.2	1	.41	
	44.3			1/2		

Conc
Ta S

Seam 5 Lower

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	NIL	
MAXIMUM		
FINAL		
	RANGE =	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
420	NIL	11	NIL

SAMPLE: DDH Wash #43 (47038-44) DDH A06 Clean -28 crush Test #1

T.M.	ASH	VCM	F.C.	F.S.I.	S.	Heat
.7	11.4	19.1	68.3	3	.43	
	58.6			1/2		

Seam 4 upper

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	441
MAXIMUM	2	461
FINAL	1.2	473
	RANGE = 32	

DILATATION TEST			
S.P. (C°)	M.D.T. (C°)	M.C.%	M.D.%
422	NIL	21	NIL

DDH 1906

SAMPLE: DDHirsh #44 (47048-50 / 64851-55) Clean-28 Crush Dist #1

	F.M.	ASH	VCM	F.C.	F.S.I.	S.	Heat
Conc	.6	11.50	21.1	66.8	6	.40	
Tails		45.3			1		

Seam 4 Lower

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	430
MAXIMUM	31	466
FINAL	2.0	484
	RANGE = 54	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
404	479	21	-8

DDH 906

SAMPLE: DDH Wash #46 (6487.0-72) Clean -28 crush Test #1

	I.M.	ASH	VOM	F.C.	F.S.I.	S.	Heat
Core	.7	10.49	19.4	69.4	1	.42	
Tails		39.5			1/2		

Seam #7 upper

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	.5	459
MAXIMUM	NIL	
FINAL		
	RANGE =	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
431	NIL	8	NIL

DDH 906

SAMPLE: DDH Wash #49 (4573-79) Clean 23 Wash Dust #1

	T.M.	ASH	VCM	F.C.	F.S.I.	S.	Yield
Conc	.6	15.22	21.1	63.1	2½	.51	
Mts		63.8			0		

Seam #7

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	441
MAXIMUM	2	458
FINAL	1.1	470
	RANGE =	29

DILATATION TEST			
S.D. (C°)	M.D.T. (C°)	M.C.%	M.D.%
424	NIL	15	NIL

DDH [illegible]

SAMPLE: [illegible] #43 ([illegible]) Clean -28 crush [illegible] #1

	I.M.	ASH	VCM	F.C.	F.S.I.	S.	[illegible]
[illegible]	.6	13.5	20.6	65.3	4½	.59	
[illegible]		70.8			½		

Seam #5 upper

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	423
MAXIMUM	37	460
FINAL	1.3	485
	RANGE = 62	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
414	NIL	15	NIL

DDH 1906

SAMPLE: DDH Winsor #49 (1.4883-86) Clean -28 mesh Dust #1

F.M.	ASH	VCM	F.C.	F.S.I.	S.	Total
.9	12.0	13.6	68.5	2½	.46	
	43.4			1		

Part 5L

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	444
MAXIMUM	2	458
FINAL	1.0	473
	RANGE = 29	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
429	NIL	13	NIL

DDH 1966

SAMPLE: LCH Wash #50 (1.4827-59) [illegible]

I.M.	ASH	VM	F.C.	F.S.I.	S.	Cal
.9	14.2	18.3	66.1	3	.43	
	50.5			1		

Part of 5 lower

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	438
MAXIMUM	5	463
FINAL	1.0	470
	RANGE = 32	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
424	NIL	18	NIL

DDH 1906

SAMPLE: DDH WASH #51 (64892-64900) Clean -28 Crush Seam #1

T.M.	ASH	VCM	F.C.	F.S.I.	S.	Heat
1.0	9.3	19.0	70.7	4	.42	
Tests	330			1		

Seam #4 upper

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	442
MAXIMUM	4	465
FINAL	1.4	478
	RANGE = 36	

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
418	NIL	19	NIL

DDH 1906

SAMPLE: DDH WASH #52 (4905-12) Clean -28 Crush Dry #1

F.M.	ASH	VDM	F.C.	F.S.I.	S.	Rel
.7	11.7	19.4	68.2	5½	.60	

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	429
MAXIMUM	24	463
FINAL	1.4	485
	RANGE = 56	

Seam #4 lower

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
408	NIL	21	NIL

SAMPLE: DDH WASH #53 (64916-18) (DDH 1906) Clean -28 Crush Test #1

T.M.	ASH	VCM	F.C.	F.S.I.	S.	Hgt
.7	14.6	19.2	65.5	6½	.54	

Seam #3

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	423
MAXIMUM	279	466
FINAL	2.0	491
	RANGE =	68

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
398	473	21	5

DNA 1402

SAMPLE: DDH WASH #54(64919-21) Clean -28 crush Test#1

I.N.	ASH	VOM	F.C.	F.S.I.	S.	Reel
.6	13.1	21.0	65.3	8	.53	
	43.6			1		#2 Seam

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	419
MAXIMUM	489	462
FINAL	1.4	493
	RANGE =	74

D/F TEST 106

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
390	478	25	44

SAMPLE: DDH 1907(64929-44) WASH # 56
(-28 CRUSH TEST #1)

T.M.	ASH	VCM	F.C.	F.S.I.	S.	Foss
.6	8.0	21.8	69.0	2 ½	.39	
	40.8			½		

ON
AILS

Seam #9

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	444
MAXIMUM	1.4	456
FINAL	1.0	464
	RANGE =	20.

D/F TEST 108

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
419	NIL	16	NIL

SAMPLE: DDH 1907 (6495O - 57) WASH # 57
(-28 CRUSH TEST A1)

	T.M.	ASH	VOM	F.C.	F.S.I.	S.	Fe%
CON	.6	15.5	21.7	61.6	5 1/2	.51	
TAILS		55.8			1/2		

Seam #7

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	427
MAXIMUM	23.3	460
FINAL	1.0	483
	RANGE =	56

D/F TEST 109

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
408	NIL	22	NIL

SAMPLE: DDH 1907 (64960-61) WASH 59
(-28 CRUSH TEST I)

	T.M.	ASH	VCM	F.C.	F.S.I.	S.	Rel
CON	.4	19.4	21.3	58.5	6½	.58	
TA.-S		51.4			1		

part "5"

GIESELER FLUIDITY TESTS		
	DDPM	DDPM (C°)
START	1.2	414
MAXIMUM	293	454
FINAL	1.5	486
	RANGE =	72

D/F TEST 111

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
395	471	24	34

SAMPLE: DDH 1907 (6495B-59) WASH #58
(-28 CRUSH TEST #1)

I.M.	ASH	VDM	F.C.	F.S.I.	S.	TOTAL
.5	12.4	~~19.5~~	67.1	2	.60	
	57.9			½		

CO
TAILS

Sem #5

GIESELER FLUIDITY TESTS		
	DDPM	DDPM (C°)
START	1.1	432
MAXIMUM	3.9	454
FINAL	1.3	473
	RANGE =	41

D/F TEST 110

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
421	NIL	17	NIL

SAMPLE: DDH 1907 (6496.2 - 6.5) WASH #60
(-28 CRUSH TEST)

I.M.	ASH	VCM	F.C.	F.S.I.	S.	Heat
.3	11.6	19.0	69.1	2½	.56	
	50.8			½		

Part 5 Lower

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.2	446
MAXIMUM	2.4	457
FINAL	1.2	472
	RANGE =	26

D/F TEST 112

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
424	NIL	16	NIL

SAMPLE: DDH 190 (64966-74) WASH 61

F.M.	ASH	VOL	F.C.	F.S.I.	S.	Rel
.3	9.3	19.5	70.9	3 ½	.48	
	54.4			0		

CON

TL

#4 upper

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	440
MAXIMUM	2.1	462
FINAL	1.1	471
	RANGE =	31

D/F TEST 113

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
422	N/A	21	N/A

SAMPLE: DDA-1967 (64977-82) NASA 62

F.M.	REH	MOM	P.D.	F.S.I.	S.	TOBL
1.6	11:27	16.9	70.2	3 1/2	.48	
	52.0			1		

H

lower

GIESELER FLUIDITY TESTS		
	RPM	DEVD. (C°)
START	1.1	444
MAXIMUM	4.3	466
FINAL	1.1	480
	RANGE =	36

D/F 114

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
423	N/A	23	N/A

SAMPLE: DDH 190, (64986-92)
7

WASH 63

	T.M.	ASH	VOM	F.C.	F.S.I.	S.	Heat
cc	1.9	8.08	20.0	70.0	8 1/2	.67	
TLS		42.6			1		

#2 Seam.

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	413
MAXIMUM	671	463
FINAL	1.3	495
	RANGE =	82

D/F 1.15

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
392	480	25	79

SAMPLE: DDH 1907 (64993-96) WASH 64

I.M.	ASH	VOM	F.C.	F.S.I.	S.	Yield
.2	12.83	18.9	68.1	6 1/2	.51	

Seam #1.

GIESELER FLUIDITY TESTS		
	DDPM	DDPM/in²
START	1.2	421
MAXIMUM	454	463
FINAL	1.5	489
	RANGE =	68

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
394	470	22	20

SAMPLE: DDH 1906 (64922-25, 64951) WASH # 55
(-28 CRUSH TEST #1)

	T.M.	ASH	VCM	F.C.	F.S.I.	G.	Rel
CC·1	.5	12.0	19.1	68.4	7	.56	
TAILS		44.8			1		

#1 Seam

GIESELER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.2	433
MAXIMUM	98	470
FINAL	1.4	494
	RANGE =	61

D/F TEST 107

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
420	483	18	7

Ford 'ng COAL LIMITED

D.H 94B	Ash	VCN	F.C.	FSI	S	I.M.		Fluidity		Dilatation		
L SEAM (RAW)	29.08	27.5	42.42	6½	0.60	1.0		419		17		Yield 67% @ 1.50 S.G.
L SEAM (CLEAN)	7.00	34.7	57.3	6½	0.64	1.0		1787		79		
DH 949												
M Seam (Raw)	19.20	29.9	49.90	7	0.61	1.0		1838		18		Yield 80.8% @ 1.50 S.G.
M Seam (clean)	6.00	33.1	59.7	4½ (7½)	0.64	1.2		34 (2500+)		-15 (80+)		

Comments:

Samples Sink-floated in zinc chloride. This procedure worked for 'L' seam but not for 'M' seam. 'M' seam's clean fluidity, dilatation and FSI were affected by the lab washing process and are not to be quoted. More realistic clean data for M seam are noted in brackets in red.

The clean samples of L and M seam are to be sent to R. Stein in Calgary for (petrography) ash analysis, ultimate analysis and ash fusion temp tests

↓ Sent from Fording River 27 Sept '84

J.R. Dean

19 Sept '84

207

8223—NDN

Fording COAL LIMITED

M SEAM WASH #2 — SEPT 20/84

	%WT	Σ%WT	Ash	Σ%Ash	FSI
+28 mesh	75.9	75.9	22.32	22.32	6½
28 x 65 mesh	13.5	89.4	10.76	20.57	6½
-65 mesh	10.6	100.0	11.04	19.56	7

Yield: 76.7 %

+28 mesh

	%WT	Σ%WT	Ash	Σ%Ash	FSI
1.50F	71.3	71.3	3.8	3.8	3
1.50S	28.7	100.0	79.8	25.6	0

28 x 65 mesh

	%WT	Σ%WT	Ash	Σ%Ash	FSI
CONC	93.1	93.1	7.1	7.1	6½
TS	6.9	100.0	69.0	11.4	1

-65 mesh

	%WT	Σ%WT	Ash	Σ%Ash	FSI
CONC	93.9	93.9	7.5	7.5	6½
TS	6.1	100.0	71.7	11.4	½

	Rm	Ash	VM	FC	FSI	S
RAW HEAD	1.0	19.20	29.9	49.9	7	.61
CLEAN HEAD	1.1	5.30	32.8	60.8	4½	.62

Fording COAL LIMITED

M SEAM WASH — SEPT 10/84

	%WT	Σ%WT	Ash	Σ%Ash	FSI
+28 mesh	75.9	75.9	22.32	22.32	6½
28×65 mesh	13.5	89.4	10.76	20.57	6½
−65 mesh	10.6	100.0	11.04	19.56	7

Yield = 80.8%

+28 mesh

	%WT	Σ%WT	Ash	Σ%Ash	FSI
1.50F	76.7	76.7	4.8	4.8	3
1.50S	23.3	100.0	81.0	22.6	0

28×65 mesh

	%WT	Σ%WT	Ash	Σ%Ash	FSI
CONC	92.8	92.8	7.2	7.2	6½
TS	7.2	100.0	68.6	11.6	1

−65 mesh

	%WT	Σ%WT	Ash	Σ%Ash	FSI
CONC	94.9	94.9	8.4	8.4	6½
TS	5.1	100.0	74.6	11.8	½

	Rm	Ash	Vm	FC	FSI	S
RAW HEAD	1.0	19.20	29.9	49.9	7	.61
CLEAN HEAD	1.2	6.00	33.1	59.7	4½	.64

Forcing COAL LIMITED

L SEAM WASH

SEPT 10/84

	%WT	≤%WT	Ash	≤%Ash	FSI
+28 mesh	79.5	79.5	39.74	39.74	4½
28x65 mesh	11.4	90.9	17.30	36.93	6½
-65 mesh	9.1	100.0	19.80	35.37	7

Yield: 67.4%

+28 Mesh

	%WT	≤%WT	Ash	≤%Ash	FSI
1.50F	62.0	62.0	6.0	6.0	7
1.50S	37.0	100.0	79.0	33.0	0

28x65 mesh

	%WT	≤%WT	Ash	≤%Ash	FSI
CONC	84.8	84.8	9.1	9.1	7
TS	15.2	100.0	70.8	18.5	1

-65 mesh

	%WT	≤%WT	Ash	≤%Ash	FSI
CONC	92.5	92.5	14.6	14.6	7
TS	7.5	100.0	83.0	19.7	0

	RM	Ash	VM	FC	FSI	S
RAW HEAD	1.0	29.08	27.5	42.4	6½	.60
CLEAN HEAD	1.0	7.00	34.7	57.3	6½	.64

...UING COAL LIMITED
...AL SAMPLES DH-948 & DH-949 RECEIVED OCT. 3/84
2913-2914
OCTOBER 4, 1984

ULTIMATE ANALYSIS, as received basis

LAB NO.	SAMPLE I.D.	H2O	C	H	N	S	ASH%	O (BY DIFF)
2913	L Seam DH-948	0.47	78.29	5.11	1.40	0.65	6.83	7.25
2914	M Seam #1 DH-949	0.40	78.24	5.08	1.39	0.68	5.87	8.34

ASH FUSION TEMPERATURES (DEGREE F)

LAB NO.	SAMPLE NO.	ATMOSPHERE	IDT	ST	HT	FT
2913	DH-948	OXIDIZING	2550	2720	2750	2800+
		REDUCING	2520	2630	2740	2800+
2914	DH-949	OXIDIZING	2770	2800+	—	—
		REDUCING	2750	2800+	—	—

MINERAL ANALYSIS OF ASH

AB NO:	SiO2	Al2O3	TiO2	Fe2O3	CaO	MgO	Na2O	K2O	P2O5	SO3	UNDET
913	63.84	23.16	1.19	3.72	2.60	0.56	0.09	1.39	1.86	0.14	-1.45
914	63.98	26.58	1.42	2.02	1.74	0.56	0.07	1.52	1.25	0.10	-0.76

as of 21 Feb '85
Locations: DDH 948

150,930.7 N
21504. E
1762.9

Coal from 8.4 to 14.5
part 10.5 to 11.6
O.B. 6.1m
total depth 14.5

APPROX → DDH 949. Copy

151037.5 N
21498 E
1770.9

Coal from 13.2 to 17.4
parting 14.2 to 14.9
O.B. 5m
total depth 17.4

Birtley Coal & Minerals Testing

CLIENT: FORDING COAL LIMITED
PROJECT: COAL SAMPLES DH-948 & DH-949 RECEIVED OCT. 3/84
LAB NO: 2913-2914
DATE: OCTOBER 4, 1984

ULTIMATE ANALYSIS, as received basis

LAB NO.	SAMPLE I.D.	H20	C	H	N	S	ASH%	O (BY DIFF)
2913	L Seam clean DH-948	0.47	78.29	5.11	1.40	0.65	6.83	7.25
2914	M Seam clean DH-949	0.40	78.24	5.08	1.39	0.68	5.87	8.34

ASH FUSION TEMPERATURES (DEGREE F)

LAB NO.	SAMPLE NO.	ATMOSPHERE	IDT	ST	HT	FT
2913	DH-948	OXIDIZING	2550	2720	2750	2800+
		REDUCING	2520	2630	2740	2800+
2914	DH-949	OXIDIZING	2770	2800+	—	—
		REDUCING	2750	2800+	—	—

MINERAL ANALYSIS OF ASH

LAB NO:	SiO2	Al2O3	TiO2	Fe2O3	CaO	MgO	Na2O	K2O	P2O5	SO3	UNDET
2913	63.84	23.16	1.19	3.72	2.60	0.56	0.09	1.39	1.86	0.14	-1.45
2914	63.98	26.58	1.42	2.02	1.74	0.56	0.07	1.52	1.25	0.10	-0.76

Birtley Coal
& Minerals Testing

Sept 20/84

SAMPLE: M Seam Clean #2

I.M.	ASH	VCM	F.C.	F.S.I.	S.
1.1	5.30	32.8	60.8	4½	.62

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	409°
MAXIMUM	39.0	444°
FINAL	2.3	461°
	RANGE =	52

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
380°	456°	28	-20

Sept 11/84

SAMPLE: M Seam Raw Core DH 949

I.M.	ASH	VCM	F.C.	F.S.I.	S.
1.0	19.20	29.9	49.90	7	.61

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	399°
MAXIMUM	1837.9	442°
FINAL	1.0	468°
	RANGE =	69

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
375°	466°	29	18

Sept 10/84

SAMPLE: M Seam Clean

I.M.	ASH	VCM	F.C.	F.S.I.	S.
1.2	6.00	33.1	59.7	4½	.64

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.2	414°
MAXIMUM	33.6	448°
FINAL	1.1	460°
	RANGE =	46

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
378°	458°	26	−15

Sept 11/84

SAMPLE: L Seam Raw Core DH948

I.M.	ASH	VCM	F.C.	F.S.I.	S.
1.0	29.08	27.5	42.42	6½	.60

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.0	406°
MAXIMUM	419.0	441°
FINAL	1.4	465°
	RANGE =	59

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
371°	456°	27	17

Sept 10/84

SAMPLE: L Seam Clean

I.M.	ASH	VCM	F.C.	F.S.I.	S.
1.0	7.00	34.7	57.3	6½	.64

GIESELLER FLUIDITY TESTS		
	DDPM	TEMP. (C°)
START	1.1	400°
MAXIMUM	1786.8	438°
FINAL	1.1	469°
	RANGE =	69

DILATATION TEST			
S.T. (C°)	M.D.T. (C°)	M.C.%	M.D.%
366°	453°	27	79